



Public Certification Report

FISHERY NAME:

**ARGENTINE RED SHRIMP (*Pleoticus muelleri*) OFFSHORE BOTTOM TRAWL
FISHERY IN FEDERAL WATERS**

INITIAL ASSESSMENT

CERTIFICATION ASSESSMENT BODY:

ORGANIZACION INTERNACIONAL AGROPECUARIA S.A. (OIA)

ASSESSMENT TEAM:

Eng. Pedro A. Landa (Fishery Team Leader), M.Sc. Pedro De Carli, Eng. Denise Bore, Eng. Edith Saa Collantes and Eng. Carolina Medina Foucher (MSC Program Manager)

FISHERY CLIENT: *Achernar S.A.S., Agropez S.A., Arbumasa S.A., Argenova S.A., Buena Proa S.A., Cabo Virgenes S.A., Catesur S.A., Centomar S.A., Conarpesa Continental Armadores de Pesca S.A., Cooke Group (conformed by: Grinfin S.A. and Wanchese Argentina S.R.L.), Estrella Patagonica S.A., Food Partners Patagonia S.A., Iberconsa de Argentina S.A., Luis Solimeno e Hijos S.A. Pedro Moscuza e Hijos S.A., Pesquera Deseado S.A.U., Pesquera Latitud 46 Grados Sur S.A., Pesquera Santa Cruz S.A.U., Pesquera Veraz S.A., Pesqueria del Atlantico S.A., Red Chamber Argentina S.A., San Isidro Group (conformed by: Arela S.A., Greciamar S.A., La Escalerona S.A., Pesquera Olivos S.A., Pesquera San Isidro S.A. and Riminimarr S.A.), Thorpesca S.A.S., Urbipez Group (Urbipez S.A. and Pelagic S.A.), Vieira Argentina S.A and Xeitosiño S.A.*

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Assessment against MSC Principles and Criteria for **ARGENTINE RED SHRIMP (*Pleoticus muelleri*)** **OFFSHORE BOTTOM TRAWL FISHERY IN FEDERAL WATERS**

11 February 2026

FISHERY CLIENTS:

Achernar S.A.S.

Contact: Gustavo Adrian Servente
Address: Colombia 1525, (9120) Puerto Madryn, Chubut, Argentina
Tel: (+54 9 280) 15456 3322
Email: gservente@pesquera-achernar.com.ar

Arela S.A.

Contact: Carlos Marcelo Abuin
Address: Rawson 809, (9120) Puerto Madryn, Chubut, Argentina
Tel: (+54 280) 445 2248
Email: cabuin@gruposanisidro.com.ar

Cabo Virgenes S.A.

Contact: Mauricio Paniagua
Address: Alsina Adolfo 547 Floor 2, (1087) C.A.B.A., Argentina
Tel: (+54 280) 449 8221
Email: mpaniagua@cabovirgenes.com

Conarpesa Continental de Armadores de Pesca S.A.

Contact: Fernando Alvarez Castellano
Address: Jeronimo Salguero 2731 Floor 5 Of. 51, (1425) C.A.B.A., Argentina
Tel: (+54 11) 4803 0772
Email: pablom@conarpesa.com.ar

Greciamar S.A.

Contact: Sebastian De Haro
Address: Angel Timinieri S/N, (9120) Chubut, Argentina
Tel: (+54 280) 445 2248
Email: sdeharo@gruposanisidro.com.ar

Agropez S.A.

Contact: Fernando Alvarez Castellano
Address: Jeronimo Salguero 2731 Floor 5 Of. 51, (1425) C.A.B.A., Argentina
Tel: (+54 280) 459 5813
Email: FAC@conarpesa.com.ar

Argenova S.A.

Contact: Mauro Zamboni
Address: Leandro Alem 855 Floor 32, (1001) C.A.B.A., Argentina
Tel: (+54 11) 7078 0932
Email: mzamboni@argenova.com.ar

Catesur S.A.

Contact: Federico Sallustio
Address: Calle 5 entre 6 y 8, Parque Industrial Gral Savio, (7601) General Pueyrredon, Buenos Aires, Argentina
Tel: (+54 223) 544 0675
Email: contacto@catesur.com

Estrella Patagonica S.A.

Contact: Buenaventura Lafuente Matos
Address: Parque Industrial Pesquero S/N, (9120) Puerto Madryn, Chubut, Argentina
Tel: (+54 9 280) 445 1299
Email: epsa@estrellapatagonica.com.ar

Grinfin S.A.

Contact: Pedro Ibar Böhnsdalen
Address: Olga Cossettini 363 Floor 3, (1107) C.A.B.A., Argentina
Tel: (+54 223) 489 0814
Email: administracion@wanchese.com.ar

Arbumasa S.A.

Contact: Gustavo Casanova
Address: Av. Alicia Moreau de Justo 740 Floor 1 Of. 20/21, (1107) C.A.B.A., Argentina
Tel: (+54 11) 4600 6800
Email: gustavo.casanova@grupoarbumasa.com

Buena Proa S.A.

Contact: Sebastian Blandino
Address: Rosales 3157, (7600) Mar del Plata, Buenos Aires, Argentina
Tel: (+54 223) 480 6611
Email: info@buenaproa.com.ar

Centomar S.A.

Contact: Nikolay Nikiforov
Address: Sarmiento 776 Of. 3B, (1041) C.A.B.A., C.A.B.A., Argentina
Tel: (+54 11) 5263 2860
Email: gerencia@crabsa.com.ar

Food Partners Patagonia S.A.

Contact: Carlos Molina
Address: Tucuman 1452 Floor 3 Of. 7, (1050) C.A.B.A., Argentina
Tel: (+54 9 11) 4251 1725
Email: carlos.molina@food-partners-patagonia.com

Iberconsa de Argentina S.A.

Contact: Facundo Jorge Godoy
Address: Pque. Ind. Pesquero, Macizo 8, Parcela 5, (9120) Chubut, Argentina
Tel: (+54 280) 4453 088
Email: facundo.godoy@iberconsa.com

La Escalerona S.A.

Contact: Sebastian De Haro
Address: Ruta Prov. Nro. 1 and Ruta
Prov. Nro. 41, (9120) Puerto Madryn,
Chubut, Argentina
Tel: (+54 280) 445 2248
Email: sdeharo@gruposanisidro.com.ar

Pelagic S.A.

Contact: Maria Lina Ramaci
Address: Magallanes 3136 Of. 1B,
(7600) Mar del Plata, Buenos Aires,
Argentina
Tel: (+54 9 223) 4279 195
Email: urbipezsa@outlook.com

Pedro Moscuza e Hijos S.A.

Contact: Jose Marcelo Moscuza
Address: Ortiz de Zarate 2950, (7600)
Mar del Plata, Buenos Aires, Argentina
Tel: (+54 223) 4619 200
Email: lujan@moscuza.net

Pesquera Olivos S.A.

Contact: Agustin Rocca
Address: Rawson 809, (9120) Puerto
Madryn, Chubut, Argentina
Tel: (+54 280) 445 2248
Email: arocca@gruposanisidro.com.ar

Riminimarr S.A.

Contact: Agustin Rocca
Address: Rawson 809, (9120) Puerto
Madryn, Chubut, Argentina
Tel: (+54 280) 445 2248
Email: arocca@gruposanisidro.com.ar

Vieira Argentina S.A.

Contact: Eduardo Vieira Varela
Address: Av. Cabildo 918 Floor 2,
(1426) C.A.B.A., Argentina
Tel: (+54 11) 5238 1800
Email: vieirasa@vieirasa.com.ar

Luis Solimeno e Hijos S.A.

Contact: Alberto Procelli
Address: Juan B. Justo 1128, (7600) Mar
del Plata, Buenos Aires, Argentina
Tel: (+54 223) 520 6422
Email: procelli@solimenosa.com.ar

Pesquera Deseado S.A.U.

Contact: Roberto Crespo Allegue
Address: M. Arias 3751 Floor 23,
(1423) C.A.B.A., Argentina
Tel: (+54 11) 4853 3910
Email: rcrespo@pesqueradeseado.com.ar

Pesquera San Isidro S.A.

Contact: Agustin Rocca
Address: Rawson 809, (9120) Puerto
Madryn, Chubut, Argentina
Tel: (+54 280) 445 2248
Email: arocca@gruposanisidro.com.ar

Pesqueria del Atlantico S.A.

Contact: Roberto Crespo Allegue
Address: M. Arias 3751 Floor 23,
(1423) C.A.B.A., Argentina
Tel: (+54 11) 4853 3910
Email: rcrespo@pesqueradeseado.com.ar

Thorpesca S.A.S.

Contact: Gustavo Adrian Servente
Address: Colombia 1525, (9120) Puerto
Madryn, Chubut, Argentina
Tel: (+54 280) 456 3322
Email: gservente@pesquera-achernar.com.ar

Wanchese Argentina S.R.L.

Contact: Pedro Ibar Böhnsdalen
Address: Olga Cossettini 363 Floor 3,
(1107) C.A.B.A., Argentina
Tel: (+54 223) 489 0814
Email: administracion@wanchese.com.ar

Pedro Moscuza e Hijos S.A.

Contact: Jose Marcelo Moscuza
Address: Ortiz de Zarate 2950, (7600) Mar
del Plata, Buenos Aires, Argentina
Tel: (+54 223) 4619 200
Email: lujan@moscuza.net

Pesquera Latitud 46 Grados Sur S.A.

Contact: Juan Manuel Redini
Address: Juan Carlos Cruz 120, Nucleo 4,
Floor 2nd, Of. 216, (1638) Vicente Lopez,
Buenos Aires, Argentina.
Tel: (+54 9 11) 5572 1655
Email: jredini@fao41.com

Pesquera Santa Cruz S.A.U.

Contact: Facundo Godoy
Address: Av. Mayor Pedro Lotufo 1079,
(9050) Puerto Deseado, Santa Cruz,
Argentina
Tel: (+54 297) 487 2441
Email: facundo.godoy@iberconsa.com

Red Chamber Argentina S.A.

Contact: Yu Shon Mou
Address: Nino Incorvay S/N, Parque
Industrial, (9120) Puerto Madryn, Chubut,
Argentina
Tel: (+54 280) 4575 008
Email: marcelo@redchamber.com.ar

Urbipez S.A.

Contact: Maria Lina Ramaci
Address: Magallanes 3136 Of. 1B,
(7600) Mar del Plata, Buenos Aires,
Argentina
Tel: (+54 9 223) 4279 195
Email: urbipezsa@outlook.com

Xeitosiño S.A.

Contact: Mariano Perez
Address: Rawson 1457 Floor 8 Of. C,
(7600) Mar del Plata, Buenos Aires,
Argentina
Tel: (+54 223) 421 4087
Email: mariano.perez@newsan.com.ar

CERTIFICATION ASSESSMENT BODY:**Organizacion Internacional Agropecuaria S.A. (OIA)**

Address: Av. Santa Fe 830, Acassuso (1641), Buenos Aires Prov., Argentina
Tel/Fax: (+54) 11 4793-4340
oia@oia.com.ar | www.oia.com.ar

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2 Glossary.

The following acronyms were used in the report:

ACAP	Agreement on the Conservation of Albatrosses and Petrels
ACDR	Announcement Comment Draft Report
AEWA	Agreement on the Conservation of African-Eurasian Migratory Waterbirds
AGN	<i>Auditoria General de la Nacion</i>
AIER	<i>Area Interjurisdiccional de Esfuerzo Pesquero Restringido</i>
ASI	Assurance Services International
AUCFZ	Argentina Uruguay Common Fishing Zone
AVPJM	<i>Area de Veda Permanente para la Proteccion de Juveniles de Merluza</i>
BMSY	Based on Maximum Sustainable Yield
BR	<i>Biomasa Reproductiva</i>
BRV	<i>Biomasa Reproductiva Virgen</i>
CA	Consequence Analysis
CAB	Conformity Assessment Bodies
CBA	Acceptable Biological Catch
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CE	Critically Endangered
CEDEPESCA	<i>Centro Desarrollo y Pesca Sustentable</i>
CENPAT	<i>Centro Nacional Patagonico</i>
CFP	<i>Consejo Federal Pesquero</i>
CITC	<i>Cuota Individual Transferible de Captura</i>
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CL	Cephalo-pereiopod length
CMP	<i>Captura Maxima Permissible</i>
CMS	Convention on the Conservation of Migratory Species of Wild Animals
CoC	Chain of Custody
COFEMA	<i>Consejo Federal de Medio Ambiente</i>
CH	Chondrichthyes
CPD	Catch per Day
CPUE	<i>Captura Por Unidad de Esfuerzo</i>
CR	Critically Endangered
CSA	Consequence Spatial Analysis
CTMFM	<i>Comision Tecnica Mixta del Frente Maritimo</i>
CZ	Confluence Zone
DGIMyPC	<i>Direccion Nacional de Interes Maritimos y Pesca Continental</i>

DNCyFP	<i>Dirección Nacional de Coordinación y Fiscalización Pesquera</i>
DPyGP	<i>Dirección de Planificación y Gestión de Pesquerías</i>
DUE	<i>Derechos Unicos de Extracción</i>
EEP	<i>Enfoque Ecosistémico de la Pesca</i>
EEZ	Exclusive Economic Zone
EN	Endangered
ENSO	El Niño-Southern Oscillation
ETP	Endangered, Threatened or Protected
FAO	Food and Agriculture Organization
FCN-UNPSJB	<i>Facultad de Ciencias Naturales de la Universidad Nacional de la Patagonia San Juan Bosco</i>
FCP	Fishery Certification Process
FIP	Fishery Improvement Projects
FMSY	Fishing Mortality associated to the Maximum Sustainable Yield
FO	Frequency of Occurrence
FO.NA.PE	<i>Fondo Nacional Pesquero</i>
GAT	<i>Grupo Asesor Técnico</i>
GPS	Global Positioning System
GSI	<i>Golfo San Jorge</i>
HCRs	Harvest Control Rules
IFOP	<i>Instituto de Fomento Pesquero</i>
INIDEP	<i>Instituto Nacional de Investigación y Desarrollo Pesquero</i>
IPI	Inseparable or practicably inseparable
IRCA	<i>Registro Internacional de Auditores Certificados</i>
ISO	International Organization for Standardization
ISSR	Inter Simple Sequence Repeat
IT	Indicator Taxes
ITQ	Individual Transferable Quotas
IUCN	International Union for Conservation of Nature
IUU	Illegal, Unreported and Unregulated
LBRP	Limit Biological Reference Point
LC	Least Concern
LEP	Lifetime Extension Program
LFP	Ley Federal de Pesca
LTL	Low Trophic Level
MAGyP	<i>Ministerio de Agricultura, Ganadería y Pesca</i>
MayDS	<i>Ministerio de Ambiente y Desarrollo Sostenible</i>
MM	Marine Mammals

MRECIyC	<i>Ministerio de Relaciones Exteriores Comercio Internacional y Culto</i>
MSC	Marine Stewardship Council
MSY	Maximum Sustainable Yield
NGO	Non-Governmental Organization
NPFS	Northern Patagonian Frontal System
NPOA	National Plan of Action
OBO	On-board Observers
OIA	<i>Organizacion Internacional Agropecuaria</i>
PAN	<i>Plan de Accion Nacional</i>
PCDR	Public Comment Draft Report
PCR	Public Comment Report
PI	Performance Indicator
PNA	<i>Prefectura Naval Argentina</i>
POAB	Private On-board Observer Program
PRI	Point of Recruitment Impairment
PROME	<i>Proyecto de Mejoramiento</i>
PSA	Productivity Susceptibility analysis
RBF	Risk Based Framework
SAGyP	<i>Secretaria de Agricultura, Ganaderia y Pesca</i>
SAyDS	<i>Secretaria de Ambiente y Desarrollo Sustentable</i>
SB	Seabirds
SBFS	Shelf Break Frontal System
SCA	Statistical Catch at Age
SENASA	<i>Servicio Nacional de Sanidad y Calidad Agroalimentaria</i>
SG	<i>Scoring Guidance</i>
SI	Score Issue
SICAP	<i>Sistema Integrado de Control de Actividades Pesqueras</i>
SIFIPA	<i>Sistema Federal de Informacion de Pesca y Acuicultura</i>
SIGEN	<i>Sindicatura General de la Nacion</i>
SNP	Single Nucleotide Polymorphism
SPCh	<i>Secretaria de Pesca de la Provincia de Chubut</i>
SPFS	Southern Patagonian Frontal System
SSPyA	<i>Subsecretaria de Pesca y Acuicultura</i>
TAC	Total Allowable Catch
TRP	Target Reference Point
UoA	Unit(s) of Assessment
UoC	Unit(s) of Certification

VMEs	Vulnerable Marine Ecosystems
VMS	Vessel monitoring system
VPA	Virtual Population Analysis
VU	Vulnerable
ZEPR	<i>Zona de Esfuerzo Pesquero Restringido</i>

3 Executive summary.

The fishing companies *Achernar S.A.S.*, *Agropez S.A.*, *Arbumasa S.A.*, *Argenova S.A.*, *Buena Proa S.A.*, *Cabo Virgenes S.A.*, *Catesur S.A.*, *Centomar S.A.*, *Conarpesa Continental Armadores de Pesca S.A.*, *Cooke Group* (conformed by: *Grinfin S.A.* and *Wanchese Argentina S.R.L.*), *Estrella Patagonica S.A.*, *Food Partners Patagonia S.A.*, *Iberconsa de Argentina S.A.*, *Luis Solimeno e Hijos S.A.*, *Pedro Moscuza e Hijos S.A.*, *Pesquera Deseado S.A.U.*, *Pesquera Latitud 46 Grados Sur S.A.*, *Pesquera Santa Cruz S.A.U.*, *Pesquera Veraz S.A.*, *Pesqueria del Atlantico S.A.*, *Red Chamber Argentina S.A.*, *San Isidro Group* (conformed by: *Arela S.A.*, *Greciamar S.A.*, *La Escalerona S.A.*, *Pesquera Olivos S.A.*, *Pesquera San Isidro S.A.* and *Riminimarr S.A.*), *Thorpesca S.A.S.*, *Urbipez Group* (conformed by: *Urbipez S.A.* and *Pelagic S.A.*), *Vieira Argentina S.A.* and *Xeitosiño S.A.* through CEDEPESCA contacted to *Organizacion Internacional Agropecuaria* (OIA) to conduct an independent certification process for the Argentine red shrimp (*Pleoticus muelleri*) offshore bottom trawl fishery in federal waters against the MSC Fisheries Certification Process. It is important to mention that the fishery was subject of Fishery Improvement Projects (FIPs) since April 2016. The FIP aims to attain a certifiable status for the fishery against the MSC Standard. Also, the Argentine red shrimp fishery conducted in provincial's waters of Chubut announced the full assessment process in March 2024. The Annex PB – Harmonisation of overlapping Units of Assessments normative must be applied in this UoA.

The fishery assessment on the MSC Fisheries Standard v2.01 is based on: Principle 1 considers the stock status of the entire stock; Principle 2 considers the environmental impact of the Unit of Assessment (UoA) which is being assessed and may need to consider the cumulative impacts of other overlapping fisheries; and Principle 3 considers the management of the entire target stock, the management of the UoA and the overarching policy framework that supports both P1 and P2 outcomes.

The proposed assessment team conducted a desk-based review of available information that is provided in the Client Document Checklist, previously pre-assessment report (2015) and other certified UoA that overlaps with this new UoA. Using this information, the team drafted scoring ranges and rationales for all the Performance Indicators (PIs) and provided a reference list. The team identified where there are information gaps that are relevant to scoring the PIs. For those PIs where limited information is available, the team should be more precautionary, and scorings were not higher than 60-79. Results of the desk-based review were incorporated in the Announcement Comment Draft Report (ACDR), including a summary of key issues for further investigation. The report granted to the client group the opportunity to understand the status of the fishery and the likely outcome of the initial process. During the fishery announcement period, no written submission using the MSC Template for Stakeholder Input into Fishery Assessments was received.

The site visit was held on 24-28 March 2025 as it was planned with the aim to collect information to support rationales and conduct RBF during stakeholder meetings. Information was collected through stakeholder interviews. During stakeholder meetings, no concerns was presented (see section **11.4 Stakeholder input**). As only information that was publicly available before or during the site visit is considered for scoring, the team agreed with some stakeholders that information must be shared up to 30 days after the site visit. For more information, see section **11.2.3 Evaluation techniques**. The team compiled and analysed all relevant information and score the fishery. Six PIs related with harvest control rules and tools; ETP species outcome; ETP species management strategy; ETP information; habitats outcome; and, compliance & enforcement, were scored below 80 level and the team raised a condition for each one to improve the performance to at least an 80 level within the duration of the certificate.

The team completed the scoring and OIA issues the Client and Peer Review Draft Report for the client group and selected peer reviewers to provide comments on 27 June 2025. In this stage, the peer reviewers used a template to provide their feedback on each performance indicator's score and rationale, the conclusions reached, and conditions stated. OIA had explicitly addressed issues raised by peer reviewers and incorporated appropriate changes into this report version. Some changes were reported by the client group, and the team addressed them in the relevant section. Also, the client provided an Action Plan for 6 preliminary conditions established. During the preparation of PCDR, the client group signed an agreement to incorporate the fishing eligible company *Cabo Virgenes S.A.* to the UoC.

The Public Comment Draft Report that included a draft determination recommending the fishery certification and responses to the peer reviewers' comment was available during at least 30 days from 10 December 2025 to 10 January 2026 to stakeholder's comments. Third parties had the opportunity to comment on any conditions and milestones that have been set against the fishery; as well as the proposed plan by the client group to meet the conditions. During the consultation period, only one written stakeholder submission was received. OIA responses to these comments are

provided in the section **11.3 Stakeholder input**. Also, the Peer Review College confirmed that both peer reviewers have stated they are satisfied with the Team's responses to the issues identified and have no further comments to add. Considering this feedback, the team prepared the Final Draft Report that includes the team's final determination of whether the fishery should be certified. During the preparation of the Final Draft Report, the client group signed a new agreement to incorporate the following fishing eligible companies: *Catesur S.A.*, *Centomar S.A.*, *Luis Solimeno e Hijos S.A.* and *Urbipez Group* to the UoC.

OIA allowed fifteen (15) UK working days for previously involved stakeholders to file a Notice of Objection during the Final Draft Report stage. No objections were received during the MSC Objections Process. Also, during this period, the client group signed a new agreement to incorporate the following fishing eligible companies: *Pesquera Latitud 46 Grados Sur S.A.* and *Thorpesca S.A.S.* to the UoC. OIA proceed to finalize the assessment of ARGENTINE RED SHRIMP (*Pleoticus muelleri*) OFFSHORE BOTTOM TRAWL FISHERY IN FEDERAL WATERS publishing the Public Certification Report and granting the certification.

Main strengths and weaknesses

The Argentine red shrimp fishery under assessment occurs in waters under the jurisdiction of the federal government of the Republic of Argentina and excludes waters under provincial jurisdiction. Mainly in the closure area for the protection of Argentine hake (*Area de Veda Permanente para la Proteccion de Juveniles de Merluza – AVPM*), located between parallels 42° and 48° S, from the provincial jurisdiction line (set up at 12 nm from the coast) to 60° W. The fishing season is conducted between March/April and October/November each year. The fishery carried out mainly by chilling and freezing vessels larger than 21 m length, exclusively dedicated to catch Argentine red shrimp. These represents more than 65% of the fishery landings and the UoC comprises most of the UoA that constitutes the genetic stock of the Argentine red shrimp in the Argentine Sea. In terms of the fishery management program, there exists an On-board Observers Program enforced by the INIDEP, which provides periodic information which allows for the dynamic opening and closure of the different fishing areas in AVPM, through reference limit points (CFP Resolution N° 7/2018, N° 9/2022 and N° 22/2022).

In terms of weaknesses, the most salient aspect to consider is the periodic evaluation of the biological reference limit points for the management of the Argentine red shrimp fishery, these being the CPUE limit value, limit catch of juvenile specimens, and mature and impregnated females. Even though, a sustainability level for Argentine red shrimp fishery would fluctuate around the 200,000 t (Moriendo Danovaro *et al.*, 2022b; Moriendo Danovaro & De la Garza, 2020), it does not have arguments that are robust enough to support such standard.

The main strengths related with Principle 2 components are: availability of bycatch information through a Private On-board Observer Program since 2017 and to have clearly management measures (CFP Resolution N° 7/2018).

However, the following aspects must be improved related to: the absence of specific and updated bycatch information, based on data collected by the Fishery Biological Information Assistants of the INIDEP (former observers); lack of identification at species level of some benthic organisms (*i.e.* tunicates, sponges and algae), need for indicators of the recovery of the ecosystem could be affected by trawling activities; to have information about indirect interactions with seabirds and marine mammals only during year 2022 and, lack of management strategy for secondary species.

Respecting to the Principle 3, the main strengths detected are related with the existence of a legal framework for the management of the Argentine red shrimp fishery, both at Federal and Provincial levels, in which the different administration measures are established for the management of the fishery in a sustainable manner. The regulatory system clearly describes the roles of the organizations and individuals involved in the management process and defines the general long-term objectives for fisheries governance. Also, the monitoring, control and surveillance (MCS) mechanism of the shrimp fishery is adequate to guarantee its management and allows the measures to be applied and complied with them. All UoC vessels must use the satellite tracking system and have a scientific on-board observer. Therefore, there is direct information related with the target species and the impacts on the accompanying fauna, especially on hake. Finally, the legal framework considers the research that INIDEP must develop on the fishery.

Moreover, the main weaknesses of Principle 3 are related to the established potential conditions. The fishery-specific management system does not have explicit objectives designed to achieve the results expressed in the MSC Principles 1 and 2; and the problems of compliance with the established management measures by the agents who participate in it.

Additionally, the management system could establish mechanisms to evaluate all parts of the fishery-specific management system and carry out a periodic external review process.

Therefore, OIA decides that the ARGENTINE RED SHRIMP (*Pleoticus muelleri*) OFFSHORE BOTTOM TRAWL FISHERY IN FEDERAL WATERS is certified by first time according to the MSC Principles and Criteria for Sustainable Fishery, due there are no PI scores falling below 60 neither Principles scores below 80.

4 Report details.

4.1 Authorship and peer review details

a. Team members

i. Proposed team leader

Eng. Pedro A. Landa – Fishery Team Leader and Traceability Expert

OIA has verified that Eng. Landa meets the fishery team member qualification and competency criteria specified in Annex PC1.2 of FCPv2.3, including MSC General Certification Requirements v2.7 mentioned in the Table 1:

- has a university degree in agricultural engineer;
- has over 5 years' experience in environmental management position;
- he understands MSC Fisheries Standard and relevant MSC Certification Process and Requirements, approving the MSC's Program Manager training course that includes new module versions (2020);
- he has passed a course on auditing based upon ISO 19011 recognized by Exemplar Global;
- he has further experience in MSC fishery assessment as technical support, including its participation as fishery team leader in the Argentine anchovy fishery certification process (2016-2022);

Furthermore, Eng. Landa has the qualifications and competencies required for serving as an expert on: fishery management and operations, current knowledge of the country, language and local fishery context, experience applying different types of interviewing and facilities techniques, and understanding of the CoC Standard and CoC Certification Requirements.

Eng. Landa has no conflicts of interest in relation to the Argentine red shrimp offshore trawling fishery.

ii. Proposed team members

MSc. Pedro De Carli - Fishery Team Member and Responsible for Principle 1

OIA has verified that MSc. De Carli meets the fishery team member qualification and competency criteria specified in Annex PC1.3 of FCPv2.3, in particular:

- has a university degree in biology and MSc. in Management and Conservation of Natural Resources in Sub-Antarctic Environments;
- has over 5 years' experience in the fisheries sector related to the tacks under his responsibility;
- he understands MSC Fisheries Standard and relevant MSC Certification Process and Requirements, and has passed the MSC Fishery Team Member training course;
- has the experience in applying different types of interviewing and facilitation techniques and the ability to effectively communicate with the client and other stakeholders.

Furthermore, MSc. De Carli has the qualifications and competencies required for serving as an expert on: fishery stock assessment, fish stock biology/ecology, fishery management and operations, current knowledge of the country, language and local fishery context, understanding of the CoC Standard and CoC Certification Requirements.

As the RBF will be used in assessing the fishery, Pedro De Carli has been fully trained in the use of the RBF.

MSc. De Carli has no conflicts of interest in relation to the Argentine red shrimp offshore fishery.

Eng. Denise Bore – Responsible for Principle 2

OIA has verified that Eng. Bore meets the fishery team member qualification and competency criteria specified in Annex PC1.3 of FCPv2.3, in particular:

- has a university degree (MSc.) in Environmental Management and Auditing;

-has over 3 years' experience in research and consultant tasks in several governmental (*i.e.* IFOP) and NGO (*i.e.* CEDEPESCA) entities;

-she understands MSC Fisheries Standard and relevant MSC Certification Process and Requirements, approving the MSC's fishery team member training course, including risk-based framework methodology (RBF) and new module version (Summary of Changes v2.2);

Furthermore, Eng. Bore has the qualifications and competencies required for serving as an expert on fishery management and operations, current knowledge of the country, language and local fishery context, and understanding of the CoC Standard and CoC Certification Requirements.

As the RBF will be used in assessing the fishery, Eng. Bore has been fully trained in the use of the RBF.

OIA confirms that Eng. Bore has no conflicts of interest in relation to the Argentine red shrimp offshore fishery.

Eng. Edith Saa Collantes – Responsible for Principle 3

OIA has verified that Edith Saa Collantes meets the fishery team member qualification and competency criteria specified in Annex PC1.3 of FCPv2.3, in particular:

-has a university degree in fisheries and has over 5 years' management experience in fishery management position;

-she understands the MSC Fisheries Standard and relevant MSC Certification Process and Requirements, approving the MSC's fishery team member training course that includes new module versions (Summary of Changes v2.2);

-has undertaken more than two MSC fishery assessment and surveillance visits as a team member in the last 5 years. Furthermore, she has the qualifications and competencies required for serving as an expert on fishery management and operations, current knowledge of the country, language and local fishery context, and understanding of Traceability.

Eng. Edith Saa Collantes has no conflicts of interest in relation to the Argentine red shrimp offshore fishery.

Eng. Carolina Medina Foucher – OIA Technical Support

OIA has verified that Eng. Medina Foucher meets the fishery team member qualification and competency criteria specified in Annex PC1.2 of FCPv2.3, including MSC General Certification Requirements v2.7 mentioned in Table 1:

-has a university degree in aquaculture and science marine;

-has over 10 years as MSC Program Manager for OIA;

-she has passed a course on auditing based upon ISO 19011 recognized by IRCA;

-she understands MSC Fisheries Standard and relevant MSC Certification Process and Requirements, approving the MSC's fishery team leader training course that includes new module versions (2020 version and Summary of Changes v2.2);

-has supported as technical support in more than 2 MSC fishery assessment and surveillance audits in the last 5 years that include the ability to apply knowledge of auditing techniques in the gathering of information, the scoring of the fishery and the rationales for the scores given.

-she has participated in more than 2 MSC surveillance visits as a team member in the last 5 years.

Furthermore, Eng. Medina Foucher has the qualification and competencies required for serving as a technical support expert on MSC Standard, current knowledge of the country, language and local fishery context, and understanding of the CoC Standard and CoC Certification Requirements.

Eng. Medina Foucher has no conflicts of interest in relation to the Argentine red shrimp offshore fishery.

Table 1. Authorship and assessment team

Role	Name	Area of expertise
Team leader	Eng. Pedro A. Landa	Traceability expert
Team members	MSc. Pedro De Carli	Principle 1 and RBF expert
	Eng. Denise Bore	Principle 2 and RBF expert
	Eng. Edith Saa Collantes	Principle 3 expert
	Eng. Carolina Medina Foucher	Traceability expert

Table 2. Peer reviewers

Peer reviewers	PhD. Mauricio Castrejon
	PhD. Virginia Polonio

4.2 Version details

The following fisheries program document versions were used for this assessment.

Table 3. Fisheries program document versions.

Document	Version number
MSC Fisheries Certification Process	Version 2.3
MSC Fisheries Standard	Version 2.01
Assessment tree	Default
MSC General Certification Requirements	Version 2.7
MSC Reporting Template	Version 1.3

5 Unit(s) of Assessment and Unit(s) of Certification and results overview.

5.1 Unit(s) of Assessment

The Fisheries Certification Process (FCP) defines a Unit of Assessment (UoA) as: the target stock (*i.e.* Argentine red shrimp – *Pleoticus muelleri*); the fishing gear type and if relevant vessel type (*i.e.* bottom trawl); and the fishing fleet, vessel(s) pursuing that stock (*i.e.* freezing ('*congeladores*') and chilling ('*fresqueros*') fleets). The terms “methods” and “practices” have been removed from the UoA and UoC clauses in the last updated versions of Fisheries Certification Process. Distinct fishing gear types are differentiated based on the configuration of the gear, where the configuration refers to the physical arrangement. Fishing gear is not differentiated based on differences in how gear is set or deployed.

Table 4. Unit of Assessment (UoA).

UoA	Description
Target stock	Argentine red shrimp (<i>Pleoticus muelleri</i>)
Geographical area	FAO Major Fishing Area 41, Southern (Subarea 41.3), Northern Patagonian (Division 41.3.1). Argentine Sea. Mainly in the location of the closure area for the protection of Argentine hake (AVPJM), between 42° and 48° S, from the provincial jurisdiction line (set up at 12 nm from the coast) to 60° W.
Fishing gear type(s) and, if relevant, vessel type(s)	Bottom trawl carried out by 218* chilling and freezing vessels, exclusively dedicated to catch Argentine red shrimp, known as outriggers trawlers or shrimpers. These vessels operate simultaneously with two bottom trawling nets: one by each outrigger with a 45-50 mm net stretched mesh and a vertical opening around 1.5 m. *This number is an average of fishing vessels operating in national jurisdiction from last 7 fishing seasons. In case that this number significantly increase, OIA will apply the scope extension requirements.
Client group	Achernar S.A.S., Agropez S.A., Arbumasa S.A., Argenova S.A., Buena Proa S.A., Cabo Virgenes S.A., Catesur S.A., Centomar S.A., Conarpesa Continental Armadores de Pesca S.A., Cooke Group (conformed by: Grifin S.A. and Wanchese Argentina S.R.L.), Estrella Patagonica S.A., Food Partners Patagonia S.A., Iberconsa de Argentina S.A., Luis Solimeno e Hijos S.A., Pedro Moscuza e Hijos S.A., Pesquera Deseado S.A.U., Pesquera Latitud 46 Grados Sur S.A., Pesquera Santa Cruz S.A.U., Pesquera Veraz S.A., Pesqueria del Atlantico S.A., Red Chamber Argentina S.A., San Isidro Group (conformed by: Arela S.A., Greciamar S.A., La Escalerona S.A., Pesquera Olivos S.A., Pesquera San Isidro S.A. and Rimimarr S.A.), Thorpesca S.A.S., Urbipez Group (conformed by: Urbipez S.A. and Pelagic S.A.), Vieira Argentina S.A and Xeitosiño S.A.
Other eligible fishers	25 De Mayo S.R.L.; Aires Marinos S.A.; Alamar S.R.L.; Alleloccic S.A.; Alpescas S.A.; Amatista S.A.; Ancofrig S.A.; Ap Holding S.A.; Aquellos Tres S.A.; Aresit S.A.; Azulata S.A.; Bahia De Los Estados S.A.; Barrancas Blancas S.R.L.; Canal de Beagle S.R.L.; Congeladores Patagonicos S.A.; Costa Chubut S.A.; Crustaceos Patagonicos S.A.; Daulias S.A.; Deseado Fish S.A.; Direct Source Seafood S.A.; Don Francisco S.A.; Empresa Maritima y Pesquera Conara S.A.; Enrique Fernandez; Es Posible S.R.L.; Esfida S.A.; Frigorifico Del Sudeste; Hemdora S.A.; Isla Escondida S.R.L.; Jurado Redondo Juan; Lineaerre S.A.; Luez S.R.L.; Maritime Products International; Mariscal Horacio; Melimar S.A.; Newsan; Nuevo Golfo Del Sur S.A.; Oceanic Seafood; Orion S.R.L.; Ortiz Jurado Jose; Ottulich Juan Carlos; Panapesca USA LLC; Patagonia & Co S.A.; Pesquera Anave S.A.; Pesquera Chiarmar S.A.; Pesquera Gianfranco S.A.; Pesquera Hemos Triunfado S.A.; Pesquera Mayorazgo S.A.; Pesquera San Fernando S.A.; Pesquera San Salvador S.A.; Pesquera Santa Elena S.A. Industrial y Comercial; Pesquera Siempre Gaucho S.A.; Pesquera Sulle Onde S.A.; Piscal S.A.; Proa al Sur S.R.L.; Ritorno, Sallustio y Ciccioiti S.A.; Semaloma S.A.; Summer Blue S.A.; Talita Kum S.R.L.; Tinopesca S.A.; Tozumar S.A.; Twelling S.A.; Union Pesquera Patagonia S.A.; Valdore S.A.; Venus Pesquera S.R.L.; Vuoso Hermanos S.R.L.; and, Yiasra S.A.S.

5.2 Unit(s) of Certification

No changes to the proposed Unit of Certification are identified in this stage.

Only catches made by the client group are allowed to be sold as MSC-certified, while the remaining companies cited in the UoA are eligible to use the certificate and sell the product as MSC-certified if they sign an agreement previously (“Certificate Sharing Agreement”).

Interested companies are invited in all times to share the certificate, signing an agreement with client group. OIA requested to the client group to:

-prepare a statement of their understanding and willingness for reasonable certificate sharing arrangements. This statement is published in the MSC Fishery Announcement.

-inform other eligible fishers and/or other entities of the public statement and of the opportunity to share the certificate during relevant interactions with the eligible fishers and other entities as is practicable.

For more understanding, consult the MSC Fisheries Certification Process sections 7.5.10 and 7.27.

Table 5. Unit of Certification (UoC).

UoC	Description
Target stock	Argentine red shrimp (<i>Pleoticus muelleri</i>)
Geographical area	FAO Major Fishing Area 41, Southern (Subarea 41.3), Northern Patagonian (Division 41.3.1). Argentine Sea. Mainly in the location of the closure area for the protection of Argentine hake (AVPJM), between 42° and 48° S, from the provincial jurisdiction line (set up at 12 nm from the coast) to 60° W.
Fishing gear type(s) and, if relevant, vessel type(s)	Bottom trawl carried out by chilling and freezing vessels, exclusively dedicated to catch Argentine red shrimp, known as outriggers trawlers or shrimpers, linked with the client group. The vessel list is provided below.
Client group	Achernar S.A.S., Agropez S.A., Arbumasa S.A., Argenova S.A., Buena Proa S.A., Cabo Virgenes S.A., Catesur S.A., Centomar S.A., Conarpesa Continental Armadores de Pesca S.A., Cooke Group (conformed by: Grifin S.A. and Wanchese Argentina S.R.L.), Estrella Patagonica S.A., Food Partners Patagonia S.A., Iberconsa de Argentina S.A., Luis Solimeno e Hijos S.A., Pedro Moscuza e Hijos S.A., Pesquera Deseado S.A.U., Pesquera Latitud 46 Grados Sur S.A., Pesquera Santa Cruz S.A.U., Pesquera Veraz S.A., Pesqueria del Atlantico S.A., Red Chamber Argentina S.A., San Isidro Group (conformed by: Arela S.A., Greciamar S.A., La Escalerona S.A., Pesquera Olivos S.A., Pesquera San Isidro S.A. and Riminiarr S.A.), Thorpesca S.A.S, Urbipez Group (Urbipez S.A. and Pelagic S.A.), Vieira Argentina S.A and Xeitosiño S.A. Only the following vessel-list is candidate to provide MSC-certified products to the client group. Note: Vessels that are not listed, they are out the UoC.

MMSI	National registration N°	Vessel *freezing vessel ++chilling vessel	Ownership	Agreement with	Length (m)
701000835	0181	ALTALENA++	RED CHAMBER ARGENTINA S.A.	-	55.81
701007044	2454	ALVAREZ ENTRENA I*	CONARPESA	-	40.35
701006094	2465	ALVAREZ ENTRENA II*	CONARPESA	-	40.35
701000960	2379	ALVAREZ ENTRENA III*	CONARPESA	-	31.60
701000895	2279	ALVAREZ ENTRENA V*	AGROPEZ S.A.	-	30.50
701006750	3047	ALVAREZ ENTRENA VI*	CONARPESA	-	31.60
701160000	3282	ALVAREZ ENTRENA VII*	AGROPEZ S.A.	-	31.65
701159000	3277	AMERICANO++	PESQUERA VERAZ S.A.	-	24.00
701006314	2701	ANAVE++	PESQUERA ANAVE S.A.	FOOD PARTNERS PATAGONIA S.A.	18.00
701156000	3278	ANITA*	LUIS SOLIMENO E HIJOS S.A.	-	39.22
701000665	0877	ANTONINO++	PESQUERA SIEMPRE GAUCHO S.A.	ACHERNAR S.A.S.	27.60
701000932	1429	ANTONIO ALVAREZ*	CONARPESA	-	36.60
701006468	2812	API VI*	IBERCONSA DE ARGENTINA S.A.	-	36.35
701001048	3188	API VIII*	IBERCONSA DE ARGENTINA S.A.	-	36.39
701001047	3191	API X*	IBERCONSA DE ARGENTINA S.A.	-	36.39
701001154	3213	API XII*	PESQUERA SANTA CRUZ S.A.U.	-	35.94
701006074	0213	ARBUMASA XIV*	ARBUMASA S.A.	-	39.80
701000607	0218	ARBUMASA XIX*	ARBUMASA S.A.	-	39.80
701000708	0214	ARBUMASA XV*	ARBUMASA S.A.	-	36.40
701000662	0215	ARBUMASA XVI*	ARBUMASA S.A.	-	39.80
701000626	0216	ARBUMASA XVII*	ARBUMASA S.A.	-	39.80
701006034	0217	ARBUMASA XVIII*	ARBUMASA S.A.	-	39.80
701000553	2265	ARESIT*	ARESIT S.A.	PESQUERA DESEADO S.A.U.	36.26

701000686	2180	ARGENOVA I*	ARGENOVA S.A.	-	35.00
701000546	2177	ARGENOVA II*	ARGENOVA S.A.	-	38.50
701000550	2156	ARGENOVA III*	ARGENOVA S.A.	-	36.50
701000549	2157	ARGENOVA IV*	ARGENOVA S.A.	-	36.26
701000949	2328	ARGENOVA IX*	ARGENOVA S.A.	-	32.50
701000687	2179	ARGENOVA VI*	ARGENOVA S.A.	-	35.00
701000950	2329	ARGENOVA X*	ARGENOVA S.A.	-	32.50
701094000	2714	ARGENOVA XXII*	ARGENOVA S.A.	-	37.70
701006377	2713	ARGENOVA XXIII*	ARGENOVA S.A.	-	37.19
701096000	2752	ARGENOVA XXIV*	ARGENOVA S.A.	-	40.00
701006471	2811	ARGENOVA XXV*	ARGENOVA S.A.	-	35.60
701100000	2849	ARGENOVA XXVI*	ARGENOVA S.A.	-	39.00
701000509	0142	ARGENTINO++	PESQUERA VERAZ S.A.	-	33.77
701007039	0540	ARRUFO*	LUIS SOLIMENO E HIJOS S.A.	-	39.16
701130000	3162	ATLANTICO 1*	PESQUERIA DEL ATLANTICO S.A.	-	39.95
701006040	0145	ATREVIDO++	PESQUERA VERAZ S.A.	-	32.50
701006005	0665	BAHIA DESVELOs*	PESQUERA SANTA CRUZ S.A.U.	-	37.05
701001060	3178	BARLOVENTO++	LA ESCALERONA S.A.	LA ESCALERONA S.A. GRECIAMAR S.A.	20.90
701000836	1398	BELVEDERE++	RITORNO, SALLUSTIO Y CICCIOOTTI S.A.	CATESUR S.A.	26.50
701006698	2994	BOGAVANTE SEGUNDO*	IBERCONSA DE ARGENTINA S.A.	-	37.45
701006084	1095	BORRASCA*	LUIS SOLIMENO E HIJO S.A.	-	39.16
701007027	1475	BUENA PESCA*	PEDRO MOSCUZZA E HIJOS S.A.	-	39.81
701000935	0024	CABO VIRGENES++	ALPESCA S.A.	RED CHAMBER ARGENTINA S.A.	42.00
701001132	3198	CAMILO S++	MARISCAL HORACIO	CABO VIRGENES S.A.	20.00
701000801	0407	CANAL DE BEAGLE++	CANAL DE BEAGLE S.R.L.	CATESUR S.A.	25.00
701001215	3226	CARLOS LUIS++	TWELLING S.A.	CABO VIRGENES S.A.	21.00
701019000	0482	CENTAUR0 2000++	BUENA PROA S.A.	-	35.50
701000753	1519	CIUDAD HUELVA++	CONARPESA	-	27.45
701000785	0506	CODEPECA III*	PESQUERA OLIVOS S.A.	RIMINIMARR S.A.	36.81
701000764	1012	CODEPECA IV*	RIMINIMARR S.A.	-	36.85
701000666	0200	CONARPESA I*	CONARPESA	-	50.42
701000820	0645	CORAJE++	AGROPEZ S.A.	-	25.28
701000745	1185	CRISTO REDENTOR++	FOOD PARTNERS PATAGONIA S.A.	-	31.00
701001147	3209	DESTINY*	WANCHESE ARGENTINA S.R.L.	-	38.52
701000572	2416	DIEGO FERNANDO++	DON FRANCISCO S.A.	AGROPEZ S.A.	16.00
701000958	0029	DON ANTONIO++	LA ESCALERONA S.A.	LA ESCALERONA S.A. GRECIAMAR S.A.	27.80
701006603	2921	DON BOCHA++	25 DE MAYO S.R.L.	ACHERNAR S.A.S.	19.00
701006640	2955	DON FRANCO++	PESQUERA SULLE ONDE S.A.	RED CHAMBER ARGENTINA S.A.	21.00
701030000	0071	DON GAETANO++	LINEAERRE S.A.	IBERCONSA DE ARGENTINA S.A.	29.00
701000585	2241	DON JOSE DI BONA++	PROA AL SUR S.R.L.	ESTRELLA PATAGONICA	21.00
701164000	3300	DON JUAN ALVAREZ*	CONARPESA	-	38.52
701000938	0748	DON MIGUEL I++	PESQUERA SIEMPRE GAUCHO S.A.	ACHERNAR S.A.S.	24.08
701000818	1733	DON SANTIAGO++	DAULIAS S.A.	BUENA PROA S.A.	27.60
701000822	0539	DON VICENTE VUOSO++	AGROPEZ S.A.	-	21.00
701000701	0512	DOÑA ALFIA++	COSTA CHUBUT S.A.	RED CHAMBER ARGENTINA S.A.	20.00
701000897	2360	ENRIQUE F++	ENRIQUE FERNANDEZ	CABO VIRGENES S.A.	19.90
701079000	2069	ENTRENA I*	THORPESCA S.A.S.	-	34.04
701078000	2070	ENTRENA II*	THORPESCA S.A.S.	-	34.04
701001018	3164	ESPARTANO++	CABO VIRGENES S.A.	-	21.00
701000953	2314	EURO II++	COSTA CHUBUT S.A.	RED CHAMBER ARGENTINA S.A.	20.00
701001036	3190	FEDERICO C*	PESQUERA VERAZ S.A.	-	37.68
701000882	0581	FELIX AUGUSTO*	CONARPESA	-	27.80
701000658	0013	FERNANDO ALVAREZ*	CONARPESA	-	36.60
701000853	1531	FIDES FE I++	CRUSTACEOS PATAGONICOS S.A.	RED CHAMBER ARGENTINA S.A.	20.00
701000625	1446	FIESTA++	CRUSTACEOS PATAGONICOS S.A.	RED CHAMBER ARGENTINA S.A.	18.80
701007038	0495	FRANCA++	PESQUERA SAN SALVADOR S.A.	CABO VIRGENES S.A.	28.28
701000578	1458	FRANCO++	TINOPEsCA S.A.	CABO VIRGENES S.A.	31.00
701006687	2984	FRANCO JOSE++	PESQUERA GIANFRANCO S.A.	IBERCONSA DE ARGENTINA S.A. ACHERNAR S.A.S. FOOD PARTNERS PATAGONIA S.A.	21.00

701000571	0362	GOLFO SAN MATIAS++	AGROPEZ S.A.	-	22.92
701126000	3137	GRACIELA I++	PEDRO MOSCUZZA E HIJOS S.A.	-	47.00
701000816	0554	HUAFENG 815++	PESQUERA SAN SALVADOR S.A.	CABO VIRGENES S.A.	25.28
701000621	1471	HUAFENG 821++	MELIMAR S.A.	ACHERNAR S.A.S.	26.00
701001194	3212	HUAFENG 827++	PESQUERA CHIARMAR S.A.	ARBUMASA S.A.	24.10
701147000	3215	HUAFENG 828++	PESQUERA CHIARMAR S.A.	ARBUMASA S.A.	24.10
701152000	3241	HUAFENG 881++	PESQUERA CHIARMAR S.A.	ARBUMASA S.A.	24.10
701150000	3238	HUAFENG 882++	PESQUERA CHIARMAR S.A.	ARBUMASA S.A.	24.10
701000537	1423	IGLU++	FOOD PARTNERS PATAGONIA S.A.	-	32.75
701168000	3325	J. BARREIRO++	AGROPEZ S.A.	-	21.00
701118000	3071	JOSE AMERICO*	PEDRO MOSCUZZA E HIJOS S.A.	-	39.68
701001255	3231	JOSE LUCIANO++	PELAGIC S.A.	-	27.00
701127000	3138	JOSE MARCELO++	PEDRO MOSCUZZA E HIJOS S.A.	-	47.00
701006059	0619	JUAN ALVAREZ*	PESQUERA SAN ISIDRO S.A.	-	36.60
701000516	0667	JUEVES SANTO*	PESQUERA SANTA CRUZ S.A.U.	-	39.50
701000533	0406	JUPITER II++	VENUS PESQUERA S.R.L.	CATESUR S.A.	29.00
701162000	3292	LEONILDA++	UNION PESQUERA PATAGONIA S.A.	PESQUERA VERAZ S.A.	20.00
701000899	2138	LOBO++	VALDORE S.A.	LA ESCALERONA S.A. GRECIAMAR S.A.	21.00
701007107	3121	LUCA SANTINO++	CENTOMAR S.A.	-	26.31
701070000	0623	LUCIA LUISA++	VUOSO HERMANOS S.R.L.	LA ESCALERONA S.A. GRECIAMAR S.A.	27.90
701151000	3244	LUIGI*	LUIS SOLIMENO E HIJOS S.A.	-	39.22
701000706	1556	MADRE DIVINA++	LA ESCALERONA S.A.	LA ESCALERONA S.A. GRECIAMAR S.A.	26.35
701006804	3101	MADRE MARIA++	JURADO REDONDO JUAN	IBERCONSA DE ARGENTINA S.A. FOOD PARTNERS PATAGONIA S.A.	20.00
701000558	2325	MAGDALENA*	PESQUERA SANTA ELENA S.A. INDUSTRIAL Y COMERCIAL	IBERCONSA DE ARGENTINA S.A.	32.70
701000652	0208	MAR AUSTRAL I*	PESQUERA DESEADO S.A.U.	-	37.60
701119000	3118	MAR CORAL*	RIMINIMARR S.A.	PESQUERA SAN ISIDRO S.A.	35.53
701007022	0548	MAR DE ORO++	VALDORE S.A.	LA ESCALERONA S.A. GRECIAMAR S.A.	28.20
701006068	0487	MAR DEL CHUBUT++	LINEAERRE S.A.	IBERCONSA DE ARGENTINA S.A.	25.50
701000830	0925	MAR ESMERALDA*	CABO VIRGENES S.A.	-	53.35
701108000	0260	MAR MARIA*	PESQUERA SANTA CRUZ S.A.U.	-	37.80
701000649	0210	MARA I*	ESTRELLA PATAGONICA S.A.	-	37.26
701117000	3074	MARIA ALEJANDRA 1*	XEITOSIÑO S.A.	-	39.20
701000886	2634	MARIA DEL VALLE++	AMATISTA S.A.	ACHERNAR S.A.S.	16.00
701006083	1173	MARIA EUGENIA*	PEDRO MOSCUZZA E HIJOS S.A.	-	53.75
701000645	1174	MARIA LILIANA*	PEDRO MOSCUZZA E HIJOS S.A.	-	54.00
701007036	0436	MARIA RITA++	LUEZ S.R.L.	IBERCONSA DE ARGENTINA S.A.	30.89
701000736	1002	MARIANELA++	PESQUERA SIEMPRE GAUCHO S.A.	ACHERNAR S.A.S.	23.50
701000583	0318	MERCEA C++	ALLELOCCIC S.A.	IBERCONSA DE ARGENTINA S.A.	30.00
701001059	3179	MERLUAN++	GRECIAMAR S.A.	LA ESCALERONA S.A. GRECIAMAR S.A.	21.00
701000749	1089	MESSINA I++	GRINFIN S.A.	-	27.29
701000619	1508	MEVIMAR*	RIMINIMARR S.A.	-	37.45
701000515	0666	MIERCOLES SANTO*	PESQUERA SANTA CRUZ S.A.U.	-	38.50
701006727	3022	MINCHOS OCTAVO*	IBERCONSA DE ARGENTINA S.A.	-	39.30
701041000	0370	MIRIAM*	PESQUERIA DEL ATLANTICO S.A.	-	36.35
701097000	2771	MYRDOMA F*	ARELA S.A.	-	35.76
701142000	3171	NINA*	PEDRO MOSCUZZA E HIJOS S.A.	-	44.00
701001121	3194	NIÑO JESUS DE PRAGA++	RITORNO, SALLUSTIO Y CICCIOOTTI S.A.	CATESUR S.A.	27.74
701006502	2854	NONO PASCUAL++	CANAL DE BEAGLE S.R.L.	CATESUR S.A.	25.20
701006137	2637	NUEVA NEPTUNIA I++	ORION S.R.L.	ACHERNAR S.A.S.	20.00
701001306	3250	NUEVO ANAVE++	PESQUERA HEMOS TRIUNFADO S.A.	ESTRELLA PATAGONICA S.A.	21.00
701141000	3152	NUEVO QUEQUEN++	PISCAL S.A.	AGROPEZ S.A.	21.00
701000774	1449	NUEVO VIENTO++	ALLELOCCIC S.A.	AGROPEZ S.A.	21.00
701129000	3139	PADRINO++	DESEADO FISH S.A.	FOOD PARTNERS PATAGONIA S.A.	21.00
701000539	0250	PAKU*	LUIS SOLIMENO E HIJOS S.A.	-	36.12
701000803	0284	PATAGONIA++	FOOD PARTNERS PATAGONIA S.A.	-	30.95

701149000	5526	PATAGONIA QUEEN*	RED CHAMBER ARGENTINA S.A.	-	43.00
701000562	2312	PEVEGASA QUINTO*	PESQUERA SANTA CRUZ S.A.U.	-	38.65
701006405	2735	PIONEROS++	FOOD PARTNERS PATAGONIA S.A.	-	35.97
701000787	0072	PROMARSA I*	ALPESCA S.A.	RED CHAMBER ARGENTINA S.A.	44.07
701000881	2096	PROMARSA III*	AP HOLDING S.A.	RED CHAMBER ARGENTINA S.A.	37.60
701006757	3060	PUNTA PARDELAS++	ANCOFRIG S.A.	ESTRELLA PATAGONICA S.A.	20.00
701000845	0580	QUEQUEN SALADO++	PISCAL S.A.	AGROPEZ S.A.	17.00
701015000	1401	RAFFAELA++	AIRES MARINOS S.A.	IBERCONSA DE ARGENTINA S.A.	26.00
701006300	2703	RASMUS EFFERSON*	LUIS SOLIMENO E HIJOS S.A.	-	40.00
701165000	3323	S. TENORIO++	AGROPEZ S.A.	-	21.00
701006409	2755	SALVADOR R++	URBIPEZ S.A.	-	25.70
701000731	1022	SAN CAYETANO I++	PATAGONIA & CO S.A.	AGROPEZ S.A.	27.01
701006134	2615	SANTA MARIA MADRE++	ORTIZ JURADO JOSE	ESTRELLA PATAGONICA S.A.	21.00
701000925	0505	SERMILIK*	RIMINIMARR S.A.	-	34.05
701006035	1567	SFIDA++	ESFIDA S.A.	BUENA PROA S.A.	27.00
701006215	2687	SIEMPRE DON CONRADO++	AMATISTA S.A.	ACHERNAR S.A.S.	19.00
701000588	2257	SIEMPRE DON JOSE MOSCUZZA*	PEDRO MOSCUZZA E HIJOS S.A.	-	39.40
701006197	2654	SIEMPRE DON VICENTE++	PESQUERA HEMOS TRIUNFADO S.A.	IBERCONSA DE ARGENTINA S.A. PESQUERA VERAZ S.A.	19.00
701001074	3173	SIEMPRE MARIA ELENA++	AQUELLOS TRES S.A.	FOOD PARTNERS PATAGONIA S.A.	21.00
701006055	0494	SIEMPRE SANTA ROSA++	AGROPEZ S.A.	-	25.51
701006282	2679	SOFIA B++	BARRANCAS BLANCAS S.R.L.	CABO VIRGENES S.A.	20.00
701161000	2565	SOTAVENTO++	LA ESCALERONA S.A.	LA ESCALERONA S.A. GRECIAMAR S.A.	21.00
701006058	0618	SUEMAR*	PESQUERA SAN ISIDRO S.A.	-	36.60
701000696	2233	TABEIRON*	VIEIRA ARGENTINA S.A.	-	34.00
701006086	2323	TABEIRON DOS*	PESQUERIA DEL ATLANTICO S.A.	-	33.00
701000728	1219	TOZUDO++	TOZUMAR S.A.	IBERCONSA DE ARGENTINA S.A.	24.00
701006576	2904	TRABAJAMOS++	DESEADO FISH S.A.	IBERCONSA DE ARGENTINA S.A. FOOD PARTNERS PATAGONIA S.A.	20.00
701006484	2821	TRITON I++	ISLA ESCONDIDA S.R.L.	FOOD PARTNERS PATAGONIA S.A.	20.00
701006164	2614	VALERIA ALEJANDRA++	AIRES MARINOS S.A.	FOOD PARTNERS PATAGONIA S.A.	17.00
701000805	0211	VALIENTE I*	ESTRELLA PATAGONICA S.A.	-	34.20
701000814	0212	VALIENTE II*	ESTRELLA PATAGONICA S.A.	-	34.20
701006127	2532	VAMOS A PROBAR I++	TALITA KUM S.R.L.	FOOD PARTNERS PATAGONIA S.A.	18.00
701000869	0556	VICTORIA II++	PESQUERA VERAZ S.A.	-	27.40
701000587	2246	VICTORIA P*	IBERCONSA DE ARGENTINA S.A.	-	36.15
701000800	0240	VIEIRASA DIECISEIS*	VIEIRA ARGENTINA S.A.	-	39.00
701006060	0179	VIEIRASA QUINCE*	VIEIRA ARGENTINA S.A.	-	40.00
701006001	0668	VIERNES SANTO++	HEMDORA S.A.	CABO VIRGENES S.A.	29.19
701000651	0248	VILLARINO II*	PESQUERA LATITUD 46 GRADOS SUR S.A.	-	35.30
701000720	0260	VILLARINO III*	PESQUERA LATITUD 46 GRADOS SUR S.A.	-	30.60
701006426	2767	VIRGEN DEL MILAGRO++	UNION PESQUERA PATAGONIA S.A.	PESQUERA VERAZ S.A.	21.00
701006071	0403	XEITOSIÑO*	XEITOSIÑO S.A.	-	51.72
701000831	0498	YENU*	RIMINIMARR S.A.	-	37.80

6 Confirmation of scope.

OIA states that the fishery entering in assessment meets the scope requirements and labour eligibility requirements in the MSC Fisheries Standard and MSC Fisheries Certification Process, according to the following aspects declared by the client in the document 'MSC Scope Declaration Template'.

- the fishery is eligible to certification through taxa of target species assessed under Principle 1 and does not use poisons or explosives. Also, the target species is a native wild crustacean, and the fishery is not based on any introduced based species or enhancement activity.

- there are no inseparable or practicably inseparable catches involved in the fishery under assessment.

- the fishery is not conducted under a controversial unilateral exemption to an international agreement.

- OIA confirms that the certificate holders comply with the MSC's labour policy according the MSC Labour Eligibility Requirements.

- the fishery does not include any vessel that has been implicated in a conviction for a shark finning violation in the last 2 years.

- the fishery has a mechanism for resolving disputes.

7 Overview of the fishery.

The Argentine red shrimp (*Pleoticus muelleri*) is a coastal neritic species associated with demersal-benthic habitats and temperate-cold waters, in depth between 3 to 120 m. It has a short life cycle and a variable growth rate depending on the area distribution and season (De la Garza *et al.*, 2017).

It is distributed between Rio de Janeiro, Brazil (23°00' S) and Santa Cruz, Argentina (50°00' S). The species sustains several small-scale fisheries along its geographic distribution, in Bahía Blanca in Argentina and in Punta del Diablo in Uruguay (Gongora *et al.*, 2020). However, it is only in the Patagonian area where a large-scale industrial fishery takes place.

The Argentine red shrimp fishery began in the early 1950s (De la Garza *et al.*, 2017). The fishery changed from artisanal to industrial when large concentrations of Argentine red shrimp were discovered in the San Jorge Gulf. Between 1950 and 1980, mean landings were 690 t per year, with maximum annual landings of 2,500 t. As of 1980, freezing trawlers entered the fishery in San Jorge Gulf, during the 1980s, Argentine red shrimp landings increased up to 22,000 t (mean landings of 9,980 t). In the 1990s, special fishing vessels targeting Argentine red shrimp entered the fishery.

Considering changes in regulations and because of extensions in the location of high-yield concentrations, fishing areas have continued to evolve. In particular, the San Jorge Gulf is closed to fishing as of 2017 and fishing areas in the Patagonian region have extended to 60° W.

Argentine red shrimp stock has a wide distribution in the Argentine Sea and is being fished both in waters under provincial jurisdiction and under federal jurisdiction, the fishery under assessment takes place in waters wholly under the jurisdiction of the federal government of Argentina and excludes water under provincial jurisdiction. Mainly in the location of the closure area for the protection of Argentine hake (AVPJM), between 42° and 48° S. The fishery consists of chilling and freezing vessels exclusively dedicated to catch Argentine red shrimp.

In the mid-1980s, the first regulations on fishery management of Argentine red shrimp were issued, with the purpose of preventing shrimp overfishing. Simultaneously, the first closed area aimed to protect the growth of juvenile Argentine red shrimps was put into effect in the area known as Bajo de Mazarredo, located south of the San Jorge Gulf (Boschi, 1989).

Fishery management relies on research campaigns that are conducted thrice a year by the INIDEP. These aims at (i) assessing the status of the reproduction process and the recruitment process; (ii) estimating abundance and biomass; and (iii) calculating length distributions, among other research objectives. In addition, real-time monitoring is provided by Chubut and INIDEP's On-board Observers Programs, which allows for the dynamic opening and closure of the different fishing areas in which the Argentine Sea is divided for statistical and management purposes. Currently, fishery management measures at the federal level are to be found in the CFP Resolution N° 7/2018, modified by means of the CFP Resolution N° 9/2022.

The AVPJM was created by the CFP Resolutions N° 26/2009 and N° 9/2014. The AVPJM occurs within the following geographical points: between parallels 42° and 48° S, from the provincial jurisdiction line (set up at 12 nm from the coast) to 60° W. Usually, fishing activities starts around March-April and extends up to October-November. During this period, Argentine red shrimp fishery is forbidden in the area under provincial jurisdiction. So, both fisheries did not overlap their activities.

8 Assessment results overview

All performance indicators were assessed according to the Default Assessment Tree, excepting the PIs 1.1.1 and 2.2.1, where the team decided to score them using RBF methodology (Productivity and Susceptibility Analysis - PSA, Consequence Analysis – CA, if appropriate). There is no performance indicator scored <60, failing the assessment of the Argentine red shrimp (*Pleoticus muelleri*) offshore bottom trawl fishery in federal waters. Also, **6 conditions were established** for PIs 1.2.2, 2.3.1, 2.3.2, 2.3.3, 2.4.1 and 2.4.3 during the full assessment. The action plan was prepared to conduct tasks to maintain the certification status during the following 5-years.

According to overall score for each Principle (see below), all of them comply with a score ≥ 80 . So, the fishery under assessment meets with the MSC Fisheries Standard to complete the full assessment process.

8.1 Determination

OIA considered any suggested change and comment made to the Public Comment Draft Report. No objections were received during the Final Draft Report stage. OIA grants the certification to the ARGENTINE RED SHRIMP (*Pleoticus muelleri*) OFFSHORE BOTTOM TRAWL FISHERY IN FEDERAL WATERS according to the MSC Principles and Criteria for Sustainable Fishery.

OIA determines that the client group composed by ACHERNAR S.A.S., AGROPEZ S.A., ARBUMASA S.A., ARGENOVA S.A., BUENA PROA S.A., CABO VIRGENES S.A., CATESUR S.A., CENTOMAR S.A., CONARPESA CONTINENTAL ARMADORES DE PESCA S.A., COOKE GROUP (conformed by: GRINFIN S.A. and WANCHESE ARGENTINA S.R.L.), ESTRELLA PATAGONICA S.A., FOOD PARTNERS PATAGONIA S.A., IBERCONSA DE ARGENTINA S.A., LUIS SOLIMENO E HIJOS S.A. PEDRO MOSCUZZA E HIJOS S.A., PESQUERA DESEADO S.A.U., PESQUERA LATITUD 46 GRADOS SUR S.A., PESQUERA SANTA CRUZ S.A.U., PESQUERA VERAZ S.A., PESQUERIA DEL ATLANTICO S.A., RED CHAMBER ARGENTINA S.A., SAN ISIDRO GROUP (conformed by: ARELA S.A., GRECIAMAR S.A., LA ESCALERONA S.A., PESQUERA OLIVOS S.A., PESQUERA SAN ISIDRO S.A. and RIMINIMARR S.A.), THORPESCA S.A.S., URBIZEP GROUP (URBIZEP S.A. and PELAGIC S.A.), VIEIRA ARGENTINA S.A. and XEITOSIÑO S.A. are allowed to use the fishery certificate. OIA only allows that the Argentine red shrimp caught by those fishers through covered vessels that are identified on a valid fishery certificate are eligible to enter in the Chain of Custody certification and subsequent use of the MSC ecolabel.

8.2 Principle level scores

The following table shows overall score for each Principle:

Table 6. Principle level scores.

Principle	UoA
Principle 1 – Target species	82.8
Principle 2 – Ecosystem impacts	80.7
Principle 3 – Management system	87.7

8.3 Summary of Performance Indicator level score

The following table shows scores provided during the full assessment process:

Principle	Component	Performance Indicator (PI)		Draft scores
1	Outcome	1.1.1	Stock status	86
		1.1.2	Stock rebuilding	Not scored
	Management	1.2.1	Harvest strategy	90
		1.2.2	Harvest control rules & tools	75
		1.2.3	Information & monitoring	80
		1.2.4	Assessment of stock status	80
2	Primary species	2.1.1	Outcome	100
		2.1.2	Management strategy	85
		2.1.3	Information/monitoring	85
		2.2.1	Outcome	80

	Secondary species	2.2.2	Management strategy	85
		2.2.3	Information/monitoring	85
	ETP species	2.3.1	Outcome	75
		2.3.2	Management strategy	70
		2.3.3	Information/monitoring	70
	Habitats	2.4.1	Outcome	60
		2.4.2	Management strategy	80
		2.4.3	Information/monitoring	95
	Ecosystem	2.5.1	Outcome	80
		2.5.2	Management strategy	80
		2.5.3	Information/monitoring	80
3	Governance and policy	3.1.1	Legal &/or customary framework	95
		3.1.2	Consultation, roles & responsibilities	95
		3.1.3	Long term objectives	100
	Fishery specific management system	3.2.1	Fishery specific objectives	80
		3.2.2	Decision making processes	85
		3.2.3	Compliance & enforcement	70
		3.2.4	Monitoring & management performance evaluation	80

8.4 Summary of conditions

The following table shows conditions raised during the full assessment process.

Table 7. Summary of conditions.

Condition number	Condition	Performance Indicator (PI)	Deadline	Exceptional circumstances?	Carried over from previous certificate?	Related to previous condition?
1	The client group must provide written evidence that well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY.	1.2.2	4 th certification year	No	NA	NA
2	The client must provide evidence that indirect effects have been considered for the UoA and are thought to be highly likely to not create unacceptable impacts on ETP seabirds and ETP marine mammals.	2.3.1	4 th certification year	No	NA	NA
3	The client must provide evidence that: -There is an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the ETP marine mammal species involved;	2.3.2	4 th certification year	No	NA	NA

	-There is some evidence that the measures/strategy is being implemented successfully for ETP marine mammals and ETP chondrichthyans; AND, -There is a regular review of the potential effectiveness and practicality of alternative measures to minimise the UoA-related mortality of all ETP species and they are implemented as appropriate.					
4	The client group must provide that information is adequate to measure trends and support a strategy to manage impacts on ETP species.	2.3.3	4 th certification year	No	NA	NA
5	The client group must provide evidence that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	2.4.1	4 th certification year of first re- certification	Yes	NA	NA
6	The client group must provide evidence that: -Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery; AND, -There is no evidence of systematic non-compliance.	3.2.3	4 th certification year	No	NA	NA

8.4.1 Recommendation (Optional)

The team recommended to the client group to reinforce the following aspects to:

- Carry out or continue with the development of studies that allow defining biological analytical reference points based on a quantitative stock assessment. CPUE can be used as an empirical reference point, whether limit or objective, but it is risky as it assumes constant encounterability;
- promote the establishment of Harvest Control Rules (HCRs) that are well defined, stable and preferably based on biomass levels;
- to improve the collection of environmental information, which can be incorporated into the management strategy, given that the target resource may be very dependent on abiotic variables;
- continue with the collection of detailed information about direct and indirect impacts on seabirds and marine mammals;

-
- promote the establishment of specific short and long-term objectives explicitly for the management of the fishery; and,
 - improve the compliance of established management measures among ownerships, captains and crew members.

9 Traceability and eligibility.

9.1 Eligibility date

According the MSC Fisheries Certification Process, the eligibility date is a date from which product from a certified fishery is eligible to be sold as MSC certified or bear the MSC ecolabel. The date shall be any nominated date on or between the publication date of the first Public Comment Draft Report (PCDR) and the certification date. It is confirmed that there is no under assessment product for this fishery since the PCDR publication. The next fishing season will be started in April 2026.

The eligibility date for this fishery is stated as the publication date of the 1st Public Comment Draft Report (10th December 2025). As the eligibility date is set before the certification date, any shrimp harvested since the eligibility date and sold or stored as under-assessment fish shall be handled in conformity with requirements described in the clause 7.18.2 of MSC FCPv2.3.

9.2 Traceability – initial review and planning at announcement

According to the clause 7.17.1 – FCPv2.3, the CAB shall determine whether the fishery client has sufficient system of tracking and tracing to ensure all fish and fish products identified and sold as certified by the fishery client originate from the individual UoC. If the CAB makes a positive determination, fish and fish products from the UoC may enter into certified chains of custody and be eligible to be sold as MSC certified or carry the MSC ecolabel.

Based in the information that must be reviewed during the site visit, the scope of this certification potential ends at the reception of fresh and/or frozen shrimp to the client group's facilities which the CoC certification is needed to reduce the any risk of traceability, mix and substitution. In the case of frozen shrimp that are directly sold to customers in the landing process, the fishery certificate will cover trading activities and no separate CoC certificate will be required.

Table 8. Traceability initial planning

The proposed point of change of ownership of product to any party not covered by the fishery certificate
Argentine red shrimp harvested are placed in opened plastic bins of 17 kg (dimension: 655x440x175mm) and are unloaded in the Rawson, Madryn (Province of Chubut), Puerto Deseado (Province of Santa Cruz) and Mar del Plata (Province of Buenos Aires). The client group signed individual agreements with vessel owners to conduct subcontracted harvesting activities and provide chilling shrimp to processing plants (see vessel list provided in the definition of Unit of Certification (UoC)). So, the scope of this certification ends when the fresh shrimp is received in the processing plant of client group. Landing and transporting activities are included in the fishery certificate. In the case of frozen shrimp, this product is processed on-board freezing vessels. Once products are landed in port, the product could be directly sold to customers or being transported to storage and processing facilities (<i>i.e.</i> owner or subcontracted). So, for frozen shrimp products, the score of this certification ends when the product is received in these facilities. If products are directly sold to customers, the fishery certificate will cover trading activities and no separate CoC certificate will be required. It is considered that traceability management systems operated by fishing vessels and the enforcement bodies are sufficiently robust to meet the MSC fisheries traceability requirements. Fishing companies identified in the UoA are eligible to use the fishery certificate and sell product as MSC certified, when sharing agreement mechanism will be applied.
The proposed point from which subsequent Chain of Custody (CoC) is required
Separate Chain of Custody Certification will be required from the landing point when shrimp products change of ownership or when products are addressed to client group handling facilities (<i>i.e.</i> processing plant where products are opened to repack or transform them) or subcontracted storages.
The plan for reviewing traceability at the site visit
During the site visit traceability records will be reviewed as Electronic Fishing Part, Act of Discharge, '<i>Declaracion de Captura Legal</i>', waybill, SiFIPA system and invoices. These records provide enough information to track potential certified product to confirm the UoC origin.

9.3 Traceability within the fishery

During the site visit, the team had access of traceability records as Electronic Fishing Part, Act of Discharge, waybill and SiFIPA (Federal System of Fisheries and Aquaculture Information) database. These records provide enough information to track potential certified product to confirm the UoC origin.

The Federal System of Fisheries and Aquaculture Information database was created in 2022 with the aim to access information of harvesting and productivity tasks of fisheries and aquaculture industry. This database allows track fish product received by a customer and the origin (*i.e.* harvesting area).

Table 9. Traceability within the fishery

Statement on fishery's ability to track and trace to each Unit of Certification
Systems allow the fishery client to track to trace any shrimp or shrimp products sold as MSC certified back to the individual UoC.
Movement of fish and fish product between harvest and landing <i>An illustration of movement of product between harvest and landing. Include when any of the following happen: Harvesting, At-Sea processing, Translocation, Transshipment, Offloading, Landing.</i>
Freezer fleet: Fishing vessel (harvesting) → At-Sea processing → Landing Chilling fleet: Fishing vessel (harvesting) → Landing
Movement of fish and fish products between landing and start of the CoC if relevant. <i>An illustration of movement of product between landing and start of CoC. Include when any of the following is happening: Transport, Storage, Sorting/ Grading, Packing, Auction.</i>
The CoC starts after landing. The client group received fresh/frozen shrimp from associated vessels in their processing plants and/or warehouses. At this point the CoC is needed. Landing → Transport → Processing Plant (start of the CoC) → Storage → Sale by client group company
Description of any processing and sorting/ grading prior to change of ownership
The fishery under assessment is in waters wholly under federal jurisdiction of Argentina, mainly in the closure area for the protection of Argentine hake (AVPJM), between 42° and 48° S, where chilling and freezing vessels exclusively dedicate fishing effort to catch Argentine red shrimp. Only vessels linked with the client group (see Table 5. <i>Unit of Certification (UoC)</i>) are covered by the fishing certificate. The fishing season for Argentine shrimp offshore fishery starts in April and ends in October each year. Fishing trips usually carried out between 1 to 2 days for chilling vessels, where vessels immediately return to landing points. Each vessel is equipped with 1,500 plastic bins (dimension: 655x440x175mm) of 17kg to put in place the shrimp. Shrimp is transported inside the vessel's hold with ice. When vessel complete harvest activities, the fresh shrimp is quickly downloaded in enabled ports and directly transported to the client facilities for its processing, storing and sold. Each processing plant has associated vessels or agreement to provide shrimp each season as it was defined in the Table 5. After the processing of shrimp, associated products are sold to customers and in this point, certified products changes of ownerships. In the case of freezing vessels, the timing of fishing trip is around 2 weeks. Immediately, when the shrimp is harvested, it is placed in the vessel's hold and then, processed on-board, where the product is frozen and packaged. When vessel complete the fishing trip, the frozen product is downloaded in enabled ports. Once products are landed, the product could be directly sold to customers or being transported to storage and processing facilities (<i>i.e.</i> owner or subcontracted). So, for frozen shrimp products, the scope of this certification ends when the product is received in these facilities. If products are directly sold to customers, the fishery certificate will cover trading activities and no separate CoC certificate will be required. It is considered that traceability management systems operated by fishing vessels and the enforcement bodies are sufficiently robust to meet the MSC fisheries traceability requirements. Fishing companies identified in the UoA are eligible to use the fishery certificate and sell product as MSC certified, when sharing agreement mechanism will be applied.

For the critical tracking events (i.e. where in the product flow this data needs to be transferred) of all fish and fish product handling and sale not covered by CoC describe:

- Process of segregating to each Unit of Certification
- Key data elements (i.e. the data or documents to identify the UoC such as species, catch area, gear)

The SAGyP Resolutions N° 48/2019, N° 62/2019 and N° 92/2019 establish the mandatory use of Electronic Fishing Report ('*Parte de Pesca Electronico*') for all those vessels that have a national fishing permit that operate in maritime waters of national jurisdiction. This record details vessel name and registration, departure and landing port, start and end of fishing trip, harvesting area, gear used and composition and volume of shrimp and other retained species in the fishing trip. Also, this report contains item to declare incidental catch of marine mammals and seabirds, specifying date, geographic position, species and quantities. The Electronic Fishing Report is signed by captain. This document guarantees the traceability of any shrimp from catches made within the UoC. For more detail, see the following link: https://sifipa.magyp.gob.ar/sifipa/manual/index.php?title=Manual_de_Parte_de_Pesca_Electr%C3%B3nico

Fresh shrimp and frozen products are stored on-board until vessel arrives to port for discharge process. All landings are monitored by the Provincial/National inspector and fishing company personnel. The inspector weighs and re-counts plastic bins and master cartons to verify catches previously declared by the captain through Electronic Fishing Report and products are transported in bins up to 17kg in case of chilling vessels. This verification process is detailed in the Unloading Act ('*Acta de Descarga*'), where the inspector ensures that fishing companies comply with regulations and Electronic Fishing Reports are consistent with its declaration. Additionally, SENASA, scientific community and internal quality manager of fishing companies can request to fishing companies provide samples to verify if seafood corresponds to commercial size declared and to control quality aspects.

At the end of landing process, products are transported to company's facilities or sold to customers. In the case of client group, several agreements with vessel's owners are signed to provide shrimp to processing plant or other client facilities. For more detail, see *Table 5. Unit of Certification (UoC)*. The transportation is conducted by company's trucks or subcontractors. The waybill provides information about origin (fishing company and vessel), destination (processing plant), date and fishing trip, and quantities of bins/master cartons of shrimp transported.

Shrimp can be traced from their origin using mentioned documents and traceability is maintained by two traceability control systems: Federal Fisheries and Aquaculture Information System (SiFIPA), and Integrated System for Control of Fishing Activities (SICAP). This process is deemed robust enough to allow tracing shrimp back to the area and day of catch, through a series of required documents by provincial management authority and records provided by companies.

Only fishing companies identified in the UoC must sold shrimp as MSC certified. Tracking and tracing certified products will be guaranteed via the following system:

- Logbooks and Vessel Monitoring System (VMS) will allow the tracing of catch back to the location and date of landing;
- Outgoing documentation (Electronic Fishing Report, Unloading Act, waybill and SiFIPA) states species and origin.

Where there are IPI stock(s) within the scope of certification, describe the verification of traceability systems

N/A

Other relevant information on the systems to track and trace to each UoC

See description provided in 'critical tracking events'.

9.4 Traceability risks and mitigation

Table 10. Traceability risks and mitigation within the fishery.

Factor	Description of the traceability risk factors and details of the risk mitigation and management <i>Include in each description:</i> • Whether each factor occurs • When it occurs and how frequently (e.g. regularly, seasonally, rarely) • How any potential traceability risks are mitigated and any risk management • If covered by information provided elsewhere in the assessment report (such as table 9 for segregation or in section 5 MSC Fisheries Standard – Principle 3 – Effective management for regulatory frameworks), cross reference as needed.
Will the fishery use gears that are not part of the UoC? If Yes, include in the description: -If this may occur on the same trip, on the same vessels, or during the same season; -How any risks are mitigated.	No, the fishery does not use other gears that are not part of the UoC. The CFP Resolution N° 7/2018 (Annex I, Article 4°) and its amendments describe that vessels must operate with poles for shrimp nets, with a minimum mesh size in the codend of 45 mm between opposite nodes (lumen) with stretched and wet mesh. The maximum height of the gates and the maximum vertical opening of the net mouth must not exceed 150 cm. No other fishing gear is authorized to operate through the shrimp fishery. Therefore, there are no potential risks detected.
Will vessels in the UoC also fish outside the UoC geographic area? If Yes, include in the description: -If this may occur on the same trip; -How any risks are mitigated.	Yes, there are vessels that could fish outside the UoC geographic area. Some vessels of client group operate in provincial and national waters, before or after the federal fishing season. There is a low probability that this situation occurs in the same trip. Due both fishing seasons are separately in time. Usually, fishing activities starts around March-April and extends up to October-November in national waters. During this period, Argentine red shrimp fishery is forbidden in the area under provincial jurisdiction. So, both fisheries did not overlap their activities. An easy way to avoid this risk is looking at the date of the trip. The coastal and offshore fisheries are never open at the same time. Vessels defined in the UoC catch shrimp, mainly in the location of the closure area for the protection of Argentine hake (AVPJM), between 42° and 48° S, from the provincial jurisdiction line (set up at 12 nm from the coast) to 60° W. The fishing season is conducted in April-October. Also, according to the SAGyP Resolutions N° 48/2019 and N° 62/2019, all vessels shall complete a fishing report ('<i>Parte de Pesca Electronico</i>') that includes traceability details as: name and national registration of vessel, port of shipment and discharge, date of fishing trip, fishing gear used, fishing area position, depth and weight of shrimp harvested. The captain sends this report within 72 hours after finalized the fishing trip to the SSPyA database through 'AUTOGESTION MAGYP-SIFIPA' system. This information is cross-checked with SICAP's system and landing catch control information as SiFIPA database (SSPyA Decree N° 8/2009). All vessels managed by the CFP must use GPS. This requirement is part of VMS or SICAP; where all fishing trips are tracked and landings must be recorded. In case of incongruence in the report declared by captain, sanction measures established in the Law N° 24,922 will be applied. In the case of monitoring, all fishing trips addressed to shrimp must have an inspector or on-board observer according to the CFP Resolution N° 7/2018, if applicable. Therefore, the risk is mitigated.
Do vessels from outside the UoC and/or client group ever fish on the same stock?	Yes, there is other vessels outside the UoC and/or client group ever fish on the same stock. The traceability system in place through the fishing report allow identify the name and national registration of vessels operating in the stock and the fishing company related. More detail sees above.

Do the fishery client members ever handle certified and non-certified products during any of the activities covered by the fishery certificate? This refers to both at-sea activities and on-land activities and should reflect those listed in product movement in Table 9. It includes: • Translocation • Transshipment • Transport • Storage • Processing • Sorting/ grading • Packing • Landing • Auction	Yes. Fishing companies could handle fresh/frozen shrimp certified can come from: (a) vessels out of the UoC, (b) vessels within the UoC, but operating before or after the fishing season in waters of Province of Chubut. The risk is reduced in at-sea activities, due the fishing seasons of shrimp coastal and offshore fisheries are separated in time. However, the risk increases in on-land processing activities. Therefore, the verification of chain of custody is needed.
Does transshipment occur within the fishery? If yes, include in the description: -What is the type of transshipment in-port/ high seas/ other -What are the systems used to track and trace to UoC For high seas transshipment include in the description how the systems to track and trace to the UoC: -Are verified independently of the fishery client -Cover all fishing and receiving vessels involved in transshipment -Apply to all transshipment events If any of these 3 criteria above are not met for high seas transshipment CoC certification is required for both the fishing and receiving vessels involved in this transshipment.	No. Transshipment activity at sea is forbidden in Argentine waters. The Enforcement Authority shall ensure compliance with the obligation to landing fishing products in Argentine ports and coordinate with the competent authorities the necessary measures to guarantee their control. These measures are described above. According to the Law N° 24,922 and Executive Order N° 748/1999, the Enforcement Authority may authorize the transshipment under exceptional circumstances (e.g. occupation of port facilities and/or the lack of availability of space on the docks). This authorization must be requested and can only occur in port places close to the coast supervised by management authority. This activity does not occur in this fishery; due shrimp is maintained with ice in the vessels until landing be enable. To monitor the compliance of vessels in regard with the prohibition of transshipment at sea, the management authority has in place the satellite monitoring system that allows to follow vessel activities in real time (https://www.marinetraffic.com/en/ais/home/centerx:-12.0/centery:25.0/zoom:4). So, there is no risk related with transshipment activities.
Are trading agents to be covered within the fishery certificate? If yes, include in the description: -How information on UoC is passed through	No. Individual agreements were signed between fishing companies and vessel owners with the aim to conduct harvest activities and provide directly fresh/frozen shrimp to processing plants of the client groups.
Are there any other risks of mixing or substitution between certified and non-certified fish? If No, refer to the section describing product movement and segregation which demonstrates this.	Yes. The duration of each fishing trip is around 10-15 days. All hauls conducted by chilling vessel in immediately put in plastic bins with ice, and the vessel immediately return to the landing port to conduct the transportation until the processing plant. As the shrimp harvested by this fleet is a fresh product, the fishing trip cannot take place more time. The federal fishing season starts in April and ends in October each year. Chilling vessels could operate in the provincial and offshore shrimp fisheries. Freezing fleet is not allowed to catch shrimp in the restricted fishing area of Province of Chubut. However, the risk to mix or substitute shrimp harvested inside or outside the geographical UoC area is reduced, due all vessels shall complete the Electronic Fishing Report ('<i>Parte de Pesca Electronico</i>') that contains relevant information to species harvested, including geographical fishing area where hauls are addressed. The fishing operation area is verified by the satellite monitoring system. In case that the vessel conducts fishing operations inside or outside of the geographic UoC area in the same trip, shrimps are physically separated on-board according

to fishing area. **However, if that case occurs in vessels linked with certification, all shrimp harvested must be considered as non-certified.**

9.5 Eligibility to enter further chains of custody

According to the clause 7.17.1 – FCPv2.3, the CAB shall determine whether the fishery client has sufficient system of tracking and tracing to ensure all fish and fish products identified and sold as certified by the fishery client originate from the individual UoC. If the CAB makes a positive determination, fish and fish products from the UoC may enter into certified chains of custody and be eligible to be sold as MSC certified or carry the MSC ecolabel.

Based in the information reviewed, the scope of this certification ends at the reception of shrimp to the client group's facilities, which the CoC certification is needed to reduce the any risk of traceability, mix and substitution. It is considered that traceability management systems operated by vessels, the enforcement bodies and the client group are sufficient robust to meet the MSC fisheries traceability requirements up to the first point of landing reception of shrimp.

For subsequent links in the supply chain to be able to use the MSC logo, separate Chain of Custody certificates must be obtained.

Table 11. Eligibility to enter Chain of Custody

Determination on whether fish and fish products from the certified UoC(s) can go onto be sold as certified. Including: -Whether the ability for fish and fish products to be sold as certified is conditional upon CoC certification; -If traceability systems still need to be established prior to either CoC certification OR revised fishery determination.
It is determined that fish and fish products from the certified Units of Certification can go onto be sold as certified.
The point of change of ownership of product to any party not covered by the fishery certificate and detail of any trading between client group members prior to this
Argentine red shrimp harvested in the federal jurisdiction waters of Argentina, mainly in the closure area for the protection of Argentine hake (AVPJM), between 42° and 48° S, are placed in opened plastic bins of 17 kg by chilling vessels and are landed in enable ports. In this point, fresh shrimp are directly transported to the processing plants. The client group signed individual agreements with vessel owners to conduct subcontracted harvesting activities and provide chilling shrimp to processing plants (see vessel list provided in the definition of Unit of Certification (UoC)). So, the scope of this certification ends when the fresh shrimp is received in the processing plant of client group. In the case of freezing vessels, shrimps are directly placed in the vessel's hold and then, processed on-board, where the product is frozen and packaged. When vessel complete the fishing trip, the frozen product is downloaded in enabled ports. Once products are landed, the product could be directly sold to customers or being transported to storage and processing facilities (<i>i.e.</i> owner or subcontracted) of the client group. So, for frozen shrimp products, the scope of this certification ends when the product is received in these facilities. If products are directly sold to customers, the fishery certificate will cover trading activities and no separate CoC certificate will be required. Landing and transporting activities are included in the fishery certificate. It is considered that traceability management systems operated by fishing vessels and the enforcement bodies are sufficiently robust to meet the MSC fisheries traceability requirements. Fishing companies identified in the UoA are eligible to use the fishery certificate and sell product as MSC certified, when sharing agreement mechanism will be applied.
The point from which subsequent Chain of Custody (CoC) is required <i>The latest this can happen is the point of change of ownership of fish or fish product to any party not covered by the fishery certificate (reference section above) but it may happen sooner in which case describe as per the product flow (in table 9). Note the requirement for when CoC is required to start on High Seas Transshipment.</i>
Separate Chain of Custody Certification will be required when fresh/frozen shrimp are received in the client group handling facilities (<i>i.e.</i> processing plant where product is transformed and packaged).

The entities, or categories of entities, at the point of landing and/or sale required to have separate CoC including any auctions, selling agents, offloaders or storage facilities and so not covered in the above tables 9 and 10.

As it is stated above, all client group handling facilities as processing plants and/or warehouse must have a separate CoC certification.

Also, all organisations that take legal ownership of certified products in the subsequent supply chain need the CoC certification.

A list of entities, or categories of entities, eligible to access the certificate and sell product as certified including:

- Confirm if all vessels within the geographic area and gear of the UoC are eligible to sell fish and fish products as certified
- Any other limits to vessel types, ownership, client group membership
- Include any trading agents used

Only vessels linked with the client group identified in the UoC are eligible to provide shrimp as certified to client assigned according signed agreements (see definition of UoC). Fishing vessel owners do not have enable to make any claims of MSC certification.

Only fishing companies identified in the Fishery Certificate are enabled to sell shrimp and shrimp products as certified. If any eligible company wish to be included in the client group membership must to complete the certificate sharing process.

Points of landing, auctions or other transfer which may be used for the sale of fish from the certified fishery into further chains of custody, either:

- The geographic region where all landing points are possible, or
- Named landing points, auctions or other transfer sites if there are limits

All landings conducted by chilling and freezing fleets that have license to catch shrimp in federal waters take place in enabled ports as Rawson, Madryn (Province of Chubut), Puerto Deseado (Province of Santa Cruz) and Mar del Plata (Province of Buenos Aires).

Any specific eligibility criteria for product to be sold as certified, or where to find this information where relevant, including:

- Product form
- Trip type (e.g. includes outside EEZ),
- Need for Chain of Custody
- Need for trading through client group members

N/A.

How fish or fish products can be identified or can be confirmed as certified at the point it enters certified CoC, including:

- How information on gear, species, stock, area, vessel (where relevant) client group member (where relevant) is provided
- Any segregation to UoC required of first buyers (e.g. sort batches by species)
- Where relevant how any specific eligibility criteria can be confirmed by the first buyer (as per section above)

All processing plants that receive shrimp must record this transaction in the SiFIPA's system. This database allows track fish product received by a customer and the origin (i.e. harvesting area), linking the information with respective Electronic Fishing Report. If the company does not submit this information, previously to seafood processing, products cannot be sold after. This database also allows to complete input-output volume reconciliation.

The Electronic Fishing Report ('Parte de Pesca Electronico') contains relevant information to identified species harvested and confirm certified status of them. This record details vessel name and registration, departure, and landing port, start and end of fishing trip, harvesting area, gear used and composition and volume of fresh shrimp and other caught species in the fishing trip. This document guarantees the traceability of any shrimp product from catches made within the UoC.

How IPI is identified to first buyers at the point it enters certified CoC where relevant

N/A.

9.6 Eligibility of Inseparable or Practicably Inseparable (IPI) stock(s) to enter further chains of custody

According the MSC Fisheries Certification Process, the CAB shall determine whether there are catches of non-target (Principle 2) stock(s) that are inseparable or practicably inseparable (IPI) from target (Principle 1) stock(s). It is confirmed during the site visit and scoring process, that there is no IPI stock related with the Argentine red shrimp fishery. Also, during fishing operation, there is a mechanical selection of target species and accompanying fauna during the on-board process.

10 Scoring.

10.1 Principle 1

10.1.1 Principle 1 background

a. Biology and ecology of *Pleoticus muelleri*

The Argentine red shrimp, *Pleoticus muelleri*, is a crustacean decapod from the suborder Dendobranchiata, family Solenoceridae and genus *Pleoticus* (Perez Farfante, 1977; Holthuis, 1980; Bowman & Abele, 1982).

The Argentine red shrimp is a coastal neritic species, distributed from Rio de Janeiro, Brazil (23° S) to Province of Santa Cruz, Argentina (50° S) (Figure 1).

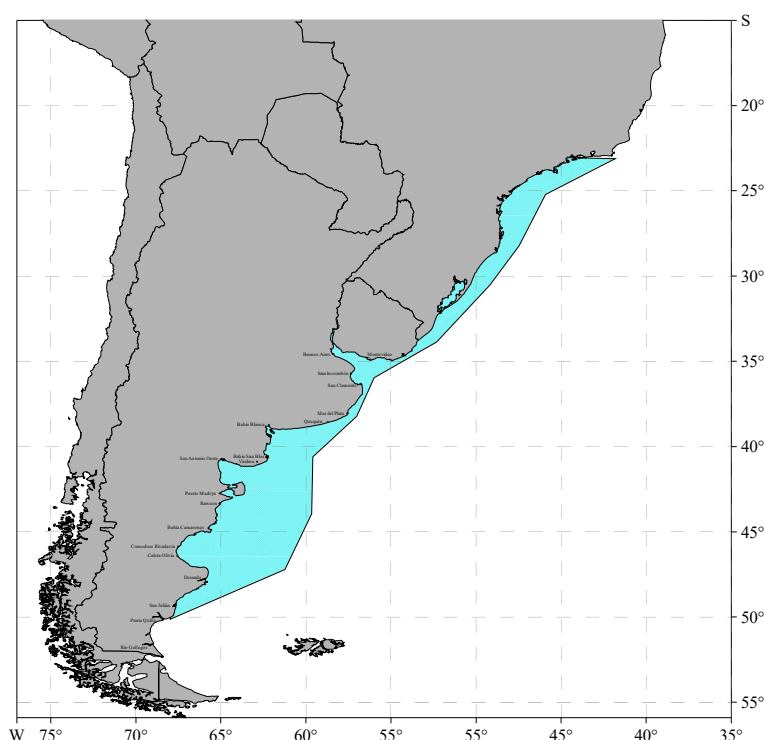


Fig. 1. Argentine red shrimp, *Pleoticus muelleri*, geographic distribution (Source: De la Garza *et al.*, 2017).

It is a demersal benthic species occupying depth range from 3 m to 120 m (De la Garza *et al.*, 2017). This species is atypical of the superfamily Penaeoidea, not occupying estuaries or brackish water. Its whole life cycle is spent in marine waters. The cycle starts with eggs being released to the sea, developing in several stages, including three larval stages with its respective substages (six of nauplius, three of protozoa and two of mysis); a post larval stage; a juvenile stage; and an adult stage. The critical stage in Argentine red shrimp's life cycle is the transition from nauplius stage to protozoa, at which point endogenous feed changes to exogenous feed. The larval and post larval cycles are assumed to last between 4 and 5 months. The Argentine red shrimp has a relatively short life cycle and a variable high growth rate depending on the distribution area and the season. Juveniles, with cephalo-pereon length of 3 mm, recruit to the fishery at about one year of age. The extension of this cycle may be related to water temperature since this parameter has a great influence on the metabolism of first stages of development (De la Garza *et al.*, 2017).

Direct estimates of age are not available, but modal progression analysis suggests that longevity is about 3-4 years (Figure 2). The species is sexually dimorphic with size-at-age greater for females than males. The von Bertalanffy growth function, with seasonal variation, estimates asymptotic length (L_{∞}) of 57 mm cephalo-pereon length (CL) for females and 45 mm CL for males and a K coefficient of 1.05 and 1.11 for females and males respectively (Figure 2). Space-time analysis of size structure of mature females demonstrates that bigger sizes are found in waters outside San Jorge Gulf during winter and in Rawson (southern coastline and its surroundings), and in Camarones Bay as of spring (Fernandez *et al.*, 2012). Since 2014, they were observed at 41° – 42° S and 60° – 62° W (Fernandez & Macchi, 2016), which is consistent with the

descriptions of Bertuche *et al.* (2005) and De la Garza *et al.* (2008). These authors described a latitudinal trend in mean and modal sizes (Figure 3), with size increasing from southern areas (southern area of San Jorge Gulf) to the most northern area (Rawson).

Regarding feeding habits, the Argentine red shrimp is an active predator, catching prey and eating them whole and alive. Roux *et al.* (2004) state that ecologically, red shrimp is an important benthic predator, and that its feeding behaviour is like that of other penneid crustaceans. Its diet is essentially composed of crustaceans, molluscs and polychaetes, which are groups especially numerous and abundant, thus allowing for food high availability. Other organisms included in its diet are seaweed, foraminifera, tintinnida, porifera, hidrozooa, nematoda, kinorhyncha, echinoderms, fish and marine debris. No differences in diet composition were observed between males and females. In conclusion, Argentine red shrimp may access a large and abundant offer of prey in its natural habitat, allowing it to expand its distribution due to proper food availability.

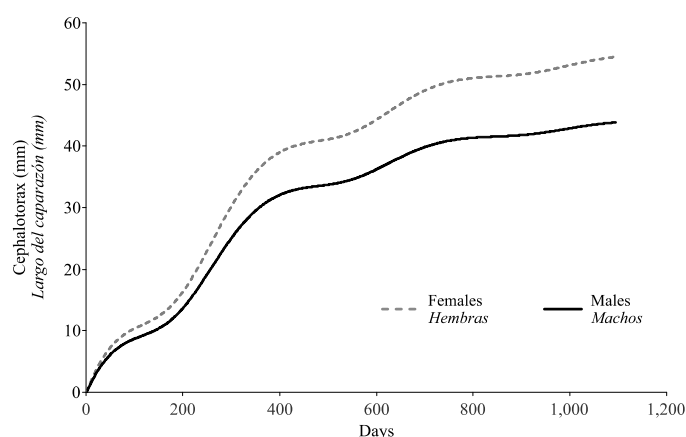


Fig. 2. Growth curves of Argentine red shrimp females and males. (Source: De la Garza *et al.*, 2017)

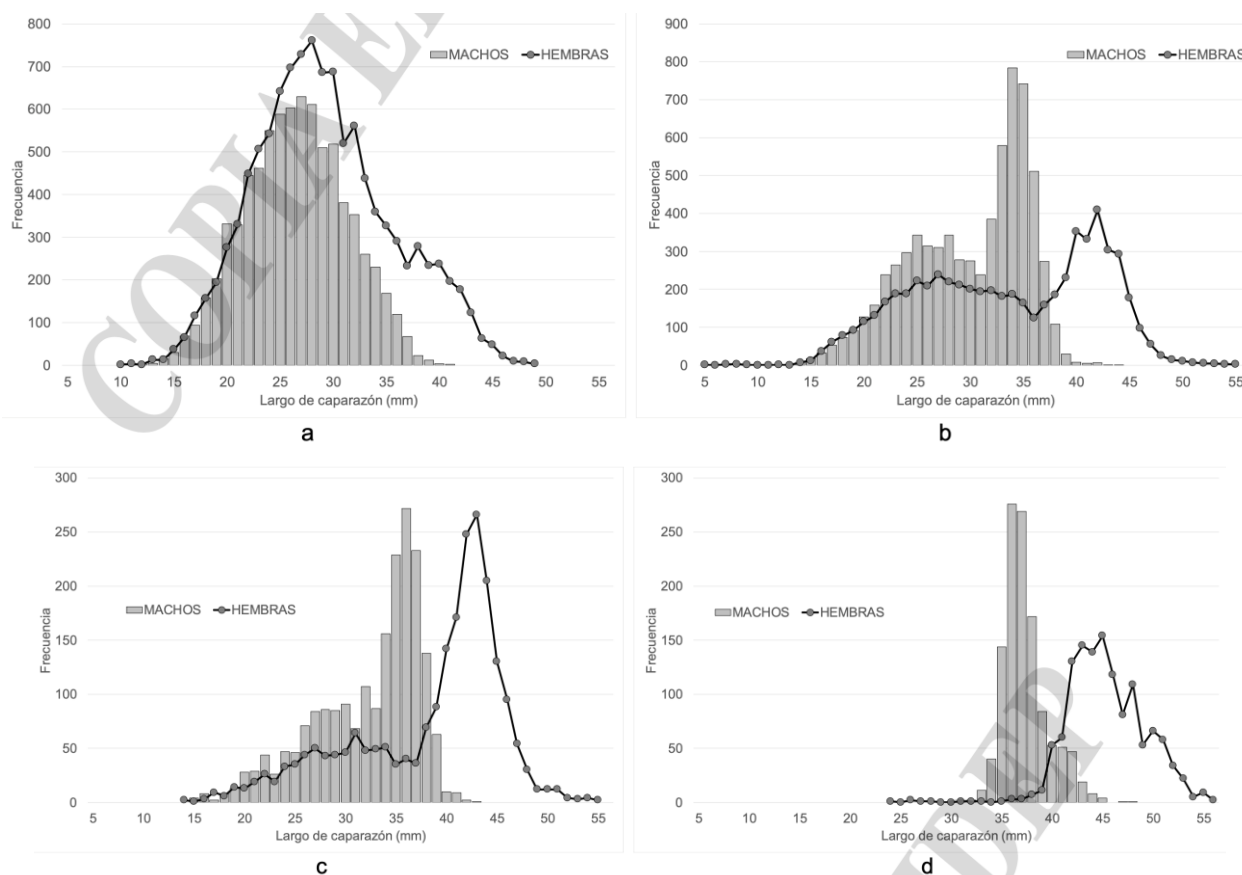


Fig. 3. Distribution of sizes of shrimp caught in 2019 March in the following areas: a. South of the San Jorge Gulf, b. North of the San Jorge Gulf, c. national waters, d. Rawson; histogram represents males, lines represent females (Source: De la Garza & Moriondo Danovaro, 2019).

The distribution of mature and ovigerous females indicates that spawning takes place throughout the Patagonian coast between parallels 42° and 47° S (Figure 4.a), and it concentrates in three main sectors: to the south of Port of Rawson (43°20' to 44°20' S, from the coast up to 64° W); north of the San Jorge Gulf (from Rasa Island to Solano Bay) and south of the San Jorge Gulf (near Bajo Mazarredo Bay, between the coast and parallel 46°30' S and between meridians 66°10' and 67°00' W). Spawning occurs in association with oceanographic fronts of high productivity, which ensures high food availability and quality for larvae survival. While larval survival is related to environmental variation, recruitment also appears to be related to parental stock abundance. Female seasonal maturation progresses through five stages, achieving maturity as early as winter (August), whereas males show little seasonal cycle and mature males can be found throughout the year. Spawning occurs during the Spring-Summer months (October-March) but there is considerable latitudinal variation; in northern areas (including Rawson) spawning extends from October to April whereas in southern-most areas it occurs later, from November-December to March (De la Garza *et al.*, 2017). Moriondo Danovaro *et al.* (2016) highlight that as of 2014, an extension of the reproductive grounds to 41° S has been detected, which coincides with important concentrations found during the first four months of the year between 40° and 42° S, and from the coast (San Matias Gulf) to 60° - 62° W (Figure 4.b).

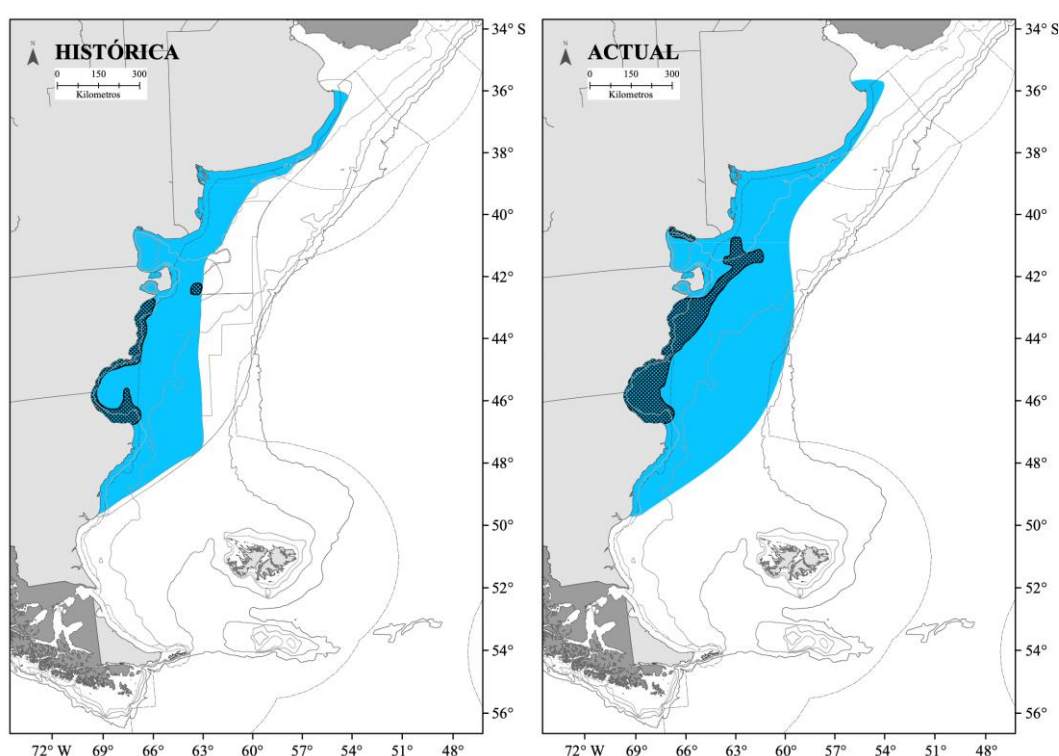


Fig. 4. Space distributions of *Pleoticus muelleri* mature and ovigerous females: a. Historic (1998-2012), b. Present (2013-2018) (Source: Allega *et al.*, 2020).

Fecundity is high and varies with environmental conditions, female size and latitude. Potential fecundity values estimated in February 2014 for mature females collected in San Jorge Gulf and the coastal area near Rawson were between 194,198 and 505,041 oocytes for the range between 34 and 45 mm cephalo-pereon length (CL). In April 2014, in 41° - 42° S, the fecundity estimated varied between 502,597 and 1,076,442 oocytes for females between 46 mm and 58 mm CL. Mean relative fecundity (per gram female) was 8,733, 9,273, 9,437 and 10,800 oocytes per female for southern and northern areas of San Jorge Gulf, Port of Rawson and 41° - 42° S, respectively (Fernandez & Macchi, 2016a); these results indicated a high individual breeding potential for Argentine red shrimp. Since November 2017, a delay in the reproductive process has been registered, which might be related to environmental conditions (De la Garza & Moriondo Danovaro, 2020a).

According to Roux *et al.* (2012), two distinct migration patterns have been identified from the Bajo Mazarredo Bay area (between parallel 46°30' S and the coast, and meridians 66°10' and 67° W), both with N-NE direction: a long-distance route, with specimens recaptured north of parallel 44° S; and a short distance route, with specimens recaptured south of parallel 46° S. The marked specimens had a mean travel distance (measured in straight lines between the release point and the recapture point) of 44.31 nm, and a maximum travel distance of 190 nm. Figure 5.a shows an early depiction of the migration pattern as described by Boschi (1989), while Figure 5.b. and Figure 5.c. shows a more recent migration

model from the mark-recapture INIDEP program. Roux *et al.* (2012) note that it would be important to replicate the experience for concentrations along the coasts of the Province of Chubut, especially between parallels 43°05' and 44°55' S, and between meridian 64°30' W and the coast.

As stated in Roux *et al.* (2012) and De la Garza *et al.* (2017), several hypotheses regarding migration patterns have been formulated. The main causes of Argentine red shrimp migration during autumn in the Southern hemisphere seem to be the search for food and for an appropriate physical space to grow. De la Garza *et al.* (2017) explain that Argentine red shrimps located in the northern zone of the San Jorge Gulf during summer belong mainly to the spawning stock in full activity, so their migration behaviour is different from the shrimps marked in the southern zone of the Gulf. The specimens of the north area mainly show an offset component with South-eastern direction towards federal jurisdiction waters, where they mix with individuals coming from the south area at the end of the breeding season (autumn). Close to the end of winter and beginning of spring, the movement pattern changes North and/or westwards back to the coast (Figure 5.b. and Figure 5.c).

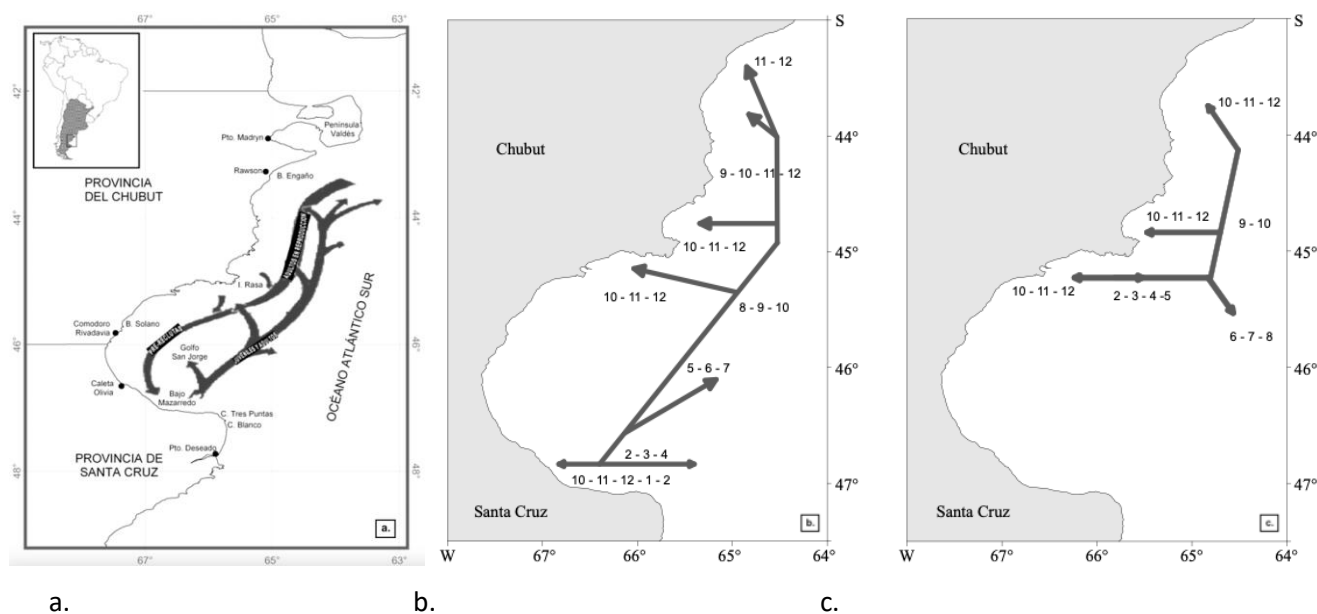


Fig. 5. Annual model of Argentine red shrimp migration: a. life cycle of Argentine red shrimp as depicted by Boschi (1989), indicating the main areas of spawning, migration and growth (Source: De Carli *et al.*, 2012), b. specimens marked in the south of San Jorge Gulf, c. specimens marked in the north of the San Jorge Gulf (Source: De la Garza *et al.*, 2017) [The numbers represent the months on which shrimps were found]

b. Fishery

As noted by Gongora *et al.* (2020), the species sustains several small-scale fisheries along its geographic distribution, in Bahia Blanca in Argentina, and in Punta del Diablo in Uruguay; however, it is only in the Patagonian area where a large-scale industrial fishery takes place. The landings in other countries are negligible in comparison. As described by Fernandez *et al.* (2011), the fishery in Brazil is mainly developed in the Sao Paulo coast, during 1999-2005, 55 t were caught with a peak of 34 t in 2001. In Uruguay, the species is targeted by the artisanal fleet and the highest fishing effort is located in Punta Del Diablo, where the total annual catch in 2005 and 2006 was 12 t. Argentine red shrimp fishery dates back to the beginnings of the 1950s, changing from artisanal to industrial fishery when high concentrations were found in San Jorge Gulf (GSJ), with a maximum annual landing of 2,500 t, and a mean annual catch of 690 t, between 1950 and 1980. Argentine red shrimp industrial fishing in the San Jorge Gulf began in the 1980s, and during this decade annual landing increased up to a maximum of 22,000 t (mean of 9,980 t). Since the 1990s, fishing vessels exclusively dedicated to catch Argentine red shrimp, known as outrigger trawlers or shrimpers, were introduced into the fishery industry. These deep-sea factory vessels, between 25 and 55 m in length, with main engine power reported between 550 and 2,000 HP, operate simultaneously with two bottom trawling nets, one by each outrigger, with a 45-50 mm net stretched mesh and a vertical opening around 1.5 m.

Currently, Argentine red shrimp fishing is one of the most important fisheries in the Argentine Sea, and it has been, in recent years, the most profitable in the Exclusive Economic Zone (EEZ). Even though there is still a coastal/artisanal fishing

of Argentine red shrimp along the Province of Buenos Aires coastline and within San Matias Gulf, captures reported from these areas are insignificant compared to the landings reported from the Patagonian Region (43° to 47° S) (Moriondo Danovaro *et al.*, 2016). Since 2006 total annual landings reported have experienced a constant increase, reaching a record of 254,925 t in 2018 (Navarro *et al.*, 2022). Since 2014, almost all the reported annual landings come from fishing grounds located at the south of parallel 40° S. According to the Fisheries Economy Department (2019), the participation of Argentine red shrimp in 2018 exports was higher than the rest of the commercial marine species, with an export value of almost 1,300 million dollars (more than 60% of total fishery exports).

Figure 6 shows the evolution of annual historical Argentine red shrimp landings since 1950 up to date (Sanchez *et al.*, 2012; Navarro *et al.*, 2019, 2022; SSPyA, 2024), and Figure 7 shows the Argentine red shrimp geographic distribution in the Argentine Sea and its main fishing areas (De la Garza *et al.*, 2017; Allega *et al.*, 2020).

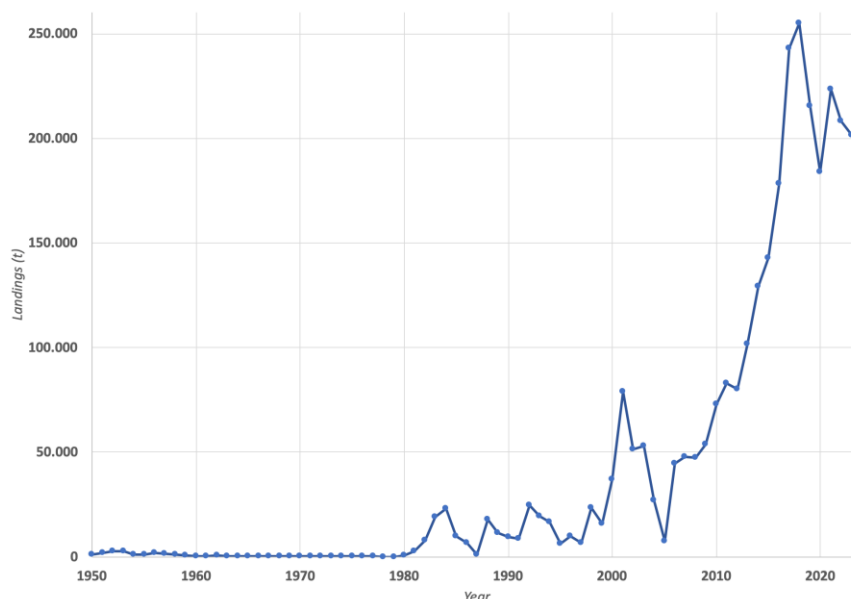


Fig. 6. Evolution of annual landings (tons) declared from 1950 to 2024. (Source: Sanchez *et al.*, 2012; Navarro *et al.*, 2019, 2022)

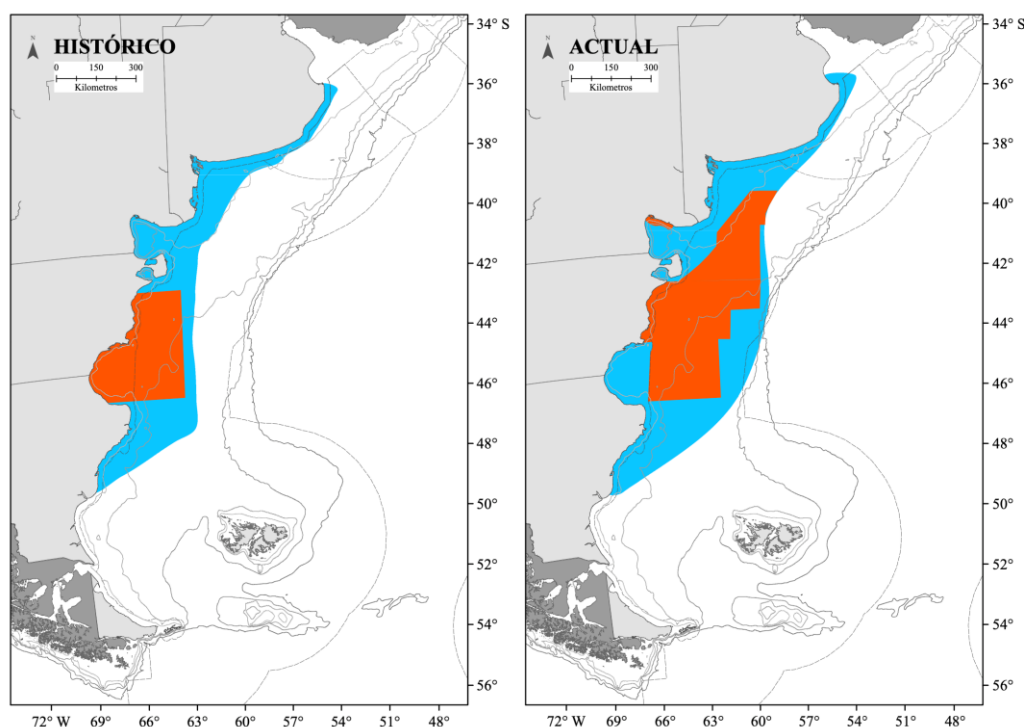


Fig. 7. Spatial distribution of high-yield concentrations (in red) of Argentine red shrimp in the Argentine Sea. Left: historical distribution according to data from the 1998-2012 period. Right: Current distribution according to data from the 2013-2018 period. (Source: Allega *et al.*, 2020).

Fishery under MSC assessment occurs in waters wholly under the jurisdiction of the federal government of the Republic of Argentina, and excludes waters under provincial jurisdiction, mainly in the location of the closure area for the protection of Argentine hake (*Area de Veda Permanente para la Protección de Juveniles de Merluza* - AVPJM). As stated in the CFP Resolution N° 26/2009 and modified in the CFP Resolution N° 9/2014, the AVPJM is located between parallels 42° and 48° S, from the provincial jurisdiction line (set up at 12 nm from the coast) to 60° W (Figure 8).

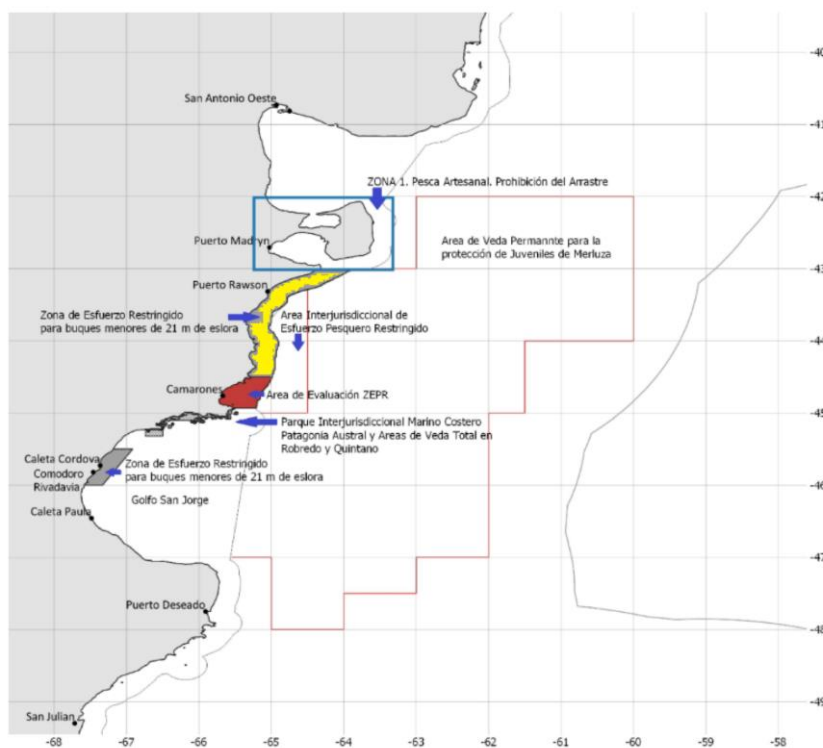


Fig. 8. Permanent Closure Zone to protect hake juveniles (AVPJM, defined with red line) in waters under the federal jurisdiction and Restricted Fishing Effort Zone (ZEPR, in yellow) in waters under the jurisdiction of the Province of Chubut (Source: Gongora et al., 2020).

Another Argentine red shrimp fishery (*Pleoticus muelleri*) take place, in the area known as the Restricted Effort Fishing Zone (*Zona de Esfuerzo Pesquero Restringido* - ZEPR, see Figure 8). The ZEPR was created by Disposition N° 200/2000-DGIMyPC. As stated in SPCh Resolution N° 6/2019, the ZEPR is located near the Port of Rawson, between parallels 43° and 44°56' S, from the coast up to the provincial jurisdiction line (set up at 12 nm from the coast). It should be noted that this distinct fishing zone is also recognized in federal legislation. The ZEPR is identified in national legislation as the portion of the Interjurisdictional Area of Restricted Fishing Effort (*Area Interjurisdiccional de Esfuerzo Pesquero Restringido* - AIER) that is under the provincial jurisdiction of Chubut, which limits are defined as: to the North, parallel 43° S; to the East, the exterior limit of the Argentine territorial sea (that is, the limits of the provincial jurisdiction, 12 nm from the coast); to the South, parallel 44°56' S; and to the West, the coasts of the Province of Chubut. Although the coastal fleet of vessels smaller than 21 m may extend beyond this area.

Different fleets participate in the Argentine red shrimp fishery: the freezing fleet, the offshore chilling fleet fishing in waters under national jurisdiction (composed of fishing vessels larger than 21 m in length), the coastal chilling fleet (composed of fishing vessels between 12 and 21 m in length), and an artisanal fleet of vessels smaller than 9.9 m in length. Figure 9 shows the number of fishing vessels in each of the three main categories per month per year between 2009 and 2018. The fishery entering MSC assessment consists of chilling and freezing vessels that operate in the fishery under similar management rules contained in the CFP Resolution N° 7/2018 and modified through the CFP Resolutions N° 9/2022 and N° 22/2022. Fishing in waters under federal jurisdiction usually take place between March/April and October/November each year.

According to De la Garza & Moriondo Danovaro (2020b), the freezing fleet has historically contributed more to Argentine red shrimp landings in the fishery, although its participation has decreased from 80% to 47% between 2009 and 2018, as the chilling coastal fleet participation rose. In 2020, during an atypical season caused by the COVID pandemic and worker strikes affecting the freezing fleet but not the chilling fleet, its participation in landings was only 31%.

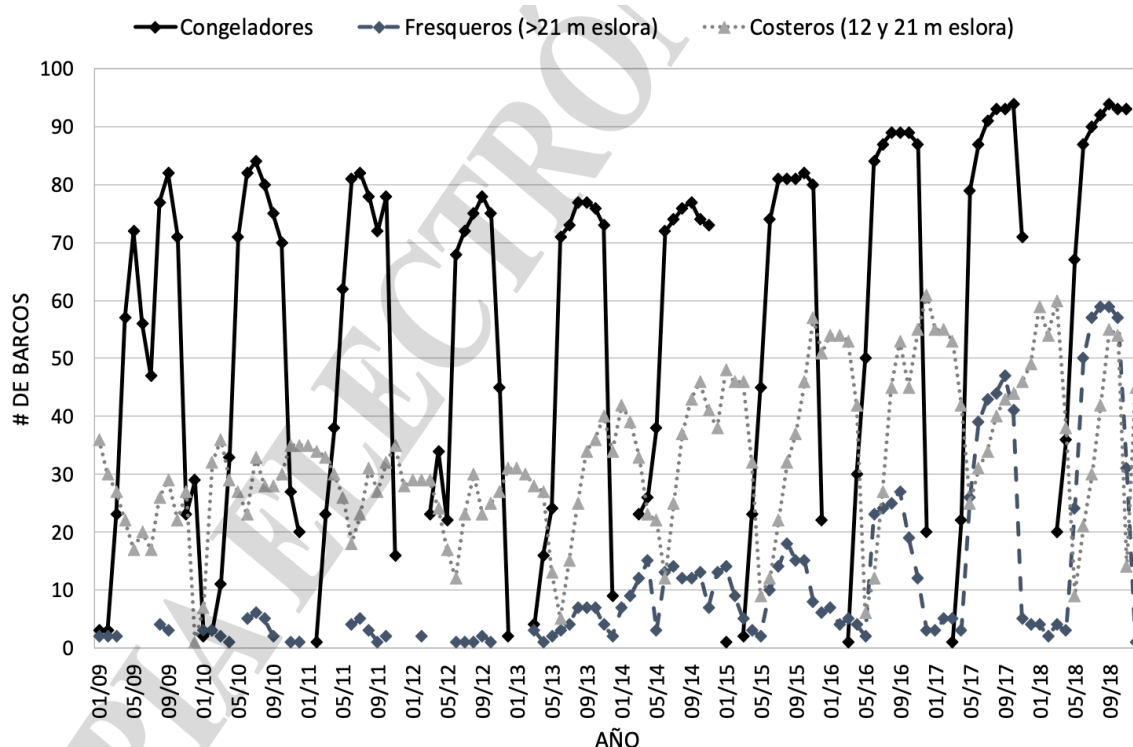


Fig. 9. Evolution of the number of fishing vessels per fleet stratum per month per year in the 2009 – 2018 period. [Congeladores = Freezing fleet; Fresqueros = Chilling fleet (>21 m in length); Costeros = Coastal fleet (between 12 and 21 m in length)] (Source: De la Garza & Moriondo Danovaro, 2020b).

The Argentine red shrimp fishery takes place both in waters under federal jurisdiction and in provincial jurisdiction. In 2017, 72% of Argentine red shrimp landings came from federal waters and 25% came from Chubut waters; in 2018, 78% of landings came from federal waters and 21% came from Chubut waters. In 2019 and 2020, approximately 67% of landings came from federal waters and 32% came from Chubut. In 2022, 65% of landings came from federal waters (including waters adjacent to the AVPJM north of 41° S) and 34% came from Chubut (De la Garza *et al.*, 2023). The remainders in the four years mentioned came from other provincial jurisdictions.

Recently, the Argentine red shrimp fishery that takes place in waters under the jurisdiction of the province of Chubut was certified against the MSC Standard. There are no other overlapping MSC certified fisheries exploiting the same stock.

c. Fisheries management

As it has been previously mentioned, the Argentine red shrimp fishery takes place in waters under federal jurisdiction, and in waters under the jurisdiction of the Province of Chubut. The following paragraphs describe the harvest strategy in waters under federal jurisdiction, as this is the fishery under assessment. A general scope of the fisheries management under federal jurisdiction will be discussed first, to then expound on the fisheries management under the provincial jurisdiction.

While not explicitly expressed in the federal or provincial regulations, the harvest strategy for the Argentine red shrimp fishery is oriented towards minimizing the risks of growth overfishing and recruitment overfishing, while maximizing yields. This is based on (i) a permanent assessment of the recruitment process and the environmental context in which it takes place; (ii) the regular estimation of indicators related to future yield scenarios; and (iii) the adoption of practical and swift measures that reflect the population dynamics of the resource, such as dynamic spatial and temporal closures that favour the maximization of the renewal of the stock and which reduce the risk of growth overfishing, recruitment overfishing, and significant alterations of the fishing bottoms (Bertuche *et al.*, 2000b; Roux *et al.*, 2012).

In the mid-1980s, the first regulations on fishery management of Argentine red shrimp were issued, with the purpose of preventing shrimp overfishing. Simultaneously, the first closed area aimed to protect the growth of juvenile Argentine red shrimps was put into effect in the area known as Bajo de Mazarredo, located south of the San Jorge Gulf (Boschi, 1989).

Fishery management relies on research campaigns that are conducted thrice a year by the INIDEP. These aim at (i) assessing the status of the reproduction process and the recruitment process; (ii) estimating abundance and biomass; and (iii) calculating length distributions, among other research objectives. In addition, real-time monitoring in waters under federal jurisdiction is provided by INIDEP's On-board Observers Program, which allows for the dynamic opening and closure of the different fishing areas in which the Argentine Sea is divided for statistical and management purposes. The main harvest strategy is set by the Federal Fisheries Council that controls fishing in waters under federal jurisdiction. Currently, fishery management measures at the federal level are to be found in the CFP Resolution N° 7/2018, modified by means of the CFP Resolution N° 9/2022.

The Federal Fishery Council opens and closes fishing areas relying on advice provided by INIDEP regarding catch length, proportion of impregnated females and the incidental catch of Argentine hake (*Merluccius hubbsi*). The CFP Resolution N° 9/2022 amends Article 17° of Annex I in the CFP Resolution N° 7/2018, the Federal Fisheries Council formalized a harvest control rule for the fishery under federal jurisdiction. Article 17° now explicitly states that fishing areas will be dynamically opened and closed, and that fishing areas will be closed when, according to information provided by INIDEP, a high level of mature or impregnated females is present in the catch, and the CPUE is analysed, especially when the following is observed: (a) the relation hake/shrimp is larger than 20%, and/or (b) there is presence of Argentine red shrimp of commercial categories L4 or smaller in a percentage larger than or equal to 20% during four consecutive fishing days. This harvest control rule is in line with the preliminary harvest control rule made explicit in CFP Acts N° 19/2019 and N° 19/2020 for the 2019 and 2020 fishing seasons, where the Federal Fishery Council stated that fishing areas shall be closed if the information provided by INIDEP observers signalled that: (a) there is presence of Argentine red shrimp commercial categories L4, L5 and L6 in catches in a proportion equal or greater than 20% for four consecutive days in any area, or (b) the relation hake/shrimp is greater than 0.20 in any area. Furthermore, the monthly CPUE-based reference points and the mature female-based reference points used by INIDEP to provide advice to the Federal Fishery Council are contained in INIDEP's Report (De la Garza & Moriondo Danovaro, 2021). This would work together with the suggested target reference point set by INIDEP at 60% of the average abundance surveyed in March between 2017 and 2021 (Moriondo Danovaro *et al.*, 2022b).

The harvest strategy implemented by the Secretary of Fisheries the Province of Chubut complements and aligns with the harvest strategy implemented by the Federal Fishery Council in federal waters. Please note that the Province of Chubut holds a seat at the Federal Fishery Council. Taking into consideration the particularities of the fishery in provincial waters, the Secretary of Fisheries of the Province of Chubut has set measures.

Several no-fishing zones have been instituted in conjunction with Chubut and Santa Cruz to protect certain reproduction and nursery areas. In the mid-1980s, the first regulations on fishery management of Argentine red shrimp were issued, with the aim of preventing shrimp overfishing. Simultaneously, the first closed area aimed to protect the growth of juvenile Argentine red shrimps was put into effect in the area known as Bajo Mazarredo Bay area in the San Jorge Gulf (in the sector of the gulf under jurisdiction of the Province of Santa Cruz) (Boschi, 1989; Roux *et al.*, 2012). The area was shown to also protect reproductive concentrations in the months of January and February. As of 2017, the San Jorge Gulf in its entirety is closed to fishing to protect Argentine red shrimp's reproductive process and to avoid recruitment overfishing. It should be noted that the San Jorge Gulf is under jurisdiction of Chubut and Santa Cruz, and its closure is instituted by those provinces as a contribution to the coordinated management of the Argentine red shrimp stock, as shown in the CFP Act N° 14/2017, and CFP Resolutions N° 7/2018 and N° 22/2022.

The CFP Resolution N° 7/2018 also calls for the design of a Contingency Plan in case catches are reduced to 50% or more in relation to the average value of the last five years, and if there is evidence of a declining trend in the abundance of Argentine red shrimp. The drafting of the Contingency Plan is currently a topic of discussion at the Federal Fishery Council and at the Committee for the Follow-Up of the Argentine red shrimp fishery.

Considering changes in regulations and because of extensions in the location of high-yield concentrations, fishing areas have continued to evolve as shown in Figure 7. In particular, the San Jorge Gulf is closed to fishing as of 2017 and fishing areas in the Patagonian region have extended to 60° W.

The Province of Chubut has set rules for its provincial fishery that are aligned with, and complementary to, those taken by the Federal Fishery Council, and that contemplate the characteristics of the fraction of the population of the Argentine red shrimp stock that passes through provincial waters during its migration and reproduction process. Usually, fishing activity in the province starts around October/November and extends up to March/April.

The measures set by the Secretary of Fisheries of the Province of Chubut (SPCh) aim at securing the sustainability of the fishery by avoiding growth overfishing and recruitment overfishing, while maximizing yields. In the beginning, the criteria used for opening and closing the ZEPR were not explicit, but responded to direct observations of abundance, length-distributions and bycatch levels produced during short-term pre-season prospective campaigns and to the monitoring of the performance of the fishery by the provincial On-board Observer Program, and landing samplings at port. See for example, the considerations sections of SPCh Resolution N° 63/2018 that closes the 2017-2018 fishing season in provincial waters, and of SPCh Resolution N° 220/2018 that opens the 2018-2019 fishing season in provincial waters. In January 2019, by means of SPCh Resolution N° 6/2019, the Secretary established a harvest control ruling based on CPUE and bycatch thresholds to open and close the ZEPR. The thresholds used in Chubut's harvest control rule respond to the historical trends observed in the provincial fishery. The ZEPR is opened if (i) an exploratory fishing campaign conducted by authorized commercial vessels with support from INIDEP shows mean CPUE equal or greater than 350 kg/h; (ii) bycatch is not greater than 15% in relation to the total catch of the exploratory fishing campaign; and (iii) the proportion of L5 specimens or smaller in the catch is not greater than 5% of the total catch during the exploratory fishing campaign. Once the fishing zone is open, it remains so as long as (i) the CPUE of a control group of 15 vessels determined by the Secretary have a mean weekly CPUE equal or greater than 450 kg/h for two consecutive weeks; (ii) bycatch does not represent more than 15% of the total catch of the control group in a week; and (iii) the proportion of L5 specimens or smaller in the catch is not greater than 5% of the total catch of the control group in a week. If any of the conditions are not fulfilled, the fishery is closed. In addition, in August 2021, by means of SPCh Resolution N° 278/2021, the Secretary of Fisheries of the Province of Chubut set maximum limits for daily shrimp landings at Chubut's ports for the different fishing fleets. Coastal chilling vessels under 21 m length have maximum daily landing limits set at 32 t.

Spanjersberg *et al.* (2019) show the analysis performed by INIDEP's Outreach Office in Puerto Madryn about the compliance with the rule towards the end of the 2018/2019 fishing season in provincial waters. The report analysed catch and effort data, red shrimp length distribution, and bycatch data obtained during the periods: 3-12 March 2019 and 20-26 March 2019 for the fleet of less than 21 m length that has its seat at Port of Rawson. In this case, the authors concluded that the conditions for the closure of the fishery were not yet fulfilled and recommended a continuation in the monitoring of the fishery activity during the last week of March and the first week of April to determine if the conditions for the closure were then met. The fishery was closed on 17 April 2019, by means of the SPCh Resolution N° 75/2019. The opening of the 2019-2020 fishing season occurred by means of SPCh Resolution N° 305/2019. More recently, the Secretary of Fisheries of the Province of Chubut has issued technical reports related to the opening and closure of the ZEPR (Technical reports SPCh N° 1/2021, N° 2/2021, N° 3/2022 and N° 4/2022).

On the other hand, the closure of the San Jorge Gulf has been instituted and supported by the Provinces of Chubut and Santa Cruz to contribute to the coordinated management of the Argentine red shrimp stock, as shown in the CFP Act N° 14/2017, CFP Resolution N° 7/2018, and N° 22/2022, and aims at contributing to the protection of Argentine red shrimp's reproductive and recruitment processes.

d. Stock assessment

The National Institute for Fisheries Research and Development (*Instituto Nacional de Investigacion y Desarrollo Pesquero* - INIDEP) oversees assessing the Argentine red shrimp (*Pleoticus muelleri*) stock in Argentina (Federal Fishing Law N° 24,922). The law mandates that INIDEP plans and executes its scientific and technical activities with the provincial governments and with other relevant entities in relation to the assessment and conservation of marine living resources. In Chubut, the General Maritime Fishing Law mandates that the Secretary of Fisheries of the Province of Chubut conducts actions aimed at determining the status of fishing resources. The INIDEP conducts three research cruises each year, aimed at assessing the stock's abundance, its recruitment process and the evolution of the reproduction process. These research cruises take place in Summer (March), Winter (July) and Spring (November), and have lately been carried out with support from the private sector that in recent years has provided the fishing vessel (F/V Bogavante Segundo, owned by company Iberconsa de Argentina S.A., member of the MSC client group) to conduct the research campaigns in Summer and Spring. The main goal of the winter research campaigns is to analyse the growth and recruitment process and to detect and assess the cohort that would potentially be available during the next two fishing seasons after the campaign (De la Garza & Moriondo Danovaro, 2020d). The periodicity of the campaigns has been recently institutionalized by means of the CFP Resolution N° 9/2022. The INIDEP research campaigns encompass waters under provincial jurisdiction, including waters of the Province of Chubut and Santa Cruz, as well as waters under federal jurisdiction. The information gathered by INIDEP in provincial waters is shared with the Secretary of Fisheries of the Province of Chubut and with the Secretary of Fisheries

and Aquaculture of the Province of Santa Cruz (De la Garza & Moriondo Danovaro, 2020a; Moriondo Danovaro & De la Garza, 2021).

Given that *P. muelleri* is characterized by a relatively short life cycle, a high and variable growth rate, high reproductive potential, and an almost total replacement of the available biomass between two consecutive fishing seasons, it risks growth overfishing and recruitment overfishing (Bertuche *et al.*, 2000a, 2000b; De la Garza, 2006). Minimizing these risks and understanding the population dynamics guides the research and management of the Argentine red shrimp fishery. Argentine red shrimp is assessed as a single stock. Bertuche *et al.* (2000a, 2000b) explain that given that the population dynamics of the species includes processes that occur relatively rapidly and continuously, and that are uniformly variable in space and time (e.g. growth rates, recruitment, spawning), it is not possible to set spatial and temporal borders for these processes or to define functional units (real stock units or cohorts) within which certain population parameters would remain constant. Therefore, the authors maintain that the traditional concepts of stock unit or cohorts and their follow-up would lose ground as valid tools for analysis.

De Carli *et al.* (2012) proposes an alternative hypothesis regarding the existence of three stock sub-units from the ecological viewpoint. These three sub-units would be: one to the north of the San Jorge Gulf (45° S), one to the south of the San Jorge Gulf (47° S), and another in waters external to the Gulf, in the Rawson area (43° S). However, the authors recognize that the known difficulties to apply the classic concept of “stock” and “cohort” still apply, and state that alternative research methods will be needed to properly differentiate any such sub-stocks, including genetic analyses with molecular markers. Marcucci *et al.* (2017) analyse the sequences of mitochondrial DNA control region of eight sampling sites located along its geographic distribution, finding no significant genetic differences between the populations which would allow for stock differentiation. Gesto *et al.* (2020, 2024) carried out a genomic population study, employing ddRAD-seq with 1936 SNPs, which allowed for the identification of two genetic clusters, one from Brazil, and another from Argentina, whilst recognizing only one Argentine stock. Trucco *et al.* (2022) used ISSR markers in samples taken North of the San Jorge Gulf, South of the San Jorge Gulf and in the San Matias Gulf, to determine if there are genetic differences between the shrimp inhabiting the San Jorge Gulf –which sustains the fishery– and the shrimp inhabiting the San Matias Gulf. The ISSR markers showed a small but statistically significant genetic differentiation between the San Matias Gulf sample and the San Jorge Gulf samples. The results from this study support the notion that the Argentine red shrimp fishery is exploiting a single stock.

Consequently, INIDEP does not currently use mathematical models to assess the Argentine red shrimp stock. Instead, stock assessments consist on frequent direct observations of the stock’s abundance, and of the recruitment and reproductive processes through research campaigns, as shown in De la Garza & Moriondo Danovaro (2020a, 2020c, 2020d), in Pisani *et al.* (2022) and Moriondo Danovaro *et al.* (2022a, 2022c), as well as on monitoring the CPUE and the length-distribution throughout the fishing season in national waters by means of its On-board Observers Program. The monitoring of the CPUE and the length-distribution throughout the fishing season in provincial waters is carried out by the Provincial On-board Observer Program managed by the Secretary of Fisheries of the Province of Chubut.

Although mathematical models are not currently used as an assessment tool for Argentine red shrimp stock, attempts have been made to develop such models. Bertuche *et al.* (2000a) tried an analysis of the variation of CPUE as an indicator of abundance in the San Jorge Gulf and adjacent waters (between parallels 45° and 47° S, and between meridian 63° W and the coast) for the 1992-1999 period. A multiple regression model was used to identify which independent variables were useful to predict CPUE levels. The variables selected using this method were total standardized fishing effort, the sea surface temperature anomaly in the San Jorge Gulf, and the sea surface temperature anomaly in the Peruvian coast twelve months prior to the fishing season (ENSO phenomena). The selected variables jointly explained 45.35% of the variation in the observed CPUE during the 1992-1999 period. However, authors also stated that the climate-related variables seemed to have more evident effects in the Southern region of the San Jorge Gulf than in the Northern region, possibly because mobile closure zones were applied in the Southern region (jurisdiction of the Province of Santa Cruz) since 1995; while they were applied in the Northern region (jurisdiction of the Province of Chubut) since 1998. De Carli *et al.* (2012) state that, although this relation seemed applicable for decades 1980 and 1990, it was not so in the decade of 2000. It should be noted that as of 2017, the San Jorge Gulf is closed to fishing to protect the recruitment and reproductive processes of several species, including Argentine red shrimp.

Between 2017 and 2022, the spring and summer research campaigns included a hundred sampling stations between parallels 43° and 47° S and between meridian 64° W and the coast, carrying out a fishing haul at each sampling station. For each haul, INIDEP obtained the total catch and the species composition. It also sampled Argentine red shrimp in all

hauls where it is caught, determining the length distribution for females and males, as well as their maturing stage according to macroscopic observations. For research purposes, the study area was divided in smaller zones (Figure 10).

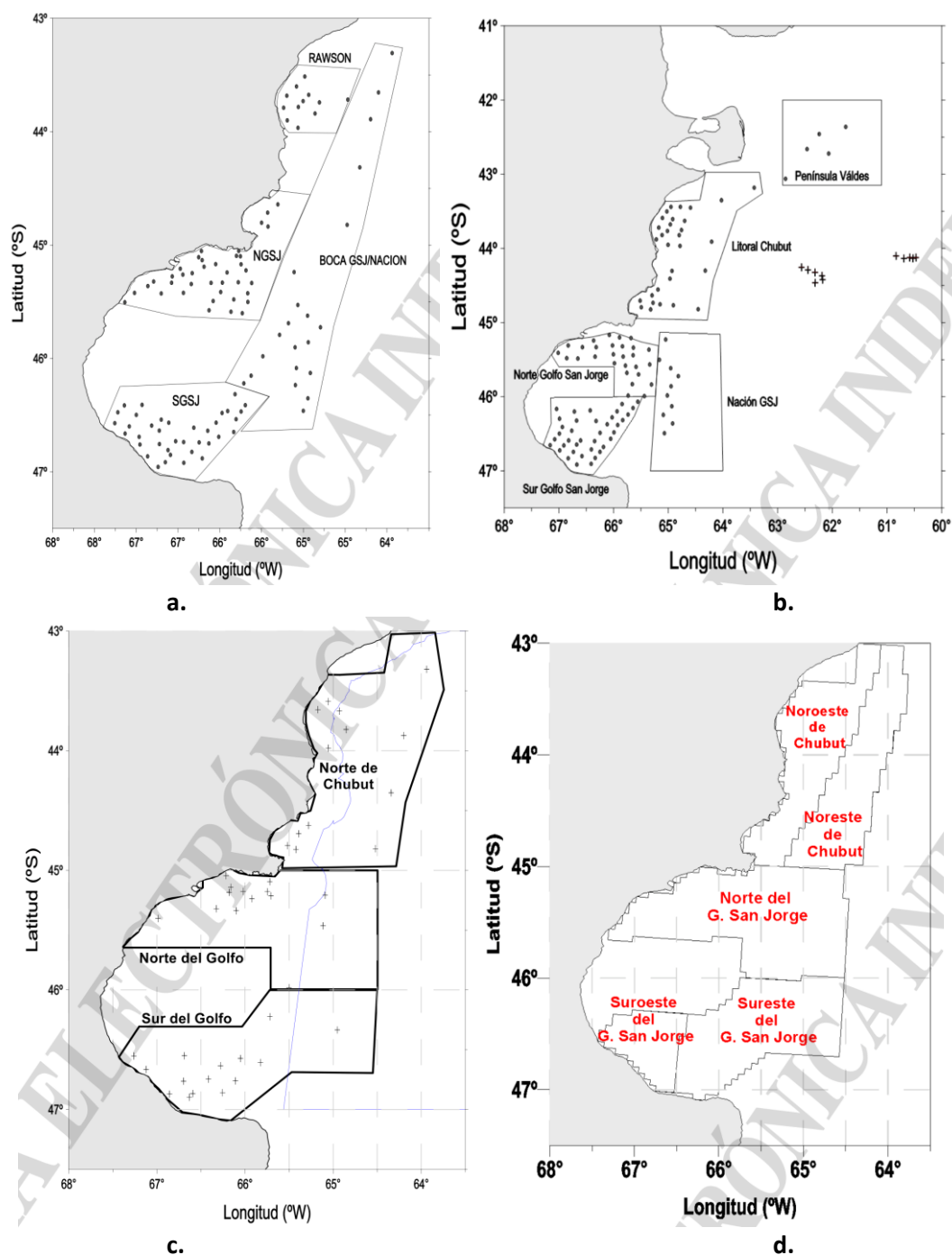


Fig. 10. Sampling stations during the Argentine red shrimp INIDEP research campaign. a. sampling zones in the Spring 2019 and Summer 2020 campaigns. b. sampling zones in the Winter 2020 campaign. c. sampling zones in the Spring 2021, Summer 2022 and Winter 2022 campaigns. d. sampling zones in the 2023 campaigns. SGSJ: South of the San Jorge Gulf, NGSJ: North of San Jorge Gulf, BOCA GSJ NACION: mouth of the San Jorge Gulf in federal waters, RAWSON: waters near the Port of Rawson in the Province of Chubut (Source: De la Garza & Moriondo Danovaro, 2020a, 2020c); Sur del Golfo: South of San Jorge Gulf, Norte del Golfo: North of San Jorge Gulf, Norte de Chubut: Chubut's North (De la Garza & Moriondo Danovaro 2020a, 2020c, 2020d; Moriondo Danovaro et al., 2022a, 2022c; Pisani et al., 2022; 2023).

Moriondo Danovaro *et al.* (2022b) examined at the results from the summer (March) research campaigns conducted between 2017 and 2022 to assess biomass and abundance levels, to analyse and describe the evolution of the status of the Argentine red shrimp population in recent years. The series includes year 2018 which constitutes a record for fishery landings. The INIDEP researchers showed that there is a positive linear relationship between abundance estimations made in March of a given year and landings between March and December of the same year. The analysis also showed that as

of 2020, the March estimations of biomass and abundance have been below the average for the period 2017-2022, which could signal that the Argentine red shrimp population might be in descent from the very high levels observed in 2017. The authors state that no relationships were found between parental stock levels and recruitment levels by analysing this short series of data.

i) Spring assessment results

While the results from the 2018 campaign were statistically lower than those from the 2017 campaign, no statistically significant differences were observed between the 2019 campaign and the 2018 campaign, even if the estimated values were lower (De la Garza & Moriondo Danovaro, 2020a). Also, it states that the length-distribution was very similar to that of year 2018, and therefore it was expected that at the beginning of the 2020 fishing seasons there would be an important fraction of specimens belonging to smaller commercial lengths. On the other hand, INIDEP research highlighted that there is a delay in the reproductive process and asserted that this behaviour is being observed and documented since the research cruise that took place in November 2017. They cautioned that this delay might have consequences in the growth rates and survival of the early life stages and advised that the start of the 2020 fishing season was conducted with caution to avoid growth overfishing.

The results from the 2021, spring campaign states that there were no statistically significant differences in biomass between research campaigns in November 2020 and 2021 (Pisani *et al.*, 2022). It also states that the length-distribution was very similar to that of November 2020, with a 3 mm increase in the modal cephalo-pereon length.

In 2022, the results of biomass and number of individuals were like those in the 2021 campaign, but with smaller lengths and a greater proportion of juveniles. This can be attributed to the fact that the 2022 campaign started 14 days prior to the beginning of the 2021 campaign (De la Garza *et al.*, 2023).

In 2023 the length-distribution analysis evidenced an increase in the proportion of individuals with cephalo-pereon lengths smaller than 24 mm and bigger than 40 mm. This increase may be explained by a delay in the start of the fishing season in Rawson. In this coastal sub-area, where coastal fishery is performed, bigger individuals are usually found. This is since these specimens would have been otherwise harvested earlier in the year. A greater proportion of specimens smaller than 24 mm in cephalo-pereon length is a consequence of a greater recruitment than in previous years (Pisani *et al.*, 2024a). 74% of the total catch were adults (larger than 30 mm in cephalo-pereon length), which resembles the results obtained in the 2021 and 2022 campaigns.

With the aim of assessing the abundance estimates with the lowest possible uncertainty, Pisani *et al.* (2023) compared the simple random sampling (MAS: *muestreo aleatorio simple*) and the stratified random sampling (MAE: *muestreo aleatorio estratificado*) methods. The estimation obtained through the MAS method showed lower variability for the season.

Figure 11 shows the biomass and number of individuals for the entire area under assessment during the 2019-2023 period. Even though an increase can be evidenced in 2023 when compared to 2022 (25%), a greater confidence interval with results in greater uncertainty in the estimations obtained. This increase could have been represented by the specimen concentrations detected in the Rawson area (Pisani *et al.*, 2024a).

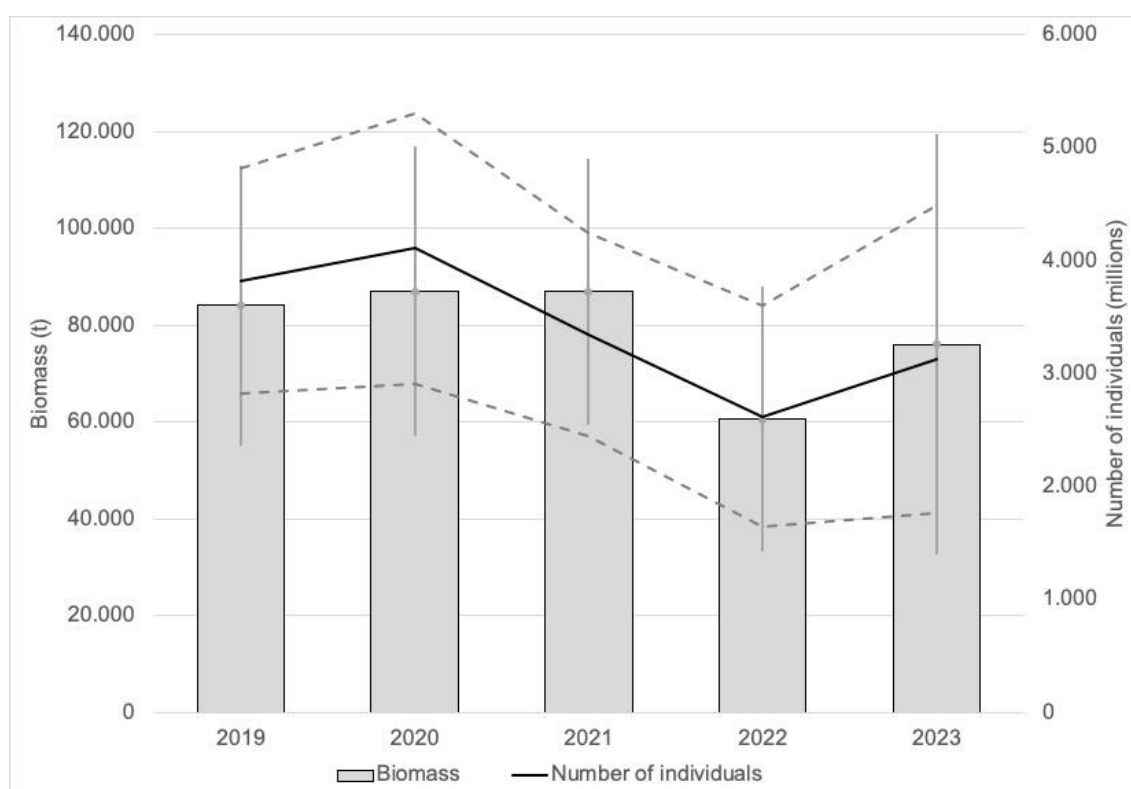


Fig. 11. Biomass (t) and number of individuals (millions), estimated mean values and 95% confidence intervals for 2019-2023 temporal series (Source: Pisani et al. 2024a)

ii) Summer assessment results

De la Garza & Moriondo Danovaro (2020c) stated that the Argentine red shrimp population showed a decrease in the abundance and available biomass estimations since 2018. It is predicted that, consequently, a decrease in landings for the 2020 fishing season could be expected south of parallel 42° S. They also stated that given the similarities in length-structures observed in 2019 and 2020, a high proportion of small shrimp would be expected at the beginning of the fishing season, south of parallel 45° S. It notes that the delay in the reproductive process continues to be monitored, and that recent studies have shown that, although female specimens have a good corporal status during reproduction, they have less energy reserves in their hepatopancreas and gonads.

In summer 2022, Moriondo Danovaro *et al.* (2022a) found that 64% of specimens in the study area were adults, a proportion slightly lower than that of March 2021 (67%) but higher than that of March 2020 (46%). Recruitment was also found to be higher than in 2021, in line with the increase in the reproductive stock observed during the November 2020 campaign. The anticipated closure of the fishery in 2021 –in line with scientific recommendations– and the reduction of fishing effort in 2020 seemed to have had a positive effect on reproductive females, as the percentage of mature females was like that of 2021 and higher than in previous years (Table 12). Also, the authors noted that there was an increase in the quality of energy reserves in the hepatopancreas and gonads of females in 2021 and stated that the quality of females collected in the March 2022 campaign would be analysed as well.

Table 12. Percentage of immature, mature and impregnated females in the summer campaigns for the 2017-2024 period. (Source: Pisani et al., 2024b)

	2017	2018	2019	2020	2021	2022	2023	2024
Inmaduras	83,45%	80,75%	85,30%	86,00%	67,00%	68,00%	79,70%	64,76%
Maduras	11,67%	15,79%	10,80%	11,00%	27,00%	28,00%	19,14%	35,24%
Impregnadas	4,88%	3,45%	4,00%	3,00%	6,00%	4,00%	1,15%	6,04%

More recently, to analyse and describe the evolution of the status of the Argentine red shrimp population in recent years, Moriondo Danovaro *et al.* (2022b) looked at the results from the summer (March) research campaigns conducted between 2017 and 2022 to assess biomass and abundance levels. The series includes year 2018 which constitutes a record

for fishery landings. There is a positive linear relationship between abundance estimations made in March of a given year and landings between March and December of that same year. The analysis also showed that as of 2020, the March estimations of biomass and abundance have been below the average for the 2017-2022 period, which could signal that the Argentine red shrimp populations might be in descent from the very high levels observed in 2017, but no relationships were found between parental stock levels and recruitment levels by analysing this short series of data.

The population structure evidenced in the 2023 campaign resembles that of 2022, with an important recruit group. The percentage of mature females was lower than that of 2021 and 2022, but higher than those of the 2017, 2018, 2019 and 2020 campaigns (Figure 12). The biomass and number of individual estimates were carried out the stratified random sample (MAE, *muestreo aleatorio estratificado*). For the entire area under assessment, 3,233 million individuals were estimated, showing a decline when compared to that of 2022 (23%), and of 2021 (33%). The total biomass estimated was of 72,905 t, which represents a decline of 30% compared to those estimated in 2021 and 2022. This decrease can be explained by a difference in the time of the surveys in the area under assessment with respect to previous campaigns. It is likely that the 2023 sampling in the area occurred after the species migration towards Plataforma, outside the area of assessment, in search for food and growing space (Pisani *et al.*, 2023).

The 2024 campaign results show a rise both in biomass and in number of individuals for the whole area under evaluation with respect to previous years. The total biomass estimated for the 2024 summer campaign was 171,391 t, showing an increase with respect to that of 2022 (64%) and 2021 (60%). Number of individuals has been estimated at 7,825 million specimens, which represents a considerable increase when compared to that of 2022 (86%) and 2021 (62%). The population structure for the entire area assessed showed a bimodal distribution, both for males and females. 63% of females presented a cephalo-pereon length larger than 31 mm; and a 35.2% were mature (Figure 12), representing a higher percentage than in previous years, which constitutes extra recruit input (Pisani *et al.*, 2024b).

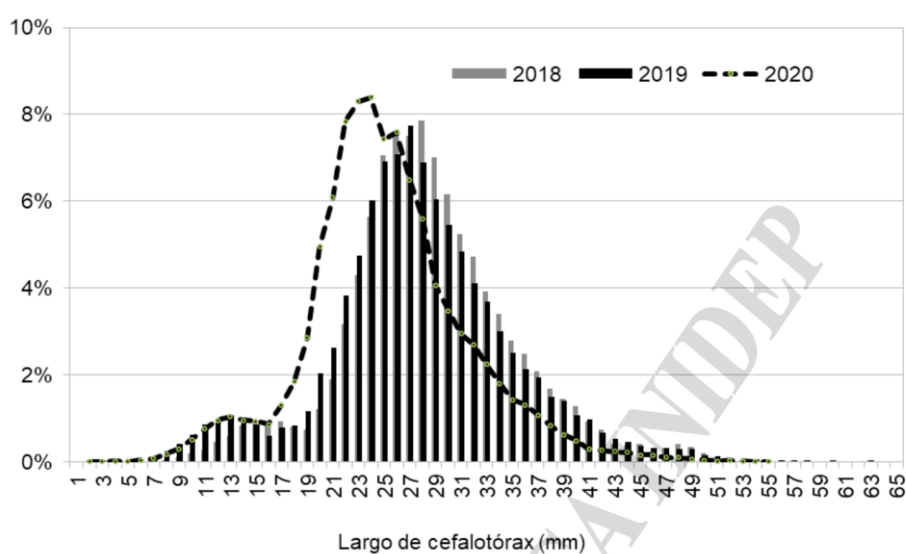


Fig. 12. Percentage distribution by cephalo-pereopod length in the total study area of the winter research campaigns in 2018, 2019 and 2020. Largo de cefalotorax: cephalo-pereopod length (Source: De la Garza & Moriondo Danovaro, 2020d).

iii) Winter research results

In Winter 2020, when analysing the geographic distribution, it was found that the main concentrations of adult shrimp (specimens larger than 30 mm in cephalo-pereon length) were in the northern coast of Chubut (including Rawson area and Camarones Bay), while 2019 these were in north of San Jorge Gulf and in federal waters outside the San Jorge Gulf (De la Garza & Moriondo Danovaro, 2020d). Regarding abundance, no statistically significant differences were observed between the 2019 and the 2020 campaigns; except in federal waters outside de San Jorge Gulf, where numbers were significantly larger in 2020. Regarding density (in metric tons/nm²), no statistically significant differences were observed between 2019 and 2020 in the study area, but a significant decrease was observed south of San Jorge Gulf (explained by the smaller size of the specimens), while a significant increase was observed in federal waters outside of San Jorge Gulf. Regarding the length distribution in the study area, the researchers state that shrimp found in the Winter 2020 campaign were smaller in size than those found in the 2019 campaign (3 mm smaller) and the 2018 campaign (4 mm smaller), and

indicate that the main cause would be the delay in the reproductive process that is being documented since 2017 (Figure 12).

De la Garza & Moriondo Danovaro (2020d) predicted that the fishing season in 2021 would have similar characteristics to those of the 2019 and the 2020 fishing seasons; therefore, it was expected that at the beginning of the 2021 fishing season there would be an important fraction of specimens belonging to smaller commercial lengths in federal waters within the closure zone for the protection of juveniles of Argentine hake (*Area de Veda para Juveniles de Merluza* - AVPJM). They also anticipated that, if confirmed in the Spring research campaign, changes to the management scheme might be needed to delay the opening of the fishery and to avoid areas where specimens belonging to commercial sizes L4 and lower are concentrated, to avoid growth overfishing.

In winter 2022 campaign, Moriondo Danovaro *et al.* (2022c) notes that the distribution by cephalo-pereon length found in the area in 2022 was like the 2020, with specimens of smaller size in comparison to 2021 (modal length decreased by 3 mm); while a larger percentage of recruits (between 19 and 29 mm in cephalo-pereon length) were observed in comparison to 2020 and 2021 (Figure 13). The authors state that this could be the result of two scenarios: that there were indeed more recruits because of the larger amount of impregnated females detected in the November 2021 research campaign; or that the impossibility to complete all the sampling stations at the North of the study area –where larger red shrimp are usually found– affected the percentage distribution, given the larger proportion of small red shrimp usually found south of San Jorge Gulf. Despite that uncertainty, the authors stated that the detection of large concentrations of juvenile specimens in waters under national jurisdiction during the 2022 fishing season could indicate that the increase in the estimations do correspond to biological aspects and not to methodological factors.

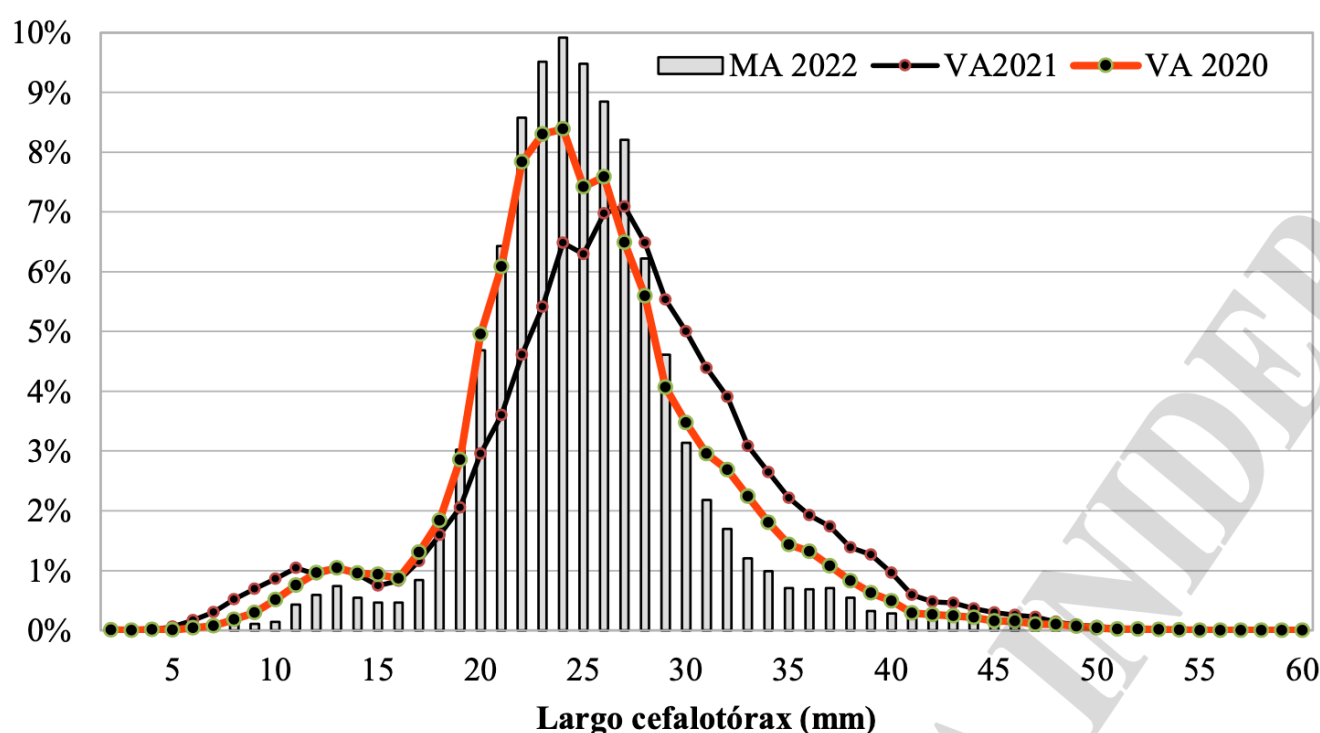


Fig. 13. Percentage distribution by cephalo-pereon length of the winter research campaigns in 2020, 2021 and 2022 (Source: Moriondo Danovaro *et al.*, 2022c).

Despite the efforts made in terms of the INIDEP research campaigns, there is no quantitative assessment of resource biomass. Therefore, there are no biological reference points and no quota or total allowable catch (TAC) allocation. Management of the fishery is based on exploratory fishing programs (herein termed test fishery) in various seasons to determine catch rate or CPUE of Argentine red shrimp, as well as bycatch of other species within each of the fishery areas.

e. Reference points and analysis of critical periods

Historically, there were no biological reference points set for the Argentine red shrimp stock. Bertuche *et al.* (2000b) maintains that, given that the population dynamics of the species includes processes that seem relatively continuous and

uniformly variable in space and time (e.g. growth rates, recruitment, spawning), and that the spatial and temporal variability of recruitment is transferred almost directly to the biomass available for fishing, it is not possible to establish a maximum sustainable yield (MSY) or similar with a solid biological foundation. The authors also indicated that it is not possible to define a limit for the spawning stock biomass where a certain level of recruitment could be ensured.

Nevertheless, a precautionary limit reference point expressed in catch-per-day (CPD) per vessel was used during a short while as a reference point to avoid recruitment overfishing in the late 1990's and early 2000's. According to Fischbach *et al.* (2006), CPD was defined as the relation between total declared landings per fishing trip and the declared fishing effort measured in fishing days and was considered by INIDEP as an indicator of abundance at the time; except in brief periods when the fleet operated at its maximum processing capacity and abundance was underestimated by the indicator. This precautionary limit might be considered as an early attempt to set a proxy for a point of recruitment impairment, because INIDEP considered that the fishery "could incur in recruitment overfishing '...when the average daily production per fishing vessel is below 350 kg of shrimp of an equivalent size of 60 pieces per kg or more, during 10 consecutive days, independent of the spatial distribution of fishing effort'" (Fischbach *et al.*, 2006). However, the fishery context in which this precautionary reference point was set by INIDEP no longer exists: first, the productivity of the stock has greatly increased in recent years, and second, the San Jorge Gulf has been closed to the fishery as of 2017.

As noted by Fischbach *et al.* (2006), the Argentine red shrimp fishery has had three crises during its history, in 1987, 1995 and 2005. In 2005, clear signs of recruitment overfishing were observed, brought about by an oversizing of fishing effort that took place during the 2000-2003 period. According to the INIDEP researchers, the stock did not show signs of overfishing in the 2000-2004 period, because particularly good recruitments sustained the fishery. Fischbach *et al.* (2006) recall that, in 2004, they pointed out that the recruitment that would sustain the 2005 fishing season was considerably smaller than those of previous years and cautioned that the overcapacity of the fishing fleet could generate recruitment overfishing in 2005. INIDEP continued to issue such alerts during the 2005 season, and in early 2006, it recommended: (a) a reduction in effort to the level present in year 2000, (b) the protection of the reproductive process in its complete distribution area during the Summer to favour the 2007 recruitment, and (c) the protection of the recruitment process to avoid growth overfishing and sustain yields in 2006 (Fischbach *et al.*, 2006). As a result of the management measures taken afterwards by fishing authorities plus favourable environmental conditions, the fishery recovered as of 2006 and has continued to show a constant increase in biomass and landings since then. It should be noted that fishing areas during the 2005 crisis included waters in the San Jorge Gulf (under the jurisdiction of Chubut and Santa Cruz) that are currently closed to fishing to protect the recruitment and reproductive processes.

In 2009, Fischbach *et al.* (2009), sought to select reference points that would help to identify critical periods in Argentine red shrimp's abundance. In their study, the CPD of a sub-set of 21 freezing fishing vessels that operated in the 1992-2008 period was analysed. A general linear model (Model 1) was explored, where the factors Year and Month were found to explain 72% and 21.4% of the observed variability, while the factor Vessel explained only 6.6%. A second model was explored by Fischbach *et al.* (2009), where the factor Year*Month explained 95.4% of the observed variability, while the factor Vessel explained 4.5%. Furthermore, Fischbach *et al.* (2009) constructed an abundance series related to reproductive biomass. This is, considering shrimps at the size of first maturity or larger, which are classified as commercial sizes L1, L2, L3 and L4 (10 to 60 shrimps/kg). This daily yield indicator is represented as CPD10/60. Fischbach *et al.* (2009) estimated that the average CPD10/60 for the period of lowest values was 207.4 kg/day per vessel, and suggested that this was the reference point that, if maintained for several consecutive months, would indicate a critical situation that should trigger rapid management responses to avoid a failure in recruitment. Fischbach *et al.* (2009) highlighted that this reference point would only remain valid if the group of vessels used as control group was large enough and stable enough to be representative, and if vessels were not subject to significant restrictions in movement within the distribution area. Once again, it should be noted that the context in which the fishery operated at that time is completely different than the one in which the fishery operates in the present, including the fact that today's abundance levels allow for CPUEs in the order of 3,000 kg/h.

As the context of the fishery evolved and the resource showed a significant and sustained increase in its abundance levels, INIDEP continued to conduct research aimed at setting biological reference points. For example, the estimation of growth parameters in relation to environmental conditions (De la Garza, 2006); or the study of the relation of factors influencing the abundance of Argentine red shrimp eggs (Moriondo Danovaro & Cucchi Colleoni, 2012). As stated in De la Garza *et al.* (2017), although environmental changes have a marked effect on larvae survival, recent studies have shown that the parental stock size would also play a significant role in future recruitments. By analysing the series of data from research

campaigns conducted by INIDEP between 2004 and 2011 in the San Jorge Gulf, Moriondo Danovaro & Cucchi Colleoni (2012) observed that eggs mean density was related to bottom water temperature and year. The authors suggested that the prediction capacity of the variable “year” might be related to the effect that fishing removals have on the available spawning biomass. It should be noted, however, that it was not within the scope of the study to explore a relation between spawning biomass and recruitment or egg density. More recently, INIDEP conducted the standardization of the CPUE series for the 2009-2018 period to be used as an abundance index in the exploration of biological reference points appropriate for the current context of the fishery (De la Garza & Moriondo Danovaro, 2020b; 2021; Moriondo Danovaro *et al.*, 2022b).

De la Garza & Moriondo Danovaro (2021) discuss biological reference limit points for the management of Argentine red shrimp. First, the authors acknowledge that given the peculiarities of the population dynamics of the species and its fishery, traditional management tools based on maximum sustainable yield (MSY) or fishing mortality associated to the maximum sustainable yield (FMSY) are not efficient and would result in errors that could have negative implications in stock and fishery management. Second, they discuss three biological reference limit points that could be used to manage Argentine red shrimp in waters under national jurisdiction:

-Monthly CPUE limits. These monthly limit reference points were calculated using the series of standardized CPUE for the 2009-2018 period and the average monthly CPUEs of monitored hauls during the same period (Figure 14). The CPUE limit for each month was calculated as the average between the minimum value of the standardized CPUE and the minimum observed CPUE (Figure 15). The CPUE limits are to be used to avoid overfishing of the stock.

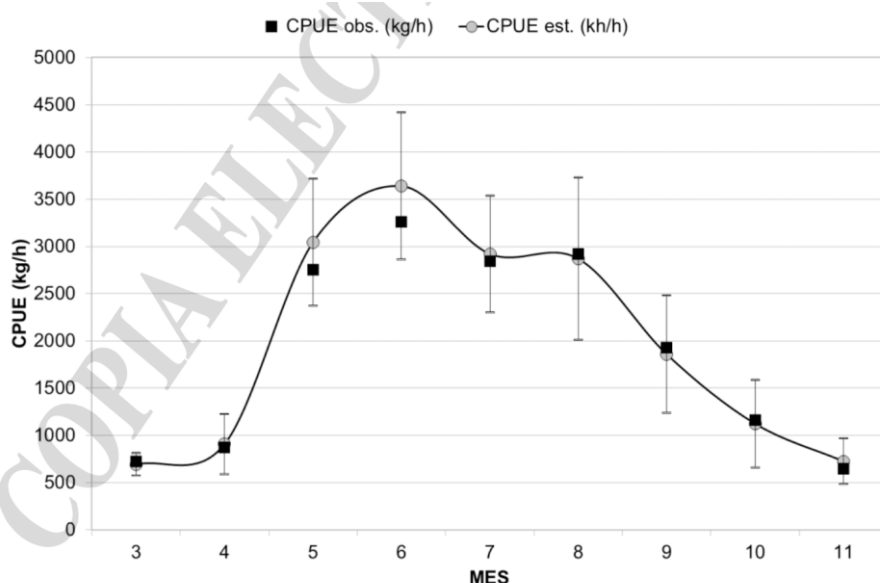


Fig. 14. Observed monthly CPUE (CPUE obs.) and Standardized monthly CPUE (CPUE est.) for the freezing fleet (Source: De la Garza & Moriondo Danovaro, 2020b).

Mes	CPUE (kg/h) referencia límite
Marzo	453,32
Abril	443,46
Mayo	1.939,23
Junio	2.164,95
Julio	1.557,13
Agosto	1.343,77
Septiembre	835,60
Octubre	400,51
Noviembre	316,14

Fig. 15. Monthly CPUE limits (Source: De la Garza & Moriondo Danovaro, 2021).

-Minimum average size within the catch. To avoid growth overfishing, researchers state that juvenile red shrimp should not be present in catches by more than 20% during a stipulated period. Juvenile specimens are included in commercial size categories L4, L5 and L6. Figure 16 shows the selectivity curve of the fishing gear.

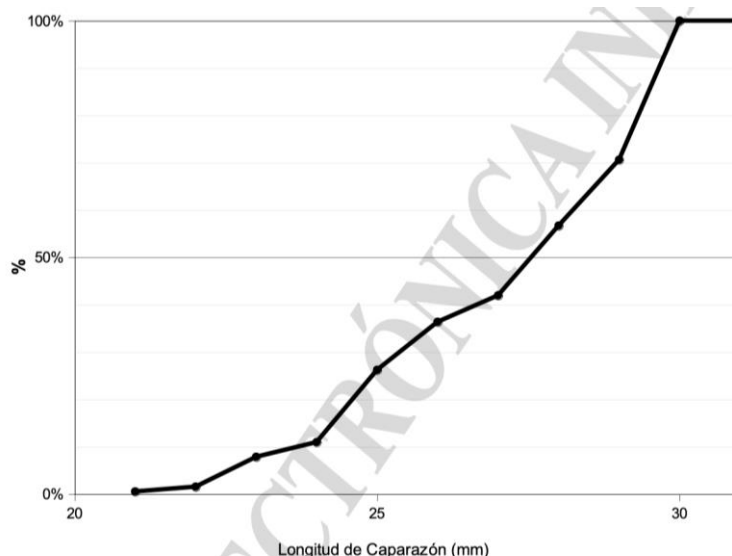


Fig. 16. Probability of catch in relation to cephalothorax length for the authorized fishing gear. (Source: De la Garza & Moriondo Danovaro, 2021).

-Maximum percentage of mature and impregnated females within the catch. To avoid recruitment overfishing, mature and impregnated females should not be present in catches by more than 35% during a stipulated period. This percentage has been set attending to experience.

Regarding target reference points, Moriondo Danovaro *et al.* (2022b) analysed the evolution of the Argentine red shrimp population during the 2017-2022 period, using the new series of data collected by means of the winter, summer and spring campaigns. Although no relation was found between the reproductive stock levels and recruitment levels in the 2017-2022 series, the scientists state that the accumulated knowledge in this fishery signals that the Argentine red shrimp abundance levels estimated in March (late Summer) each year should not be lower than 60% of the average abundance of the 2017-2022 period to sustain landings and yields fluctuating around 200,000 metric tons. If that would be the case, management measures should be triggered to return to (or to surpass) that average. In this way, a biological target reference point for the Argentine red shrimp fishery has been selected by INIDEP.

In 2020, De la Garza & Moriondo Danovaro (2020b) completed a standardization of CPUE for the 2009-2018 period to use as an abundance index, as part of a process geared towards setting reference points for the Argentine red shrimp stock. The analysis considered 46,471 hauls in the 2009-2018 period monitored on-board freezing vessels (Figure 17). This fleet was chosen because it is the one that had contributed the most to landings in the history of the fishery and, consequently, the one with the better observers' coverage. The fishery entering MSC assessment is operated by both freezing vessels and the chilling fleet fishing in waters under federal jurisdiction.

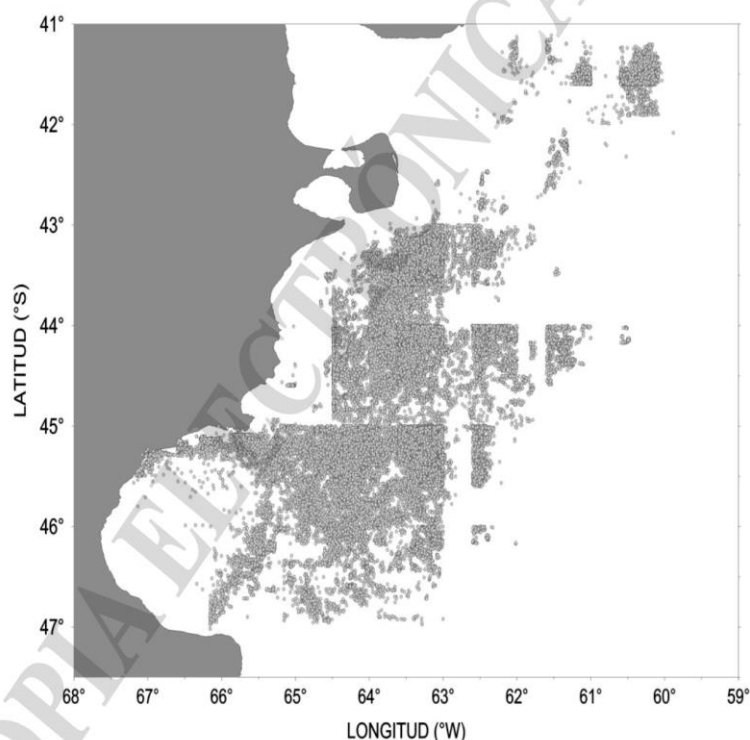


Fig. 17. Spatial distribution of the hauls monitored in the 2009-2018 period by INIDEP on-board the freezing fleet (Source: De la Garza & Moriondo Danovaro, 2020b).

Figure 18 shows the trend in annual CPUE (kg/h) for the 2009-2018 period. As described by De la Garza & Moriondo Danovaro (2020b), between 2009 and 2015 there was a sustained increase in annual CPUE, except for year 2013. CPUE is considered stable as of 2016, when participation in landings coming from other fleets (chilling vessels and chilling coastal vessels) increased in platform waters.

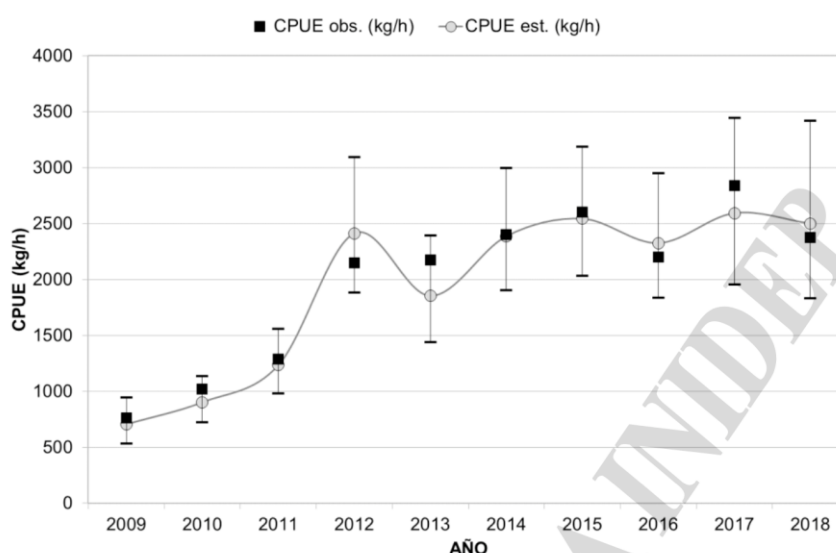


Fig. 18. Observed annual CPUE (CPUE obs.) and Standardized annual CPUE (CPUE est.) for the freezing fleet (Source: De la Garza & Moriondo Danovaro, 2020b).

Figure 19 shows the evolution of the standardized monthly CPUE (kilograms per trawling hour) for the 2009-2018 period, along with its 95% confidence intervals. As described by De la Garza & Moriondo Danovaro (2020b), the standardized values keep the trends and volumes and show a good fit to the observed values, showing that the selected model is adequate. On the other hand, INIDEP researchers highlight that, to contemplate all fishing fleets in the analysis, it would need to increase the coverage of On-board Observers Program in the chilling and chilling coastal fleets operating throughout the year, especially during the winter season when in average 80% of landings occur. They also highlight that

they do have information on yields of the chilling coastal fleet operating from the Port of Rawson in waters under jurisdiction of Chubut in spring and summer, but they lack historical data and current data regarding fishing operations conducted by the chilling coastal fleet in platform waters during the winter.

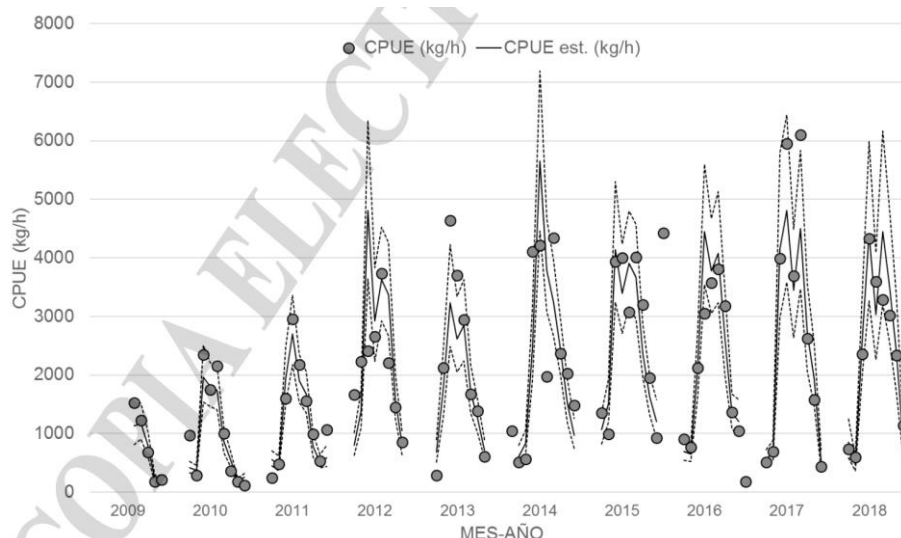


Fig. 19. Observed monthly CPUE (CPUE) and Standardized monthly CPUE (CPUE est.) for the freezing fleet per year in the 2009-2018 period (Source: De la Garza & Moriondo Danovaro, 2020b).

De la Garza & Moriondo Danovaro (2020b) stated that the proposed model explained between 81% and 95% of the variability observed, with month and year being the more consequential variables, in that order. They explain that the standardized monthly values show the impact that fishing has on the available biomass during the progress of fishing seasons. They also point out that, even as the increase in yields incentivized an increase in the number of vessels operating in the fishery as of 2006, no recruitment overfishing or growth overfishing had occurred. They noted that there had been an increase in reproductive biomass and in recruitments brought about by favourable environmental conditions and highlighted that a decrease in annual CPUE had been observed as of 2015 along with changes in the length-composition, delays in the reproductive process and a slight decrease in the estimated number of individuals. However, INIDEP researchers stated that these changes might be explained by changes in environmental conditions and ought to be monitored, although they do not consider them to be especially worrisome yet. Figure 20 shows the evolution of biomass for the 2017-2021 period as estimated in the summer campaigns.

Argentine red shrimp is a highly dynamic species, evidencing significant changes in its economically profitable distributions, or its reproductive strategy. The results from the last years, in term of yield, applied fishing efforts and research campaigns as from 2017, support the conclusion that a maximum extraction limit has been reached, with a fishery that could amount to about 200,000 t if a precautionary management is applied (Moriondo Danovaro & De la Garza, 2020).

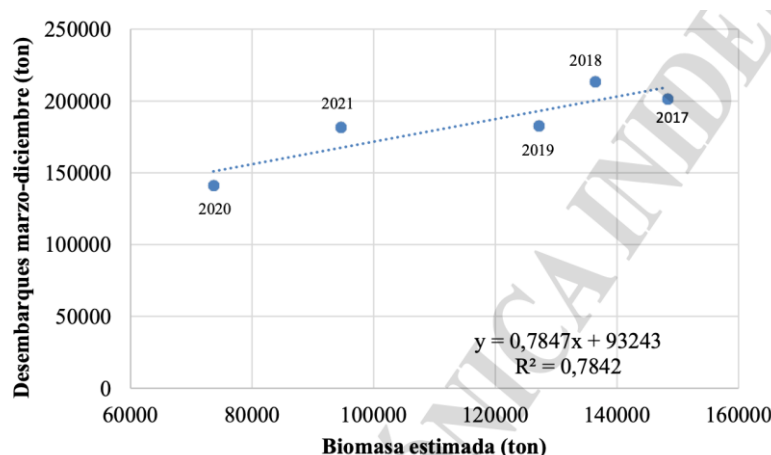


Fig. 20. Estimated biomass for the 2017-2021 period (Source: Moriondo Danovaro et al., 2022b).

10.1.2 Catch data

Figure 6 shows the evolution of annual historical Argentine red shrimp landings since 1950 up to date (Sanchez *et al.*, 2012; Navarro *et al.*, 2019, 2022; SSPyA, 2024).

Figure 21 shows the evolution of annual Argentine red shrimp landings (1998-2020) and the fishing effort in number of fishing vessels of each fleet type, differentiating the contribution of the offshore vessels in the fishery.

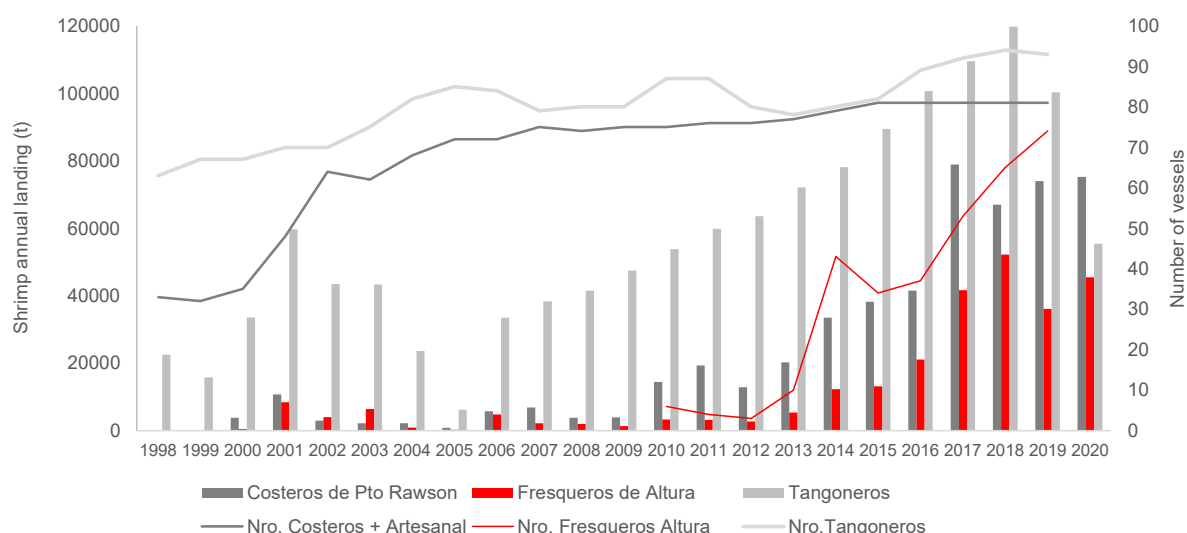


Fig. 21. Evolution of Argentine red shrimp fishery landings by fleet type and the number of vessels per fleet. (Source: Gongora *et al.*, 2020).

Table 13. Total Allowable Catch (TAC) and catch data.

TAC	Year	N/A	Amount	N/A
UoA share of TAC	Year	N/A	Amount	N/A
Total catch by UoC (most recent)	Year	2024	Amount	139,222.30 t
Total catch by UoC (second most recent)	Year	2023	Amount	116,462.00 t

10.1.3 Principle 1 species

The Argentine red shrimp (*Pleoticus muelleri*) offshore fishery occurs in waters under the jurisdiction of the federal government of Argentina and excludes waters under provincial jurisdiction. Mainly in the location of the closure area for the protection of Argentine hake (AVPJM) as stated in the CFP Resolutions N° 26/2009 and N° 9/2014, between 42° and 48° S, from the provincial jurisdiction line (set up at 12 nm from the coast) to 60° W, between March/April to October/November (winter). The fishery consists of chilling and freezing vessels exclusively dedicated to catch Argentine red shrimp, known as outrigger trawlers or shrimpers. These vessels operate simultaneously with two bottom trawling nets, one by each outrigger, with a 45-50 mm net stretched mesh and a vertical opening around 1.5 m and operate in the fishery under management rules contained in the CFP Resolutions N° 7/2018, N° 9/2022 and N° 22/2022.

10.1.4 Principle 1 Performance Indicator scores and rationales

PI 1.1.1 – Stock status

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue		SG 60	SG 80	SG 100
a	Stock status relative to recruitment impairment			
	Guide post	It is likely that the stock is above the point where recruitment would be impaired (PRI).	It is highly likely that the stock is above the PRI.	There is a high degree of certainty that the stock is above the PRI.
	Met?	RBF	RBF	RBF
Rationale				

As it has been mentioned in P1 background (e.g. e. **Reference points and analysis of critical periods**), there is no quantitative assessment of PRI for this UoA. No validated proxy indicators (such as CPUE) exist that are in exact relationship with the MSY. Even though the CPUE, among other ratio, could be considered as a reference point of the proxy indicator type, there are no relative biomass values to these reference points, which would allow establish a current stock status relative to PRI or MSY. So, it is appropriate to evaluate stock status using the Risk Based Framework. This involves applying both a Consequence Analysis (CA) as well as a Productivity Susceptibility analysis (PSA). The RBF exercise is available in the section **11.8. Risk-Based Framework outputs**.

Therefore, as an RBF has been used. This SI was not assessed using the Default Assessment Tree.

b	Stock status in relation to achievement of Maximum Sustainable Yield (MSY)			
	Guide post		The stock is at or fluctuating around a level consistent with MSY.	There is a high degree of certainty that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.
	Met?		RBF	RBF
Rationale				

See rationale provided in the SI a).

Stock status relative to reference points			
	Type of reference point	Value of reference point	Current stock status relative to reference point
Reference point used in scoring stock relative to PRI (SIa)	N/A	N/A	N/A
Reference point used in scoring stock relative to MSY (SIb)	N/A	N/A	N/A
Overall Performance Indicator score			RBF= 86
Condition number (if relevant)			N/A

PI 1.1.2 – Stock rebuilding

PI 1.1.2		Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe		
Scoring Issue		SG 60	SG 80	SG 100
a	Rebuilding timeframes			
	Guide post	A rebuilding timeframe is specified for the stock that is the shorter of 20 years or 2 times its generation time . For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.		The shortest practicable rebuilding timeframe is specified which does not exceed one generation time for the stock.
	Met?	Not scored		Not scored
Rationale				

According to the MSC Fisheries Standard v2.01 – SA2.3.1, teams shall only score this PI when Stock Status PI 1.1.1 does not achieve an 80 score. Therefore, the team did not score this PI, due the overall PI 1.1.1 score is 80.

b	Rebuilding evaluation			
	Guide post	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe.	There is evidence that the rebuilding strategies are rebuilding stocks, or it is likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe .	There is strong evidence that the rebuilding strategies are rebuilding stocks, or it is highly likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe .
	Met?	Not scored	Not scored	Not scored
Rationale				

According to the MSC Fisheries Standard v2.01 – SA2.3.1, teams shall only score this PI when Stock Status PI 1.1.1 does not achieve an 80 score. Therefore, the team did not score this PI, due the overall PI 1.1.1 score is 80.

Overall Performance Indicator score	Not scored
Condition number (if relevant)	N/A

PI 1.2.1 – Harvest strategy

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring Issue		SG 60	SG 80	SG 100
a	Harvest strategy design			
	Guide post	The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1 SG80.
	Met?	Yes	Yes	Yes
Rationale				

As it has been previously mentioned, the peculiarities of Argentine red shrimp population dynamic and that of its exploitation lead one to conclude that employing traditional management tools based on maximum sustainable yield (BMSY) or fishing mortality associated to the maximum sustainable yield (FMSY) are not efficient and would result in errors that could have a negative implications in the stock and fishery management (De la Garza & Moriondo Danovaro, 2021).

The first fishery management measures (SAGyP Resolution N° 1113/1988 and SAGPyA Resolution N° 153/2002) established restrictions on vessels and fishing gears authorized for the capture of the shrimp species, setting an annual limit per vessel, minimum body size, and a maximum percentage of individuals below the minimum size. In addition, it established that chilling fleets should stow the product in the hold in opened plastic bins of up to 15 kg, while freezing

vessels should process and classify the product according to size and pack it in 2 kg boxes. Moreover, a dynamic and adaptative fishery management was developed, based on permanent monitoring of the resource behaviour and on the available scientific data, taking into consideration the advice provided in real time by the INIDEP for the closure or modification of the authorized fishing area.

The three biological reference limit points used to manage Argentine red shrimp in waters under national jurisdiction:

(a) CPUE limit used to avoid overfishing of stock; in this regard, it has been suggested that where the calculated CPUE average values are lower than the reference limit points, the enforcement authority must close the fishery zone, and were it to remain open, it is recommended that the new CPUE average values calculated never reach levels lower than 60% of the stipulated reference limit points (De la Garza & Moriondo Danovaro, 2021);

(b) limit catch juvenile specimens to avoid growth overfishing; the CFP Resolution N° 7/2018 establishes a maximum catch of smaller than 50 unit/kg at 20% of the total weight processed, and the CFP Act N° 19/2020 establishes that, based on the information provided by onboard observers, fishery zones must be closed if the amount of L4, L5 or L6 sizes reaches 20% or more during 4 consecutive days. This indicator expressed in a commercial category is based on a catch probability curve depending on the shrimp size and the authorized mesh size of 45 mm (Figure 16; De la Garza & Fischbach, 2009); and,

c) limit catch of mature and impregnated females to avoid recruitment overfishing; establishes that the amount of mature and impregnated females present in the catch must not exceed 35% of the total catch (De la Garza & Moriondo Danovaro, 2021).

The harvest strategy implemented by the Federal Fishery Council in federal waters (CFP Resolutions N° 7/2018, N° 4/2019 and N° 9/2022). In Chubut province jurisdiction the measures set by the SPCh aim at securing the sustainability of the fishery by avoiding growth overfishing and recruitment overfishing, while maximizing yields. Most recently, the SPCh established reference limit points for the management of the fishery through SPCh Resolution N° 118/2024. **Therefore, the SG60 level is met.**

As it has been mentioned prior, Argentine red shrimp fishery has been completely restricted in the San Jorge Gulf, which falls under both Santa Cruz and Chubut's provincial jurisdiction, leading to a decrease in the unwanted capture of reproductive females and individuals of commercial categories L4 or smaller. This closure is instituted by the mentioned provinces as a contribution to the coordinated management of the Argentine red shrimp stock, as shown in the CFP Act N° 14/2017, and CFP Resolutions N° 7/2018 and N° 9/2022.

The vessels operating the shrimp fishery must hold a valid fishing licence and authorisation to catch shrimp, have a length overall of up to 40 metres, and a maximum engine power of 2,000 HP. They must also operate with outriggers and shrimp trawl nets with a maximum 45 mm net stretched mesh and a vertical opening around 1.5 m. In addition, fishing activities should be carried out between 7:00 and 19:00, trawl time shall not exceed one hour per haul, and the trawl speed shall not exceed 3.5 knots. Chilling vessels shall have a 72-hour operating limit and store the catch in boxes of up to 17 kg of product (CFP Resolutions N° 7/2018 and N° 9/2022).

Opening and closure strategies of the different fishing areas applied using the reference point limits have shown results in the stock status as from 2006 to date both for fishery in waters under national and provincial jurisdiction (see Figure 6). **Therefore, the SG80 level is met.**

The Federal Fisheries Council has established that the annual catch limit per vessel will increase as total catches of the species exceed the average value of the last ten years (CFP Resolutions N° 12/2015, N° 11/2016, N° 7/2017, N° 7/2018 and N° 9/2022).

The CFP Resolution N° 7/2018 also calls for the design of a Contingency Plan in case catches are reduced to 50% or more in relation to the average value of the last five years, and if there is evidence of a declining trend in the abundance of Argentine red shrimp. The drafting of the Contingency Plan is currently a topic of discussion at the Federal Fishery Council and at the Committee for the Follow-Up of the Argentine red shrimp fishery.

The INIDEP carries out three scientific research campaigns on the species and incidental capture with the aim of assessing the resources situation and distribution, in accordance with three guidelines: 1) March campaign: assessing the reproductive capacity and at obtaining information on the season to begin; 2) July campaign: analysing the growth and recruitment process and to detect and assessing the cohort that would potentially be available during the next two fishing

seasons after the campaign; and 3) November campaign: evaluating the reproductive process and the effects that the fishery has on the shrimp resource at the end of the season (CFP Resolution N° 9/2022).

With the aim of assessing the potential opening of the fishing zone, the CFP requests the INIDEP a scientific survey of commercial vessels of the outrigger fleet to verify the presence of shrimp concentrations. Shrimp fishery in the fishing closure area is carried out through a dynamic opening and closure of the different fishing areas, based on the evolution of parameters such as the catch of undersized or non-commercial length, females in reproductive or spawning condition, and by-catch of other species. The vessels must have an on-board inspector or an INIDEP observer and are required to report their geolocation through a satellite location system with 15-minute intervals and an electronic fishing catch report.

The biological reference limit points (a, b and c) have been specifically defined designed for Argentine shrimp fishery and directly contribute to the catch strategy being responsive to changes in the population. The results during the last fishing seasons, the applied fishing effort and the result of the research campaigns indicate that a maximum capture limit has been reached. Considering this, it could be stated that sustainable levels for Argentine red shrimp fishery would fluctuate around the 200,000 t, if it is administered in a precautionary manner (Moriendo Danovaro *et al.*, 2022b; Moriando Danovaro & De la Garza, 2020). **Therefore, the SG100 level is met.**

Harvest strategy evaluation				
b	Guide post	The harvest strategy is likely to work based on prior experience or plausible argument.	The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives including being able to maintain stocks at target levels.
	Met?	Yes	Yes	No
Rationale				

The harvest strategy is likely to work based on experience to date, in that fishery performance (CPUE) has remained at a high level while annual catch has increased. **Therefore, the SG60 level is met.**

Evidence has been provided to show that this is due to effectiveness of the harvest strategy. As it has been mentioned, Moriando Danovaro *et al.* (2022a) found recruitment in summer 2022 was higher than in 2021, in line with the increase in the reproductive stock observed during the November 2020. The anticipated closure of the fishery in 2021 and the reduction of fishing effort in 2020 seemed to have had a positive effect on reproductive females, since the percentage of mature females was like that of 2021 and higher than in previous years (see Table 11). **Therefore, the SG80 level is met.**

The performance of harvest strategy no has been fully evaluated. **Therefore, SG100 level is no met.**

Harvest strategy monitoring				
c	Guide post	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	Yes		
Rationale				

The INIDEP conducts three research campaigns each year in the UoA, aimed at assessing the stock's abundance, its recruitment process and the evolution of the reproduction process; carried out through the permanent monitoring of INIDEP's On-board Observer Program, to evaluate and adjust the harvest strategy. Monitoring is in place during the fishery that results in the closure of fishery if the indexes exceed the values of the reference limit points stated in the CFP Resolutions N° 7/2018 and N° 9/2022. This aims at limiting the catch of juvenile specimens to avoid growth overfishing, curtailing the catch of mature and impregnated females to avoid recruitment overfishing, and reducing the hake by catch. This is expected to protect the stock against excessive exploitation. **Therefore, the SG60 level is met.**

Harvest strategy review				
d	Guide post			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			Yes

Rationale

INIDEP researchers and the shrimp fishery analysis and assessment commission, created through the SAGyP Resolution N° 224/2003, periodically review the harvest strategy and propose improvements as necessary. The Federal Fisheries Council carries out workshops and meetings, in which said improvement proposals are treated and necessary adjustments are made to the present regulations in place (CFP Resolutions N° 4/2019, N° 9/2022, N° 22/2022, N° 23/2022 and N° 26/2022 that modify CFP Resolution N° 7/2018). New reviews and improvements are developed as well, such as the creation of a bycatch Commission to plan, design and test selectivity devices that prove efficient for the fishery (CFP Act N° 8/2019).

The Article 8° of the SPCh Resolution N° 118/2024 creates the Follow-up Monitoring Commission for the Argentine red shrimp fishery to function within the provincial Secretary of Fisheries. It is composed by eight (8) members, four (4) representing government agencies, three members form the private sector, and one representing academia. This Commission has the nature of advisory body, to meet at least once every quarter, and should produce a minute of the issues covered to be referred to the enforcement authority of the Province of Chubut. Every three years, at most, the Commission should debate and advise the enforcement authority on the efficacy of the management measures undertaken to meet the objectives set, with the aim of introducing improvements to said measures. **Therefore, the SG100 level is met.**

e	Shark finning			
	Guide post	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Not scored	Not scored	Not scored
Rationale				

Sharks are not the target species, so this issue is not scored.

f	Review of alternative measures			
	Guide post	There has been a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.	There is a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate.
	Met?	Yes	Yes	No
Rationale				

The SAGPyA Resolution N° 153/2002 established the use of a net with a minimum mesh size of 45 mm, and that the catch of Argentine red shrimp smaller than commercial categories L4 is not to exceed 20% of the total catch weight, as measures to minimise UoA-related mortality of unwanted catch of the target stock. Before 2006, the Argentine red shrimp fishery was mainly conducted within the San Jorge Gulf and adjacent national waters, without considering the percentage of catches of sizes less than 30 mm in cephalo-pereon length as an indicator for the closure of the fishing area.

In 2005, clear signs of recruitment overfishing were observed, brought about by an oversizing of fishing effort that took place during the 2000-2003 period. INIDEP researchers issued alerts on the sustainability of the species, and a possible recruitment overfishing in 2005 based on the overcapacity of the fishing fleet. It continued to issue such alerts during the 2005 season, and in early 2006, it recommended: (a) a reduction in effort to the level present in year 2000, (b) the protection of the reproductive process in its complete distribution area during the Summer to favour the 2007 recruitment, and (c) the protection of the recruitment process to avoid growth overfishing and sustain yields in 2006 (Fischbach *et al.*, 2006). As a result of the management measures taken afterwards by fishing authorities plus favourable environmental conditions, the fishery recovered as of 2006 and has continued to show a constant increase in biomass and landings since then. It should be noted that fishing areas during the 2005 crisis included waters in the San Jorge Gulf (under the jurisdiction of Chubut and Santa Cruz) that are currently closed to fishing to protect the recruitment and reproductive processes.

This constitutes an instance of review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock. **Therefore, the SG60 level is met.**

Measures have been reviewed to minimize UoA related mortality of unwanted catch of the target stock that resulted in new regulations in 2018, 2019 and 2022. These include a minimum mesh size of 45 mm in the cod-end, and a regulation that states that the catch of small Argentine red shrimp (smaller than 30 mm CL) is not to exceed 5% of the total catch weight.

Furthermore, as mentioned, a total ban on shrimp fishing has been established in the San Jorge Gulf since 2017, under the jurisdiction of the provinces of Chubut and Santa Cruz, reducing the unwanted capture of reproducing females, commercial size L4 individuals and juveniles.

As it has been mentioned prior, Argentine red shrimp fishery has been completely restricted in the San Jorge Gulf, which falls under both Santa Cruz and Chubut's provincial jurisdiction, leading to a decrease in the unwanted capture of reproductive females and individuals of commercial categories L4 or smaller. This closure is instituted by the mentioned provinces as a contribution to the coordinated management of the Argentine red shrimp stock, as shown in the CFP Act N° 14/2017, and CFP Resolutions N° 7/2018 and N° 22/2022.

The CFP Resolution N° 7/2018 also calls for the design of a Contingency Plan in case catches are reduced to 50% or more in relation to the average value of the last five years, and if there is evidence of a declining trend in the abundance of Argentine red shrimp. The drafting of the Contingency Plan is currently a topic of discussion at the Federal Fishery Council and at the Committee for the Follow-Up of the Argentine red shrimp fishery.

Considering changes in regulations and because of extensions in the location of high-yield concentrations, fishing areas have continued to evolve as shown in Figure 7. In particular, the San Jorge Gulf is closed to fishing as of 2017 and fishing areas in the Patagonian region have extended to 60° W, increasing the percentage of L1 and L2 commercial categories in the captures. **Therefore, the SG80 level is met.**

Since the review of alternative measures to minimise the UoA-related mortality of unwanted catch of the target stock is not conducted biennially, **the SG100 level is not met.**

Overall Performance Indicator score	90
Condition number (if relevant)	N/A

PI 1.2.2 – Harvest control rules and tools

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
Scoring Issue		SG 60	SG 80	SG 100
a	HCRs design and application			
	Guide post	Generally understood HCRs are in place or available that are expected to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.	Well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.	The HCRs are expected to keep the stock fluctuating at or above a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, most of the time.
	Met?	Yes	No	No
Rationale				

For Argentine shrimp fishery, no relation between the parental and recruitment stock has been found, mainly due to the highly dynamic characteristic of the Argentine red shrimp population and the short temporal series being analysed (2017-2022). Nevertheless, Moriondo Danovaro *et al.* (2022b) have established that the estimated number of individuals in the summer campaign (March) should not be less than 40% of the average value of the 2017-2022 series, but this is not considered as a defined reference point.

Generally understood HCRs are in place that allow for fishing areas to be dynamically opened and closed (CFP Resolutions N° 7/2018 and N° 9/2022). As it has been previously stated in **c. Fisheries management**, fishing areas will be closed when, according to information provided by INIDEP, the following is observed: (a) the relation hake/shrimp is larger than 0.20,

and/or (b) there is presence of Argentine red shrimp of commercial categories L4 or smaller in a percentage larger than or equal to 20% during four consecutive fishing days. This harvest control rule is in line with the preliminary harvest control rule made explicit in the CFP Acts N° 19/2019 and N° 19/2020 for the 2019 and 2020 fishing seasons, where the Federal Fishery Council stated that fishing areas shall be closed if the information provided by INIDEP observers signalled that: (a) there is presence of Argentine red shrimp commercial categories L4 or smaller in catches in a proportion equal or greater than 20% for four consecutive days in any area, or (b) the relation hake/shrimp is greater than 0.20 in any area. Furthermore, the monthly CPUE-based reference points and the mature female-based reference points used by INIDEP to provide advice to the Federal Fishery Council are contained in INIDEP's Report (De la Garza & Moriondo Danovaro, 2021). **Therefore, the SG60 level is met.**

No PRI and MSY estimations exist to conclude that HCRs in place ensure that the exploitation rate is reduced as the PRI is approached and are expected to keep the stock fluctuating around a target level consistent with (or above) the MSY. Even though, a sustainability level for Argentine red shrimp fishery would fluctuate around the 200,000 t (Moriondo Danovaro *et al.*, 2022b; Moriondo Danovaro & De la Garza, 2020), it does not have arguments that are robust enough to support it. Nevertheless, the application of the HCRs in fishery closure allows the recovery evidenced in the research campaigns, and the landing values of the last years (2017-2022). **Therefore, SG80 is not achieved, and a condition must be raised.**

b	HCRs robustness to uncertainty			
	Guide post		The HCRs are likely to be robust to the main uncertainties.	The HCRs take account of a wide range of uncertainties including the ecological role of the stock, and there is evidence that the HCRs are robust to the main uncertainties.
	Met?		Yes	No
Rationale				

The HCRs that result in closure the fishery area if biological reference limit point reach to a threshold level is likely robust to the main uncertainties, being based on an index fleet vessel monitored by observers throughout the fishery season. **Therefore, the SG80 level is met.**

As it has been previously stated in **c. Fisheries management**, the HCRs take account the main uncertainties, are based on (i) a permanent assessment of the recruitment process and the environmental context in which it takes place; (ii) the regular estimation of indicators related to future yield scenarios; and (iii) the adoption of practical and swift measures that reflect the population dynamics of the resource, such as dynamic spatial and temporal closures that favour the maximization of the renewal of the stock and which reduce the risk of growth overfishing, recruitment overfishing, and significant alterations of the fishing bottoms (Bertuche *et al.*, 2000b; Roux *et al.*, 2012). No explicit simulation model that would serve as justification exists, and there is no evidence that the HCRs are robust across a broad range of uncertainties. **Therefore, the SG100 level is not met.**

c	HCRs evaluation			
	Guide post	There is some evidence that tools used or available to implement HCRs are appropriate and effective in controlling exploitation.	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the HCRs.
	Met?	Yes	Yes	No
Rationale				

The fishery closure area is an appropriate and effective means of controlling exploitation. The areas and subareas are effectively closed by the management authorities, in compliance with the HCRs, in national and provincial jurisdictions (SPCh Resolution N° 75/2019; N° 63/2022 and N° 105/2024; SPSC Resolutions N° 40/2023 and N° 50/2024; CFP Act N° 17/2024 inc. 2.1). The monitoring in place by onboard observers and vessel monitoring system in both jurisdictions serve as evidence of compliance by fishers (https://www.magyp.gob.ar/sitio/areas/pesca_maritima/monitoreo/). In addition, no sanctions due to breach of closed areas have been registered in the 3-year period analysed. **Therefore, the SG60 level is met.**

As it has been mentioned, the anticipated closure of the fishery in 2021 and the reduction of fishing effort in 2020 seemed to have had a positive effect on reproductive females, since the percentage of mature females was like that of 2021 and higher than in previous years (see Figure 11). Moriondo Danovaro *et al.* (2022a) found recruitment in summer 2022 was higher than in 2021, in line with the increase in the reproductive stock observed during the November 2020. This constitutes available evidence indicating that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs. **Therefore, the SG80 level is met.**

Nevertheless, there is no compelling evidence that clearly shows that the tools used are effective in achieving the exploitation levels required under the HCRs. **Therefore, the SG100 level is not met.**

Overall Performance Indicator score	75
Condition number (if relevant)	1

PI 1.2.3 – Information and monitoring

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring Issue		SG 60	SG 80	SG 100
a	Range of information			
	Guide post	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data are available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	Yes	Yes	No
Rationale				

As it has been stated in the background, there exists relevant information related to stock structure, stock productivity, and fleet composition is available to support the harvest strategy. **Therefore, the SG60 level is met.**

The INIDEP conducts three research cruises each year, aimed at assessing the stock's abundance, its recruitment process and the evolution of the reproduction process. These research cruises take place in summer (March), winter (July) and spring (November). The main goal of the winter research campaigns is to analyse the growth and recruitment process and to detect and assess the cohort that would potentially be available during the next two fishing seasons after the campaign (De la Garza & Moriondo Danovaro, 2020d). The periodicity of the campaigns has been recently institutionalized by means of the CFP Resolution N° 9/2022. The INIDEP research campaigns encompass waters under provincial jurisdiction, including waters of the Province of Chubut and Santa Cruz. Furthermore, an extensive description of the fishery fleet used is available, which supports the harvest strategy (Figures 14, 15, 16, 18 and 19). **Therefore, the SG80 level is met.**

Even though a wide range of information exists, is not always published in scientific papers. This is especially true for environmental information, and there is no periodic analysis for the effects of environmental variability over the population. The last published environmental studies date back to 2007 (Fernandez *et al.*, 2007; 2011). Until then, the fishery was conducted exclusively in the San Jorge Gulf, and in adjacent waters. After 2009, however, the fishery has presented expansion and movement towards platform waters. This special shift in the fishery activities implies that the environmental information available prior to 2007 has become significantly outdated and obsolete. **Therefore, the SG100 level is not met.**

b	Monitoring			
	Guide post	Stock abundance and UoA removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule , and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.	All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty.
	Met?	Yes	Yes	No
Rationale				

Stock abundance is monitored throughout each fishing season. The catch and effort data are collected and a CPUE index is generated which are believed to reflect trends in stock abundance. **Therefore, the SG60 level is met.**

UoA removals are monitored and quantified as landing catch. Bycatch of small shrimp is also monitored and recorded. This is considered to provide a level of accuracy consistent with the HCR. **Therefore, the SG80 level is met.**

However, a portion of the fishery is not monitored by observers, so it cannot be stated that monitoring is highly frequent and there is a high degree of certainty. It is believed that bycatch and discarding of small shrimp may be underestimated due to the limited observer coverage. Moriondo Danovaro & De la Garza (2020) have reported a limited coverage of the coastal chilling fleet. **Therefore, the SG100 level is not met.**

c	Comprehensiveness of information			
	Guide post		There is good information on all other fishery removals from the stock.	
	Met?		Yes	
Rationale				

The Argentine red shrimp fishery is conducted within the closed area to protect juvenile hake so there are not likely any other sources of removals other than by the UoA. Argentine red shrimp fishery is restricted to that which occurs in national jurisdiction, and the Rawson's ZEPR. No other fisheries capture this species; it be purposefully or incidentally. In addition, catches are performed exclusively through fleets with fishing permits which expressly enable the capture of the species, and these fleets are required to report on their captures. **Therefore, the SG80 level is met.**

Overall Performance Indicator score	80
Condition number (if relevant)	N/A

PI 1.2.4 – Assessment of stock status

PI 1.2.4		There is an adequate assessment of the stock status		
Scoring Issue		SG 60	SG 80	SG 100
a	Appropriateness of assessment to stock under consideration			
	Guide post		The assessment is appropriate for the stock and for the harvest control rule.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	Met?		Default score	Default score
Rationale				

According to Table PF1 of MSC Fisheries Certification Process v2.3, if the RBF is used to score PI 1.1.1, a default score of 80 shall be awarded to this PI.

b	Assessment approach			
	Guide post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.	
	Met?	Default score	Default score	
Rationale				

According to Table PF1 of MSC Fisheries Certification Process v2.3, if the RBF is used to score PI 1.1.1, a default score of 80 shall be awarded to this PI.

c	Uncertainty in the assessment			
	Guide post	The assessment identifies major sources of uncertainty.	The assessment takes uncertainty into account.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.
	Met?	Default score	Default score	Default score
Rationale				

According to Table PF1 of MSC Fisheries Certification Process v2.3, if the RBF is used to score PI 1.1.1, a default score of 80 shall be awarded to this PI.

d	Evaluation of assessment			
	Guide post			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			Default score
Rationale				

According to Table PF1 of MSC Fisheries Certification Process v2.3, if the RBF is used to score PI 1.1.1, a default score of 80 shall be awarded to this PI.

e	Peer review of assessment			
	Guide post		The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed.
	Met?		Default score	Default score
Rationale				

According to Table PF1 of MSC Fisheries Certification Process v2.3, if the RBF is used to score PI 1.1.1, a default score of 80 shall be awarded to this PI.

Overall Performance Indicator score	80
Condition number (if relevant)	N/A

10.2 Principle 2

10.2.1 Principle 2 background

This section of the report describes the potential impacts of the fishery on the ecosystem. Five key components are considered to describe the complete range of elements in the ecosystem likely to be affected by the UoA.

-Primary species: managed, in-scope (e.g. fish and shellfish) species. Primary species will usually be species of commercial value to either the UoA or fisheries outside the UoA, with management tools controlling exploitation as well as known reference points in place. In addition, the institution or arrangement that manages the species (or its local stock, see below) will usually have some overlap in jurisdiction with the fishery in the UoA.

-Secondary species: include fish and shellfish species that are not managed according to reference points and birds/mammals/reptiles/amphibians (all species that are out of scope of the standard) that are not ETP species. Given the often-unmanaged status of these species, there are unlikely to be reference points for biomass or fishing mortality in place, as well as a general lack of data availability.

-ETP species: Endangered, Threatened or Protected Species that are recognised by national ETP legislation; listed in the binding international agreements as CITES or CMS (e.g. ACAP, AEWA, ASCOBANS, ACCOBAMS, Wadden Sea Seals Agreement or any other binding agreements); or species classified as “out-of scope” that are listed in the IUCN Redlist as vulnerable (VU), endangered (EN) or critically endangered (CE).

-Habitats: the chemical and bio-physical environment, including biogenic structures, where fishing takes place.

-Ecosystem: Broader ecosystem elements such as trophic structure and function, community composition, and biological diversity.

In general terms, the impacts of the fishery on the different P2 components are assessed as below:

-Primary species, secondary species and habitats are assessed for the direct impacts of fishing.

-ETP species are assessed for both direct and indirect impacts.

-The Ecosystem component is assessed for indirect impacts.

Direct impacts in this context include the actual capture of a species by fishing, and other types of direct mortality, such as following discarding or interactions with the fishing gear. Indirect impacts include situations where the removal of the target species reduces its availability as prey for a predator species, and a range of ecosystem level changes (GSA3.16).

For each of these components, the assessment team assesses 3 topics:

-Outcome: current status of each component and whether the fishery is posing a risk of serious or irreversible harm to the component or hindering its recovery.

-Management: arrangements in place to manage the impact that the UoA has on the P2 species.

-Information: tracking and data available in terms of information adequacy.

a. Primary, secondary and endangered, threatened or protected (ETP) species

Observer program coverage

According to information provided by INIDEP, since 2018 the Argentine shrimp fleet that operates in national jurisdiction was composed by an average of 218 chilling and freezing vessels per fishing season. The following table provide fishing operations and fishing trip covered by observer programmes from INIDEP and Provinces of Chubut and Santa Cruz:

Year	2018	2019	2020	2021	2022	2023	2024
Total vessels*	349	363	362	313	326	317	310
Total trips	4,348	2,845	2,050	2,926	2,605	2,521	2,455
Fishing vessels¹	219	206	197	226	216	237	224
Trips with OBO²	114	80	116	121	113	113	138

*Total fishing vessels that officially declared to catch shrimp in all Argentine Sea.

¹ Number of fishing vessels that operated in national jurisdiction into shrimp stock as target species.

² Total fishing trips in national jurisdiction covered by INIDEP, Chubut and Santa Cruz observers.

In the absence of specific and updated information on bycatch of the fleet under assessment, a Private On Board Observer Program (*Programa Privado de Observadores a Bordo* - POAB) was created in 2016 to collect needed data to assess the Principle 2 components (Godelman, 2023). This program is managed jointly by CEDEPESCA and the Hydrology Laboratory of the Patagonian National University San Juan Bosco and is financed by the client group as part of a Fishery Improvement Project (FIP).

The monitoring protocol included data gathering from the fishing hauls such as weather and sea conditions, position, depth, type of seabed, total catch, and catch by species or taxonomic level, in the case of the invertebrates. Each species or group was weighted and the number of individuals recorded from a bycatch sample between 5 and 40 kg. Total bycatch was extrapolated from the results (total catch – shrimp catch) (Gongora & Bovcon, 2022).

In the 2017 fishing season, monitoring was carried out during April to November in 471 fishing hauls per 91 days; from June to November 2018, 511 hauls were analysed for 105 days; and, 213 hauls were observed during June-October 2019 in 66 days, covering the full season in the closure area for the protection of Argentine hake (AVPJM). In 2022, the monitoring took place between June, July and September, covering 156 fishing hauls over 37 days. The reduced timeframe of monitoring was due severe weather during winter months. During the 2023 season, 229 fishing trips were monitored across four trips by two vessels belonging to the Fisheries Improvement Project (PROME) partners. In 2024 fishing season, 101 fishing hauls were made on 11 trips.

In 2022, the protocol was improved, including the methodology to record fishery interactions with seabirds and marine mammals. Interactions are classified in 2 categories: direct interactions (when the animal came into direct contact with fishing gear and may suffer injuries, died, or escape unharmed) and indirect interactions (when the animal was not harmed during the fishing operations and it is observed near the vessel, swimming or flying overhead, perched on the vessel or feeding on the catch (Palacios, 2023).

The Argentine red shrimp offshore fishery usually started in March/April in San Jorge Gulf. Since May 2016, fishing for shrimp in San Jorge Gulf was forbidden according the Resolution N° 221/2016-SP, due to which fishing operations began to be carried out in the closure area for the protection of Argentine hake (*Area de Veda Permanente para la Proteccion de Juveniles de Merluza* – AVPJM), established by the CFP Resolution N° 26/2009 and modified by the Resolution N° 9/2014, located between parallels 41° and 48° S, from the provincial jurisdiction line (set up at 12 nm from the coast) to 60° W. The fishing season is opened during May until its closure on October 31st. Thereafter, vessels moved on to northern of the AVPJM, being shrimp volumes below to those recorded in the Argentine hake protection area. Also, it is reported that bycatch rates are higher in the northern of AVPJM and the catch composition is different.

Fishing hauls observed in June and July correspond to the start of the shrimp fishing season in the AVPJM, considering waters around the San Jorge Gulf (GSJ), between parallels 45° and 47° S. From August to October, fishing activities were concentrated between 43° and 45° S (Figure 22).

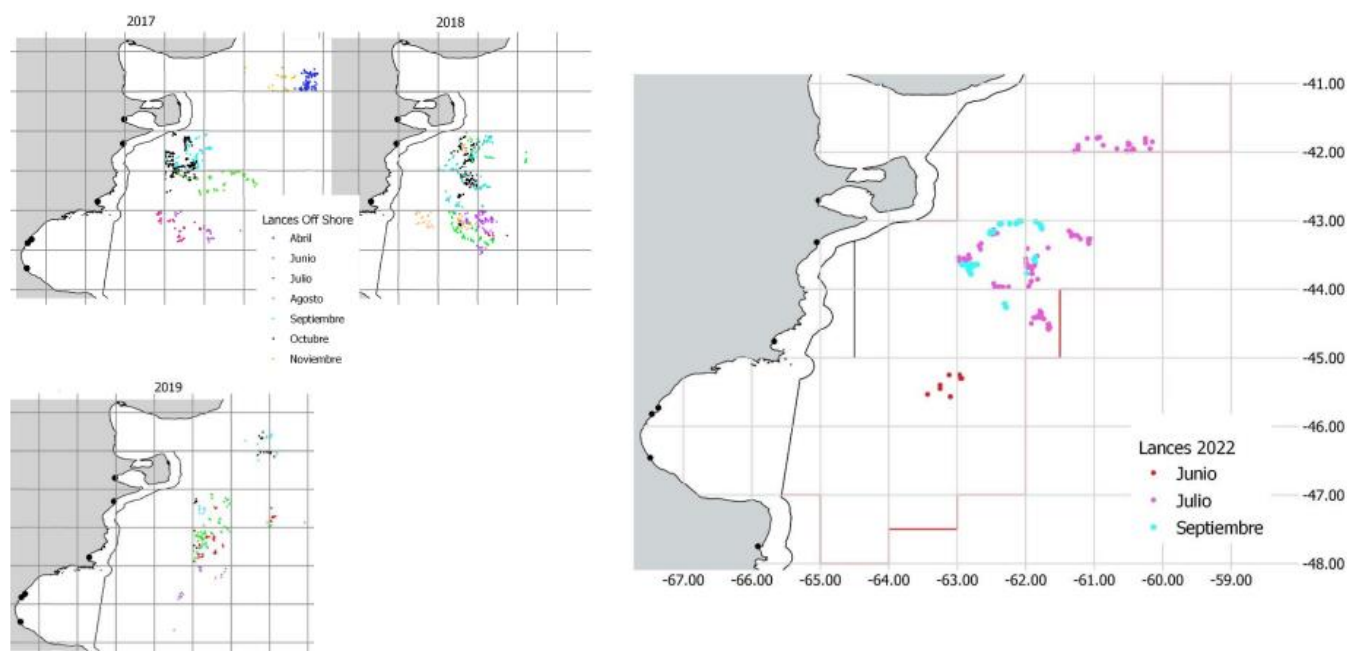


Fig. 22. Fishing hauls per month observed during monitoring of the Private On-board Observer Program for the Argentine red shrimp offshore fishery. (Source: Gongora & Bovcon, 2022).

For 2017 fishing season, the shrimp fishery in the Argentine hake protection area was addressed from May 19th (CFP Act N° 14/2017) to October 31st (CFP Act N° 29/2017). During this period, the monitoring program conducted 471 samplings in 91 fishing days. In the rest of time, the fleet addressed fishing activities in federal waters without restriction (*i.e.* northern of the 42° S). In 2018, the on-board monitoring increased (511 fishing hauls in 105 days) from June to November; the coverage of on-board observers was fully in the closure fishing area (*i.e.* AVPJM). However, for 2022 season, the coverage was focused on June, July and September, considering 156 fishing hauls that were monitored in 37 days, due there were a lot of days with bad weather conditions (Gongora & Bovcon, 2022). In 2023, POAB monitored 229 fishing hauls; while 2024, 101 hauls were observed (Ceballes, 2025).

Results obtained in all observed fishing seasons shown that the most frequent species of bony fish with a frequency greater than 20% of hauls in the AVPJM were: hake (*Merluccius hubbsi*), flounders (*Xystreureys rasiles* and *Paralichthys isosceles*), horsefish (*Congiopodus peruvianus*), longtail southern cod (*Patagonotothen ramsayi*), southwest Atlantic butterfish (*Stromateus brasiliensis*) and pink cuskeel (*Genypterus blacodes*). The most frequent cartilaginous species were narrowmouth catshark (*Schroederichthys bivius*), spiny dogfish (*Squalus acanthias*) and yellownose skate (*Zearaja brevicaudata*). Species that contributed the most to the catches in weight, in addition to hake, were flounders (*Xystreureys rasiles* and *Paralichthys isosceles*), pink cuskeel (*Genypterus blacodes*), horsefish (*Congiopodus peruvianus*), longtail southern cod (*Patagonotothen ramsayi*) and southwest Atlantic butterfish (*Stromateus brasiliensis*), in the case of cartilaginous fishes were narrowmouth catshark (*Schroederichthys bivius*), spiny dogfish (*Squalus acanthias*) and yellownose skate (*Zearaja brevicaudata*).

The most frequent invertebrates were, in order of importance, crabs, sponges, squids, ascidians, sea urchins, starfish and calamaretes. Within the crab group, from those that were identified, the most abundant species was red spider crab (*Libidoclaea granaria*) and the “hairy or tractor” crab (*Peltarion spinosulum*). Species that contributed the most in terms of weight were the tunicates, sponges and polychaetes. In 2019, also included the echinoderms, basket star (*Gorgoncephalus chilensis*) and sea cucumber.

The Table 14 summarizes information collected by the Private On board Observer Program.



Table 14. Primary, secondary and ETP species classification (Fishes, molluscs, crustaceans and other invertebrates).

Species	2017	2018	2019	2022	2023	2024	Average in the last 6 fishing seasons	P2 Comp.	P2 Subcomp.	ETP Regulations	Resil.
Teleosts	CE/CT(%)	CE/CT(%)	CE/CT(%)	CE/CT(%)	CE/CT(%)	CE/CT(%)	CE/CT(%)				
<i>Merluccius hubbsi</i>	12.70	17.20	11.99	8.71	14.10	8.77	12.25	Primary	Main	N/A	Medium
<i>Macruronus magellanicus</i>	0.39	0.00	0.00	0.00	0.04	0.00	0.07	Primary	Minor	N/A	Low
<i>Genypterus blacodes</i>	0.19	0.07	0.05	0.05	0.03	0.03	0.06	Primary	Minor	N/A	Low
<i>Congiopodus peruvianus</i>	0.40	1.42	0.06	0.08	0.20	0.13	0.38	Secondary	Minor	N/A	
<i>Engraulis anchoita</i>	0.00	0.02	0.01	0.00	0.01	0.01	0.01	Primary	Minor	N/A	High
<i>Prionotus nudigula</i>	0.23	0.00	0.00	0.02	0.04	0.00	0.05	Secondary	Minor	N/A	
<i>Acanthistius patachonicus</i>	0.13	0.02	0.01	0.04	0.02	0.00	0.04	Secondary	Minor	N/A	
<i>Trachurus lathami</i>	0.07	0.00	0.00	0.00	0.19	0.00	0.04	Secondary	Minor	N/A	
<i>Nemadoctylus bergi</i>	0.94	0.02	0.00	0.01	0.00	0.00	0.16	Secondary	Minor	N/A	
<i>Patagonotothen ramsayi</i>	0.05	0.09	0.03	0.13	0.01	0.02	0.06	Secondary	Minor	N/A	
<i>Percophis brasiliensis</i>	0.19	0.00	0.00	0.06	0.06	0.00	0.05	Primary	Minor	N/A	Low
<i>Scomber japonicus</i>	0.09	0.00	0.00	0.00	0.00	0.00	0.02	Primary	Minor	N/A	High
<i>Seriotelella porosa</i>	0.07	0.01	0.00	0.02	0.00	0.00	0.02	Secondary	Minor	N/A	
<i>Stromateus brasiliensis</i>	0.45	0.19	0.01	0.04	0.05	0.00	0.12	Secondary	Minor	N/A	
<i>Paralichthys isosceles</i>	0.30	0.41	0.06	0.13	0.10	0.00	0.17	Secondary	Minor	N/A	
Chondrichthyes											
<i>Schroederichthys bivirus</i>	0.34	0.04	0.06	0.04	0.11	0.018	0.13	Secondary	Minor	LC (IUCN, 2019)	Low
<i>Mustelus schmitti</i>	0.03	0.00	0.00	0.01	0.28	0.06	0.01	Primary	Minor	VU (IUCN, 2019)	Low
<i>Galeorhinus galeus</i>	0.07	0.00	0.01	0.00	0.02	0.00	0.02	Secondary	Minor	EN (IUCN, 2019)	Low
<i>Squalus acanthias</i>	0.16	0.02	0.14	0.01	0.01	0.00	0.06	ETP	ETP	VU (IUCN, 2019), CMS, Appendix II (2008)*	Very Low
<i>Discopyge tschudii</i>	0.00	0.00	0.00	0.06	0.06	0.02	0.02	Secondary	Minor	VU (IUCN, 2019)	Low
<i>Squatina guggenheim</i>	0.27	0.00	0.00	0.01	0.00	0.00	0.05	Primary	Minor	EN (IUCN, 2019)	Low
<i>Zearaja brevicaudata</i>	0.40	0.03	0.13	0.05	0.00	0.00	0.10	Secondary	Minor	EN (IUCN, 2019)	Low
<i>Callorhynchus callorhynchus</i>	0.37	0.00	0.03	0.06	0.18	0.00	0.12	Secondary	Minor	VU (IUCN, 2019)	Low
Invertebrates											
Ascidias	0.37	0.87	0.14	0.73	0.00	0.00	0.35	Habitat	-	N/A	
Sponges	0.50	1.24	2.14	0.73	5.31	0.26	1.70	Habitat	-	N/A	
Polychaetes	0.38	1.00	0.34	0.26	0.03	0.35	0.39	Habitat	-	N/A	
<i>Arbacia dufresnei</i>	0.06	0.06	0.00	0.02	0.72	0.00	0.14	Habitat	-	N/A	
<i>Gorgonacephalus chilensis</i>	0.00	0.00	0.12	0.25	0.70	0.02	0.18	Secondary	Minor	N/A	Medium
Holothuroidea	0.00	0.00	0.35	0.00	0.00	0.00	0.06	Habitat	-	N/A	
Braquiopods	0.09	0.30	0.00	0.02	0.65	0.00	0.18	Habitat	-	N/A	
<i>Zygochlamys patagonica</i>	2.14	0.04	0.00	0.06	0.10	0.01	0.39	Secondary	Minor	N/A	High
<i>Illex argentinus</i>	0.32	0.25	0.05	0.16	0.13	0.15	0.18	Primary	Minor	N/A	High



<i>Lithodes santolla</i>	0.12	0.07	0.05	0.05	0.20	0.63	0.19	Primary	Minor	N/A	Medium
<i>Libidoclaea granaria</i>	0.12	0.11	0.04	0.01	0.11	0.09	0.08	Secondary	Minor	N/A	
CE/CT %: Species capture/Total capture in percentage											

(*) CMS-Appendix II shall include: all species which although not necessarily now threatened with extinction may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilization incompatible with their survival; and other species which must be subject to regulation in order that trade in specimens of certain species may be brought under effective control.

Note: the MSC Fisheries Standard v2.01 - SA3.1.5.3 states that species classified as ‘out-of scope’ (amphibians, reptiles, birds and mammals) that are listed in the IUCN Redlist as vulnerable (VU), endangered (EN) or critically endangered (CE) shall be assigned as ETP (endangered, threatened or protected) species. Chondrichthyans are not considered as ‘out-of-scope’ in the MSC requirements, so the IUCN Redlist is not applicable for these species. Also, the MSC Fisheries Standard v2.01 does not specify how Appendices of CMS must be considered by the team as it is clarified for other binding agreement as CITES, ACAP and AEWA. Therefore, considering Appendix definition of binding international agreements and the precautionary approach, the team considered that *Squalus acanthias* must be considered in the ETP assessment as ETP chondrichthyans.

Following the Figure GSA3 – MSC Fisheries Standard v2.01 (Decision tree to assist teams in the designation of P2 species components), all other elasmobranchs identified as less resilient species are classified as ‘minor secondary species’ (<2% UoA catch), due they are managed according to a precautionary TAC that has no analytical or empirically derived stock assessment in place and the stock status in relation to the PRI is unknown.

According to information collected by the on-board observer program during the 2023 fishing season, it was determined that all species incidentally caught during shrimp harvesting were discarded. In case of 2024 season, of the total bycatch identified and monitored by private observer (7,187 individuals), it was determined that 84.28% were discarded, that is, returned dead at the sea; 3.81% were released alive and 11.87% were consumed by the crew. Finally, in 0.04% of cases, no information was available on their destination.

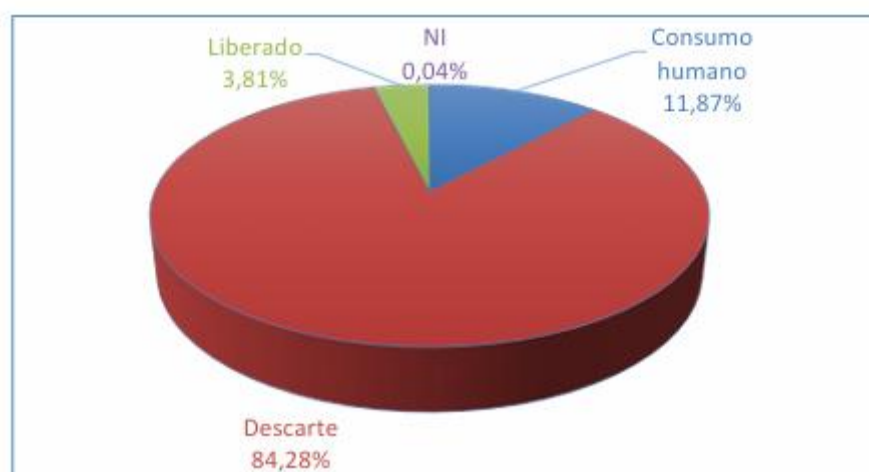


Fig. 23. Bycatch final disposition in fishing hauls monitored by the POAB (Palacios, 2024).

All brachiopods, cnidarians, echinoderms, poriferans, and tunicates were completely discarded, while bony fish, chondrichthyans, molluscs, annelids, and crustaceans had different fates depending on the species.

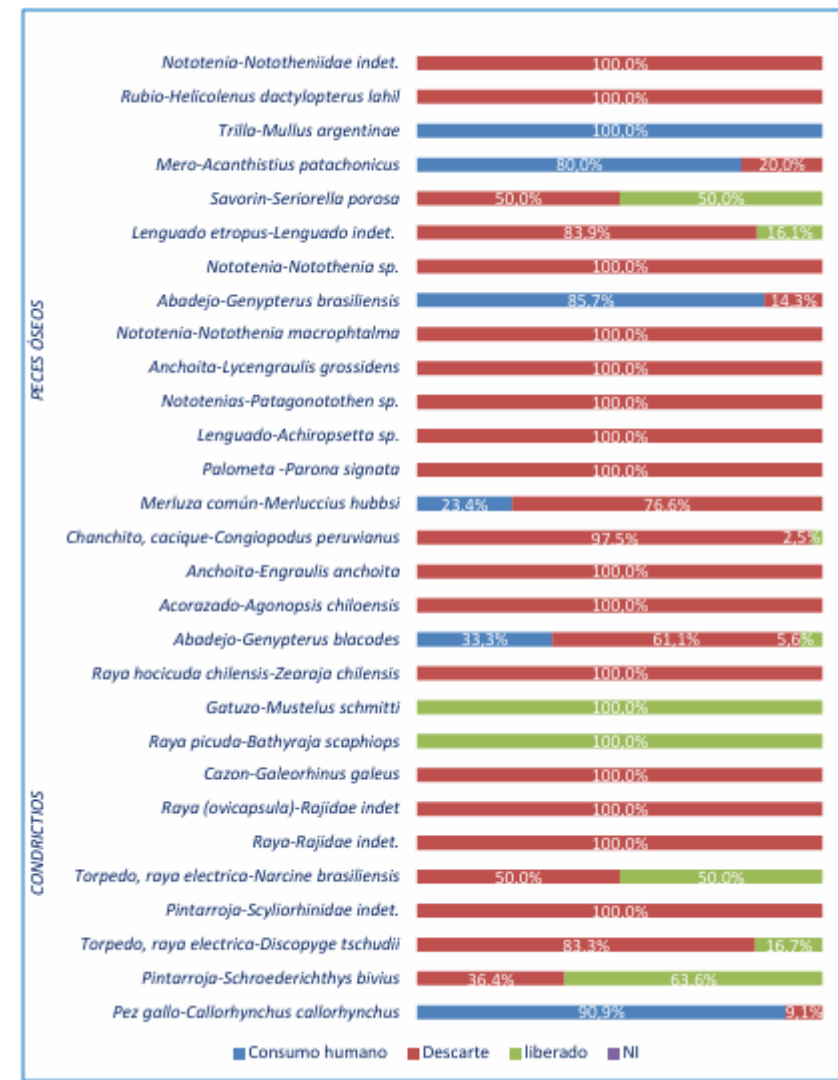
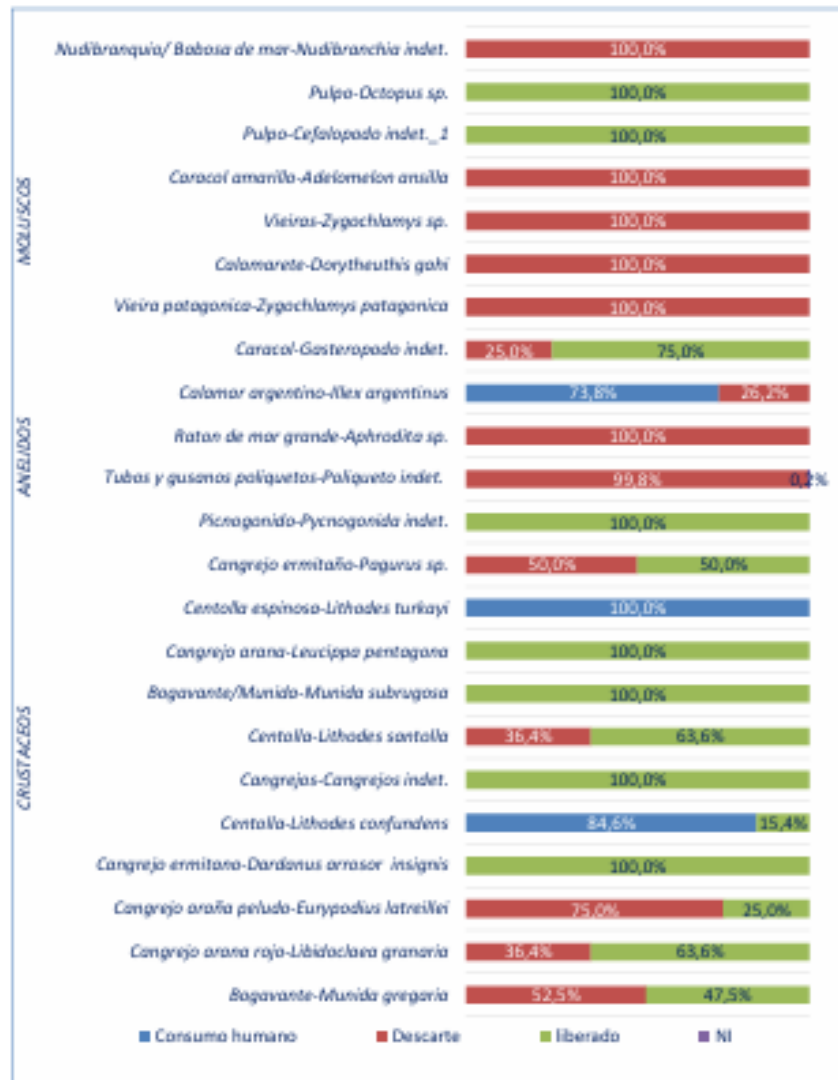


Fig. 24. Bycatch final disposition by species (Palacios, 2024).

Given that the geographic distribution of primary species is wide and they are fished mostly in federal waters, the most management measures are taken by the Federal Fisheries Council (CFP). Based on the definition described in the decision tree outlined in Figure GSA3 provided in the MSC Guidance of the MSC Fisheries Standard v2.01 and the ratio of hake in the total catch in a period of 4 fishing seasons (Table 14), the team identified 1 'main primary species', Argentine hake (*Merluccius hubbsi*), complying the condition that the catch does comprise $\geq 5\%$ by weight of the total catch of all species by the UoA in all fishing seasons analysed. Also, the team considered all minor primary species to score PI 2.1 components (see Performance Indicator scores and rationales tables). Finally, no 'on-scope' species are identified as 'main secondary species', with exception of seabirds explained below.

-Primary species - Argentine hake (*Merluccius hubbsi*)

Argentine hake is the most important demersal species for Argentine and Uruguayan fisheries. This species is distributed from Cabo Frio, in Brazil (22° S), to southern of Argentina (55° S), in depth between 50 and 500 m. In Argentine Sea, there are two stocks: northern (north of 41° S) shared with Uruguay and Brazil; and southern (south of 41° S) located mainly between 41° and 48° S at 50 and 400 m of depth.

It has two types of migrations: a daily one, in which it ascends to the upper layers at night to feed; and the seasonal one with the aim of migrating in spring to more coastal waters (70-100 m of depth) to reproduce.

The maximum size observed for females is 95 cm, while in males is 60 cm. The maximum age observed is 14 years. The most frequent catch sizes (*i.e.* 80%) are made up of range between 25 and 40 cm, with 2 to 4 years of age. Mean length values increase with latitude and depth.

The size of first sexual maturity ranged from 32.12-35.31 cm for females and 27.64-33.88 cm for males. Sizes corresponding to age range from 1.95-2.59 years for males and 2.35-2.65 for females (Suby & Santos, 2024).

There are two main areas of concentration of juveniles: first is located between 35° and 38° S, and the second one covers San Jorge Gulf and northern coastal waters of it.

It is a carnivorous, predatory and opportunistic species with frequent cases of cannibalism in the areas where juveniles and adults of the species co-occur.

A. Outcome

Southern stock

According to Santos & Villarino (2023), 90% of total catch of hake comes from southern stock (south of 41° S). Two methodologies were used to evaluate the stock status: Virtual Population Analysis (VPA-XSA) and Statistical Catch at Age (SCA).

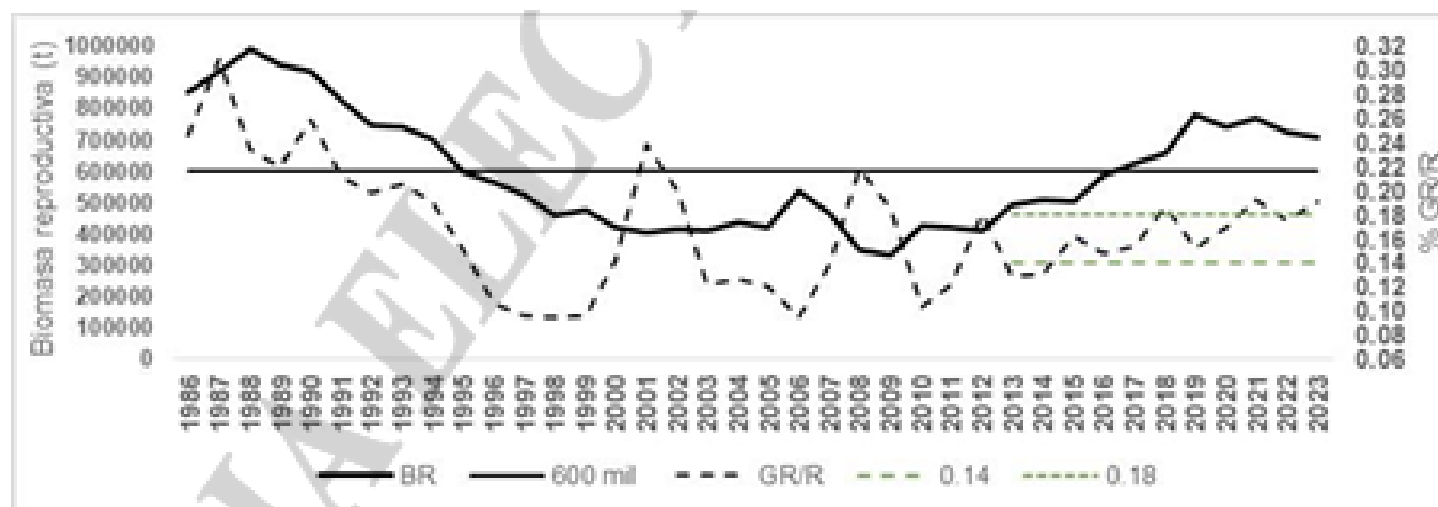


Fig. 25. Spawning biomass (SB) of common hake estimated by the ECE model at the beginning of each year. The SB value of 600,000 t, the percentage of spawners out of the total spawners (SR/S) and the range of this percentage (0.14-0.18) used in the SBA calculations since 2013 are indicated. (Source: Santos et al., 2024).

The target biological reference point (TRP) is that the reproductive biomass is greater than or equal to 600,000 t with a proportion of large broodstock of not less than 14%. A gradual and sustained recovery from 2010 has kept hake at an average around of 748,000 t in the last 4 years. It estimated that between 15% and 18% of large broodstock were borne, between 2019 and 2022, that is, there was an improvement in the size and quality of the spawning biomass in accordance with the TRP.

The CBAs for 2025 that would allow compliance with the target biological reference point (TBRP), which consists of a reproductive biomass (RB) greater than or equal to 600,000 t, with a proportion of large spawners (LSP) out of the total spawners (R) of no less than 18%, resulted in 347,560 t in the short term, and 342,444 t in the medium term. In addition, the CBAs that would allow compliance with the PBRO requirement of reproductive biomass (RB) reaching 30% of virgin spawning biomass (BRV0.3 = 810,000 t) were estimated. These reached 332,750 t in the short term and 332,791 t in the medium term. These were obtained after deducting the average estimated discard and underreporting between 2019 and 2023 (95,636 t) and a bycatch projection that should not exceed 35,000 t. Since 2013, the volume of discards and fishing by the foreign fleet has doubled, while bycatch obtained by the shrimp fleet has fluctuated between 26,000 t and 41,000 t, reaching close to 33,000 t in recent years (Santos *et al.*, 2024).

B. Management

Since 2009, the management authority determined management measures applied to hake fisheries (CFP Resolutions N° 26/2009; N° 14/2014, N° 16/2018 and N° 3/2021), including:

- (Article 2°) TACs for northern and southern stock will be established annually by management authority.
- (Article 3° and 5°) Catch authorization is granted to ice chilled vessels holding a CITC.
- (Article 4°) It is limited to a maximum of 4 annual trips per vessel. Each one must have a maximum of 5,000 boxes per trip when operating in the northern stock.
- (Article 6°) During the first semester of the year, vessels may catch up to a maximum of 60% of assigned annual CITC.
- (Article 7°) Fishing trips should be carried out completely and exclusively in each stock.
- (Article 8°) Trawling is prohibited for all type of vessels, permanently, in the area included in the geographical points defined in the CFP Resolution N° 26/2009.
- (Article 10°) The CFP may order the opening and closing of fishing subareas within the Restricted Fishing Effort Area located to the East of provincial jurisdiction limit and to designate the authorized fleet to operate in this area. To do so, the CFP may have the advice of the Management Commission of the Restricted Fishing Effort Area (*Comision de Manejo del Area de Esfuerzo Pesquero Retringido*).
- (Article 11°) Freezer vessels may not operate within of 5 nm closed to the zone established in the Article 8°.
- (Article 12°) Vessels that have a surimi production plan on-board may only carry out fishing operations exclusively at South of 49° S.
- (Articles 13° and 14°) Ice chilled vessels authorized to catch hake shall comply with an effective biological stop in port during 2019, 2020 and 2021 for a period of 40 days that may be divided up to 4 periods of duration not less than 8 days. The same requirement is applied to freezer vessels, but stopping for a period of 60 days, divided in 4 periods not less than 12 days each one. Ownerships must inform to National Directorate of Fisheries Coordination (*Direccion Nacional de Coordinacion Pesquera*) the compliance dates. Incompliances will be considered a serious offense and will be subject to the same sanctions established for fishing closed zone.
- (Article 19°) The TAC carried out in Common Fishing Zone determined by the Treaty of Rio de la Plata and its Maritime Front (*Tratado del Rio de la Plata y su Frente Maritimo*) will be established by Joint Technical Commission of the Maritime Front (*Comision Tecnica Mixta del Frente Maritimo* - CTMFM).
- (Article 22°) The use of devices for the escape of juveniles in trawl nets will be mandatory in accordance with the selectivity plan established by the CFP.
- (Article 23°) The percentage of juveniles that may be caught in each trip will be defined according to the volume of total catch.

-(Article 24°) Vessels authorized should have the presence of an inspector or on-board observer.

In addition, Total Allowable Catch (TAC), is an important management measure to sustain the recovery of Reproductive Biomass (BR) in volume and composition, and to gradually approach the goal of reaching 30% of virgin spawning biomass. Total annual catches for the southern stock in the Southwest Atlantic Ocean have been higher than TACs recommended by INIDEP during 2018-2024 period (Table 15), considering foreign fleet. Even if this harvest control rule is not achieved, according (Santos & Villarino, 2023), during 2019 and 2022, it was estimated that between 15% and 18% of large broodstock was born that is, there was an improvement in the size and quality of the reproductive biomass (BR), in accordance with the Biological Target Point.

Table 15. Total annual catches (in tons) of Argentine hake southern stock obtained in the Southwest Atlantic Ocean (Source: Santos et al., 2024).

Fleet	Year						
	2018	2019	2020	2021	2022	2023	2024
Argentine fleet	254,567	286,879	257,798	281,337	261,349	268,448	294,950
Foreign fleet	77,962	118,305	87,321	112,564	113,737	109,924	109,924
Total catch	332,529	405,184	355,119	393,901	375,086	378,372	404,874
TAC	290,000	280,000	290,000	305,000	298,000	310,000	319,000

Shrimp fishing takes place primarily within the closure area for the protection of Argentine hake (*Area de Veda Permanente para la Proteccion de Juveniles de Merluza – AVPJM*). This area is recognized as one of the most important management measures that has allowed the recovery objectives of the hake stock distributed south of 41° S to be met (Santos & Villarino, 2023). For this reason, and as a measure to mitigate the impact of the fishery on the common hake resource, is carried out based on the opening and closing areas into AVPJM, authorized for fishing. Before proceeding with the opening of a specific area, a survey is conducted, in which a small group of fishing vessels are deployed to the corresponding area to assess the resource. If a survey yields favourable results, the area in question will be opened. Conversely, the non-opening of an area, as well as the decision to close an area, may be determined by the following parameters established by the CFP Resolution N° 9/2022, which modified by the CFP Resolution N° 7/2018, it was stated in the Article 17° that ‘the shrimp (*Pleoticus muelleri*) fishery will be carried out through a dynamic system of opening and closing areas and/or subareas. The area and/or subarea will be closed when, based on information provided by INIDEP, a high presence of females in the reproductive or laying stage is verified, the Catch per Unit of Effort (CPUE) is analysed, and, specifically, the following is observed: a) a ratio of common hake (*Merluccius hubbsi*) to shrimp (*Pleoticus muelleri*) greater than 20%; and/or, b) a presence of L4 size categories or smaller of the shrimp (*Pleoticus muelleri*) in a percentage equal to or greater than 20% during 4 consecutive fishing days’.

The bycatch of hake is considered as a main indicator in the shrimp fishing season as the ratio of hake to shrimp catches (M/L), which should not exceed an estimated maximum value. Also, the cumulative bycatch during the fishing season is compared to the total bycatch assessed jointly with the Biologically Acceptable Catch (BAC) of hake south of 41° S (Santos & Villarino, 2023; Santos et al., 2024).

In 2024, the fishing season in waters under national jurisdiction began in March 2024, outside the juvenile hake protection area. Fishing operations within the AVPJM were authorized after the first survey, conducted in May 2024 in subareas 4, 5, 13, and 14 (see Figure 26). Subsequently, in September, shrimp fishing operations within the closed area were prohibited and suspended (CFP Act N° 17/2024). It should be noted that five additional surveys were carried out by INIDEP during fishing operations within the closed area (DNCyFP, 2024; De La Garza, 2025).

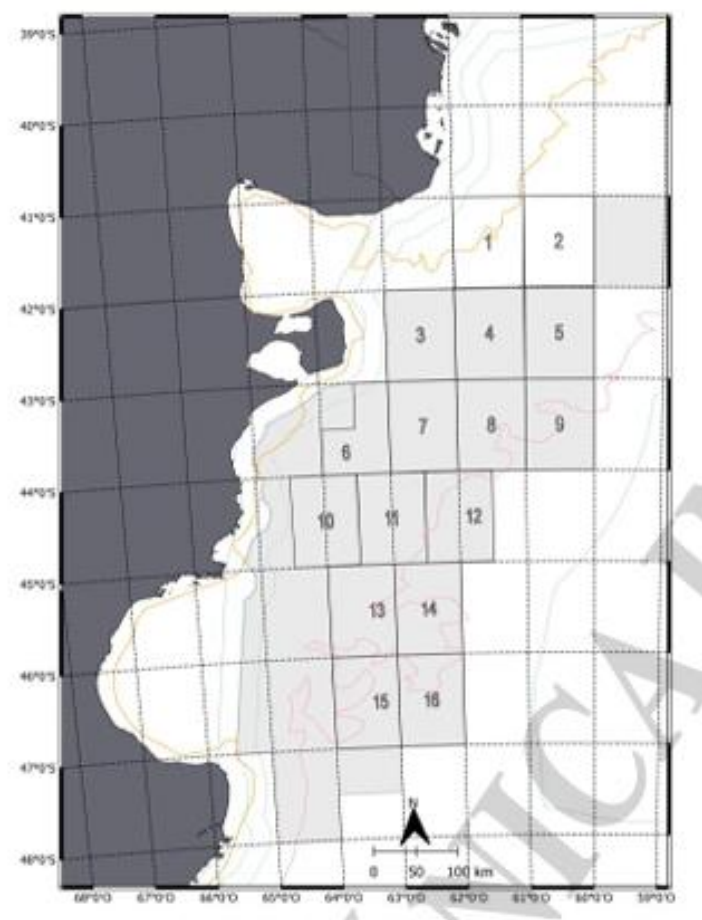


Fig. 26. Sub-areas designated by the Federal Fisheries Council (CFP) for the management of the shrimp fishery in the closed area for the protection of juvenile hake (Source: De la Garza, 2025)

C. Information

In 2024, the exploitation status of common hake south of 41° South latitude, is based on a statistical catch-at-age model adjusted using the CPUE obtained by the fresh fish fleet and the abundance indices at age obtained in research campaigns targeting the resource. Official landing information and catch-at-age estimates for the 1986-2023 period were considered, and preliminary data for 2024 were also included. The assessment report presents various CBA alternatives, according to the established biological reference points, to sustain the recovery of Reproductive Biomass (RB) in volume and composition, and to gradually approach the goal of reaching 30% of virgin spawning biomass (CFP Act N° 29/2024).

All models estimated a sharp decline in abundance between 1999 and 2000, followed by a degree of stability, with slight fluctuations, until 2012. From that year on, total and reproductive biomass (BT and BR) showed an upward trend until 2017, after which marked differences in biomass evolution emerged depending on each of the applied scenarios (CFP Act N° 29/2024).

Common hake (*Merluccius hubbsi*) bycatch is discarded according to size in their own fishery and as incidental catch or bycatch in the shrimp fishery, where 100% of the catch is discarded (Dato *et al.*, 2006; Villarino *et al.*, 2015).

The estimates of hake (*Merluccius hubbsi*) bycatch, in the shrimp (*Pleoticus muelleri*) fishery, is part of the basic data used in the assessment of the population status of hake (*Merluccius hubbsi*), south of 41°S, since 2009. Hake bycatch obtained during the shrimp fishing season is monitored weekly (Villarino & Tringali, 2019).

Chondrichthyans

The chondrichthyans species present slow growth, late sexual maturity, extensive reproductive cycle and low fecundity.

According to a doctoral thesis by Ruibal Nuñez (2020), based on three sources: the On-board Observer Program of the Chubut province over a period of 12 years of monitoring the provincial fishing fleets (2003-2014), the research cruises and

the biological samplings of specimens from landings. The presence of 26 chondrichthyan species corresponding to 11 families was recorded: eight species of sharks, 17 species of batoids and a single species of holocephalan. These species overlap geographically with the bottom trawling fisheries of Patagonian shrimp and common hake, and they represent 60% of the frequent chondrichthyan species in the Argentinean Sea. Of the chondrichthyan species that integrate the bycatch in these fisheries, three of them are constant in the catches and they have the highest frequency of occurrence (greater than or equal to 50%): *Zearaja brevicaudata*, *Discopyge tschudii* and *Callorhinchus callorynchus*. Four species presented frequencies between 25% and 50%: *Sympterygia bonapartii*, *Psammobatis normani*, *Squalus acanthias* and *Schroederichthys bivius*. The remaining species were observed with frequencies below of 25% in the fishing hauls. Most of the species are discarded at sea, few are retained for consumption, being the main species landed *Callorhinchus callorynchus*.

Five species assemblage areas were identified: a coastal assemblage in the northern of the San Jorge Gulf and the Atlantic coast of the Province of Chubut (areas of Camarones Bay, Isla Escondida and Engaño Bay), that were characterized by the species *Callorhinchus callorynchus*, *Mustelus schmitti*, *Squatina guggenheim*, *Galeorhinus galeus* and *Sympterygia bonapartii*; and two deep-water assemblages in the closure area for the protection of Argentine hake, one of them characterized by the species *Schroederichthys bivius*, *Squalus acanthias* and *Bathyrhaja macloviana*, and the other represented by the species *Schroederichthys bivius*, *Squalus acanthias*, *Bathyrhaja macloviana*, *Discopyge tschudii* and *Psammobatis rudis*.

The most vulnerable species associated with the Patagonian shrimp trawling fishery were *Zearaja brevicaudata*, *Mustelus schmitti*, *Squalus acanthias* and *Galeorhinus galeus*, based on RBF analysis.

In this assessment (considering the data provided by the On-board Private Observer Program), they have low bycatch, less than 0.15% (see Table 14). Only *Squalus acanthias* has been considered an ETP species due to its vulnerability, although only in the northern hemisphere, in this case it has been classified as such considering a precautionary approach.

-ETP species - Spiny dogfish (*Squalus acanthias*)

Squalus acanthias is a relatively small shark that habits in temperate waters. In the American Southern Hemisphere, it is distributed from 33° S in the Atlantic Ocean to waters of Southeast Pacific.

Although, there is considerable variation in population parameters due to its wide distribution. *S. acanthias* is caught as and accompanying fauna in main industrial fisheries but is almost completely discarded on-board. Also, unregulated and expanding target and bycatch fisheries take spiny dogfish in Uruguay and Argentina, where declines of ~50% have been reported (IUCN Redlist). Hake and shrimp Patagonian trawlers fish spiny dogfish as bycatch. Rising effort in these fisheries and a lack of bycatch control is a threat to this and other elasmobranch populations in the region (IUCN Redlist). As in so many other regions, pregnant females are commonly targeted. The South American stocks are assessed as vulnerable but may prove to be 'endangered' when a more detailed regional review can be undertaken.

Colonello *et al.* (2012) analysed the reproductive and population parameters, considering research survey data carried out between 2010 and 2012. The average length of sexual maturity was estimated at 564 mm for males and 649 mm for females. The average fertility estimated in 6 embryos added to the 2-year reproductive cycles determine an annual fertility of 3 embryos. The parameters estimated in this study allow conclude that *S. acanthias* is very susceptible to intensive fishery exploitation.

A. Management

National Action Plans for chondrichthyans, approved by CFP Resolution N° 6/2009, provide a comprehensive strategy for managing effects on ETP species. Their objectives are addressed to contribute at ecosystem management of Fisheries in the Argentine Sea, assess interactions and reduce harmful impacts. In 2013, the CFP established management measures to chondrichthyans through Resolutions N° 4/2013 and N° 7/2013. During 2021 and 2022, the CFP reviewed these measures, establishing the following (Resolutions N° 8/2021 and N° 19/2022):

-(Article 1°) Target fishing of chondrichthyans is forbidden.

-(Articles 2°, 3° and 4°) A maximum landing limit for rays and sharks is established at 50% of total species caught by fishing trip. In case of landing of rays or shark, it must not exceed 30% of total volume of catch, respectively.

-(Article 5°) In the event that limits are exceeded, the vessels must move on to another fishing area.

-(Article 6°) The 'shark finning' practice is forbidden.

-(Article 7°) All sharks (excepting *Galeorhinus galeus*, *Mustelus schmitti*, *Squatina spp.*, *Squalus spp.* and *Schroederichthys biviui*) captured incidentally must be returned immediately to the sea and in the least traumatic way possible to maximize their survival. In case that individuals arrive dead on deck, they must be declared in logbooks, preserved and transported to a research institute to be studied, unless an observer on-board takes required data for the study, with which this obligation will be considered fulfilled.

-(Article 8°) The use of hooks or similar instruments for handling and/or release alive of individuals is forbidden.

-(Article 10°) INIDEP must conduct on-board monitoring through observers on commercial vessels that frequently catches chondrichthyans.

-(Article 11°) Captains and crews must register all chondrichthyans catches and must be conduct training workshops according to National Action Plan of elasmobranchs.

B. Information

Monitoring of incidental catch has been performed since 2004, when the INIDEP included the bycatch species in the regular records taken by on-board observers. They coordinate their shipment in the shrimp fleet to obtain reliable and continuous information (CFP Resolution N° 4/2013). INIDEP instructed at OBO Program (now Acquisition of Biological, Fishing and Environmental Information Program) to carry out actions and methodologies required for proper quantification of bycatch species and implement them during fishing tasks. The CFP requested at SAYDS to sign agreements with research institutions to ensure the analysis data obtained by OBOs (CFP Resolution N° 6/2009).

Moreover, the private program recorded the good shark practices such as return alive individuals to the sea conducted by the crew on-board fishing vessels, considering outlines established in the CFP Resolution N° 8/2021.

Seabirds and marine mammal interactions

During 2018 and 2019 fishing seasons, POAB only monitored direct impacts of the UoA-related mortality of individuals. Only 5 sea lions (*Otaria byronia*) were incidentally killed in four fishing hauls observed.

In 2022, the Private On-board Observer Program (POAB) improved the gathering collection data methodology to record the indirect interactions of seabirds and marine mammals in the fishery under assessment. During this year, there was recorded only one male sea lion (*Otaria flavescens*) coming on-board dead. A total of 48 fishing hauls were monitored, identifying 13 species of seabirds (n= 2,885 individuals) and 2 marine mammals (n= 69) (Palacios, 2023). Also, it was reported the interaction with 2 dolphins, but they could not be identified at the species level.

In the case of indirect interactions, on-board observers indicated that in most time the animals did not have direct contact or suffer any damage during the fishing operation. Seabirds were near the vessel (e.g. swimming or flying), perched on the ship or feeding on the catch. The most frequent monitoring was 92% of seabirds and 78% of marine mammals during discarding. Black-browed albatross (*Thalassarche melanophris*) was the most abundant species with the highest frequency of occurrence (see Table 16).

During 2023 fishing season, direct and indirect interactions between the fishery and seabird and marine mammal species were recorded in 42% of the fishing hauls. Eleven seabirds and two marine mammal species were identified. A total of 6,983 seabirds and 79 sea lions were recorded, of these 96% of the individuals interacted indirectly during discarding, 3.8% during trawling, and only one direct interaction was recorded with a fur seal (*Arctocephalus australis*). The seal was caught in the net and observed dead during the haul-in and haul-out. During the haul-in, seabirds were recorded flying over the vessel. However, during discarding, both seabirds and marine mammals were observed swimming, flying over the vessel, or feeding on the catch. The seabird species with the highest number of observed individuals and frequency of occurrence were the kelp gull (*Larus dominicanus*), the white-chinned petrel (*Procellaria aequinoctialis*), and the black-browed albatross (*Thalassarche melanophris*). Regarding the fishery's interaction with marine mammals, 79 sea lions were recorded: 68 individuals of the species *Otaria byronia* (one-haired fur seal), 9 of the species *Arctocephalus australis* (two-haired fur seal), and one individual of the *Otariidae* family that could not be identified to the species level (Ceballes, 2023).

In 2024 fishing season, direct and indirect interactions with seabirds, and marine mammals were recorded in 37% of the fishing hauls, identifying a total of 22 taxa, of which 19 were seabirds and 3 were marine mammals. Among seabirds, 18

taxa were identified at the species level and 1 at the family level. The largest number of seabirds and marine mammal specimens were observed during discarding. In total, approximately 2,263 seabirds, 21 sea lions, and 26 dolphins were recorded. 100% of the individuals interacted indirectly with the fishery, observing, swimming, hovering, and/or perching on the vessel. The species with the highest number of individuals observed were the kelp gull (*Larus dominicanus*), with 1,053 individuals, and the black-browed albatross (*Thalassarche melanophris*), with 714 individuals recorded. In addition, a sighting of Salvin's albatross (*Thalassarche cauta salvini*) and the slender-billed prion (*Pachyptila belcheri*) was recorded, both of which were observed flying near the vessel during the trawl. Regarding marine mammals, all three identified taxa were recorded at the species level. Nineteen hairy sea lions (*Otaria byronia*) and two hairy sea lions (*Arctocephalus australis*) were observed. Also recorded were 26 short-beaked common dolphins (*Delphinus delphis linnaeus*), which were observed swimming near the vessel during the trawl, lifting, and setting of the net on deck. No specimens were harmed or had direct contact with the fishing gear or the vessel (Palacios, 2024).

According to the MSC Fisheries Standard v2.01 – SA3.1.5, the team shall assign ETP (endangered, threatened or protected) species according to national ETP legislation, listed in the binding international agreements or listed in the IUCN Redlist as vulnerable (VU), endangered (EN) or critically endangered (CR). The following table shows ETP seabirds that interact with the UoA.



Table 16. Interaction with seabirds and marine mammals in the Argentine red shrimp offshore fishery between 2022 and 2024

Fishing season	P2 Component		Indirect Interaction			Mortality		
			2022	2023	2024	2022	2023	2024
Species			#Indiv/FO (%)	#Indiv/FO (%)	#Indiv/FO (%)	#Indiv.	#Indiv.	#Indiv.
Black-browed albatross <i>Thalassarche melanophris</i>	Nat. Leg. VU IUCN Redlist LC Annex 1 ACAP Appendix II CMS	ETP species	1,824 69%	958 63%	714 98%	-	-	-
White-chinned petrel <i>Procellaria aequinoctialis</i>	Nat. Leg. VU IUCN Redlist VU Annex 1 ACAP Appendix II CMS	ETP species	276 40%	2,072 79%	222 68%	-	-	-
Sooty shearwater <i>Ardenna grisea</i>	Nat. Leg. NT IUCN Redlist NT	Secondary Main	258 31%	-	43 27%	-	-	-
Kelp gull <i>Larus dominicanus</i>	Nat. Leg. NT IUCN Redlist LC	Secondary Main	130 15%	3,172 81%	1,053 78%	-	-	-
Southern royal albatross <i>Diomedea epomophora</i>	Nat. Leg. EN IUCN Redlist VU Annex 1 ACAP Appendix II CMS	ETP species	125 42%	10 6%	63 22%	-	-	-
Southern giant petrel <i>Macronectes giganteus</i>	Nat. Leg. VU IUCN Redlist VU Annex 1 ACAP Appendix II CMS	ETP species	96 40%	245 54%	8 5%	-	-	-
Cape petrel <i>Daption capense</i>	Nat. Leg. NT IUCN Redlist LC	Secondary Main	77 33%	65 23%	22 7%	-	-	-
South American tern <i>Sterna hirundinacea</i>	Nat. Leg. NT IUCN Redlist LC	Secondary Main	36 10%	375 33%	28 20%	-	-	-
Wilson's storm petrel <i>Oceanites oceanicus</i>	Nat. Leg. NT IUCN Redlist LC	Secondary Main	30 21%	63 15%	26 15%	-	-	-
Great shearwater <i>Ardenna gravis</i>	Nat. Leg. VU IUCN Redlist LC	ETP species	13 4%	-	-	-	-	-
Wandering albatross <i>Diomedea exulans</i>	Nat. Leg. EN IUCN Redlist VU Annex 1 ACAP Appendix II CMS	ETP species	9 8%	-	10 22%	-	-	-
Magellan penguin <i>Spheniscus magellanicus</i>	Nat. Leg. VU IUCN Redlist LC	ETP species	9 6%	-	-	-	-	-
Southern petrel <i>Fulmarus glacialisoides</i>	Nat. Leg. NT IUCN Redlist LC	Secondary Main	-	7 2%	-	-	-	-

Northern Royal albatross <i>Diomedea sanfordi</i>	Nat. Leg. EN IUCN Redlist EN Annex 1 ACAP Appendix II CMS	ETP species	-	3 2%	-	-	-	-
Light-mantled albatross <i>Phoebastria palpebrata</i>	Nat. Leg. VU IUCN Redlist NT Annex 1 ACAP Appendix II CMS	ETP species	-	-	29 12%	-	-	-
Atlantic yellow-nosed albatross <i>Thalassarche chlororhynchos</i>	Nat. Leg. VU IUCN Redlist EN Annex 1 ACAP Appendix II CMS	ETP species	-	-	22 15%	-	-	-
Spectacled petrel <i>Procellaria conspicillata</i>	Nat. Leg. CE IUCN Redlist VU Annex 1 ACAP Appendix II CMS	ETP species	-	-	4 7%	-	-	-
Grey-headed albatross <i>Thalassarche chrysostoma</i>	Nat. Leg. VU IUCN Redlist EN Annex 1 ACAP Appendix II CMS	ETP species	-	-	2 2%	-	-	-
Shy albatross <i>Thalassarche cauta</i>	Nat. Leg. VU IUCN Redlist NT Annex 1 ACAP Appendix II CMS	ETP species	-	-	1 2%	-	-	-
Northern giant petrel <i>Macronectes halli</i>	Nat. Leg. VU IUCN Redlist LC Annex 1 ACAP Appendix II CMS	ETP species	7 13%	7 4%	15 7%	-	-	-
Total			2,885	6,983	2,263	-	-	-

Table 16 (Continue). Interaction with seabirds and marine mammals in the Argentine red shrimp offshore fishery between 2022 and 2024

Fishing season	P2 Component		Indirect Interaction			Mortality		
			2022	2023	2024	2022	2023	2024
Species			#Indiv/FO (%)	#Indiv/FO (%)	#Indiv/FO (%)	#Indiv.	#Indiv.	#Indiv.
South American sea lion <i>Otaria flavescens</i> - <i>O. byronia</i>	ETP Nat. Leg. Resolution N° 351/95 IUCN Redlist LC Appendix II CMS	ETP species	58 46%	68 18%	19 10%	1	-	
South American fur seal <i>Arctocephalus australis</i>	ETP Nat. Leg. Resolution N° 351/95 IUCN Redlist LC Appendix II CMS	ETP species	-	10 7%	2 2	-	1	
Commerson’s dolphin <i>Cephalorhynchus commersonii</i>	ETP Nat. Leg. Law 25,577 IUCN Redlist LC Appendix II CMS	ETP species	9 4%	-	-	-	-	
Dolphin <i>Delphinidae indet.</i>	ETP Nat. Leg. Law 25,577	ETP species	2 2%	-	2	-	-	
	Total		69	79	21	1	1	-

(*) Decree N° 666/97, SAYDS Resolution N° 348/2010 (ETP Nat. Leg.): CE: Critically Endangered; LC: Least Concern; VU: Vulnerable; EN: Endangered; NT: Near Threatened

(**) IUCN category: LC: Least Concern; VU: Vulnerable; EN: Endangered; NT: Near Threatened

In a study of Seco Pon *et al.* (2024) concluded that pelagic seabirds such as albatrosses and petrels are the main species affected by interaction with fishing vessels, being Black-browed albatross (*T. melanophris*) and great shearwater (*A. gravis*) standing out on the levels of interaction (including incident mortality or bycatch) of seabirds associated with longline, jigging, trawling, chilling and freezer trawling fleets during the period 2017-2018. However, it is also worth noting that in some species that are caught in greater numbers, such as large albatrosses belonging to the genus *Diomedea* (wandering albatross - *D. exulans*, and Southern royal albatross – *D. epomophora*, as species with confirmed mortality on trawlers). The impact on populations could also be significant, considering the small population sizes and low productivity of these seabird populations. This study shows too, that the interaction (*i.e.* mortality or collision with fishing gear cables) of the shrimp fleet with seabirds is very low.

Rodriguez *et al.* (2023) conducted a study from 2014 to 2018 on the impact of various Argentine fisheries on marine mammals. During this period, a total of 452,710 fishing hauls were made in the shrimp fishery, and observations were made in 28,963 (6.4%). The main catch in this fishery was sea lions, with a lower incidence of dolphins and none of whales (Figures 27 and 28). Likewise, the largest releases occurred in sea lions, particularly South American sea lion (*Otaria flavescens*), compared to South American fur seal (*Arctocephalus australis*). In comparative terms, the fishery that contributed the most to overall catches compared with the other fisheries studied, was the shrimp fishery (46.3%). For this reason, the authors indicate the need to implement mitigation measures to gradually reduce the number of animals captured. Likewise, articulate strategies and actions with the National Plan for Marine Mammals to reduce their interaction.

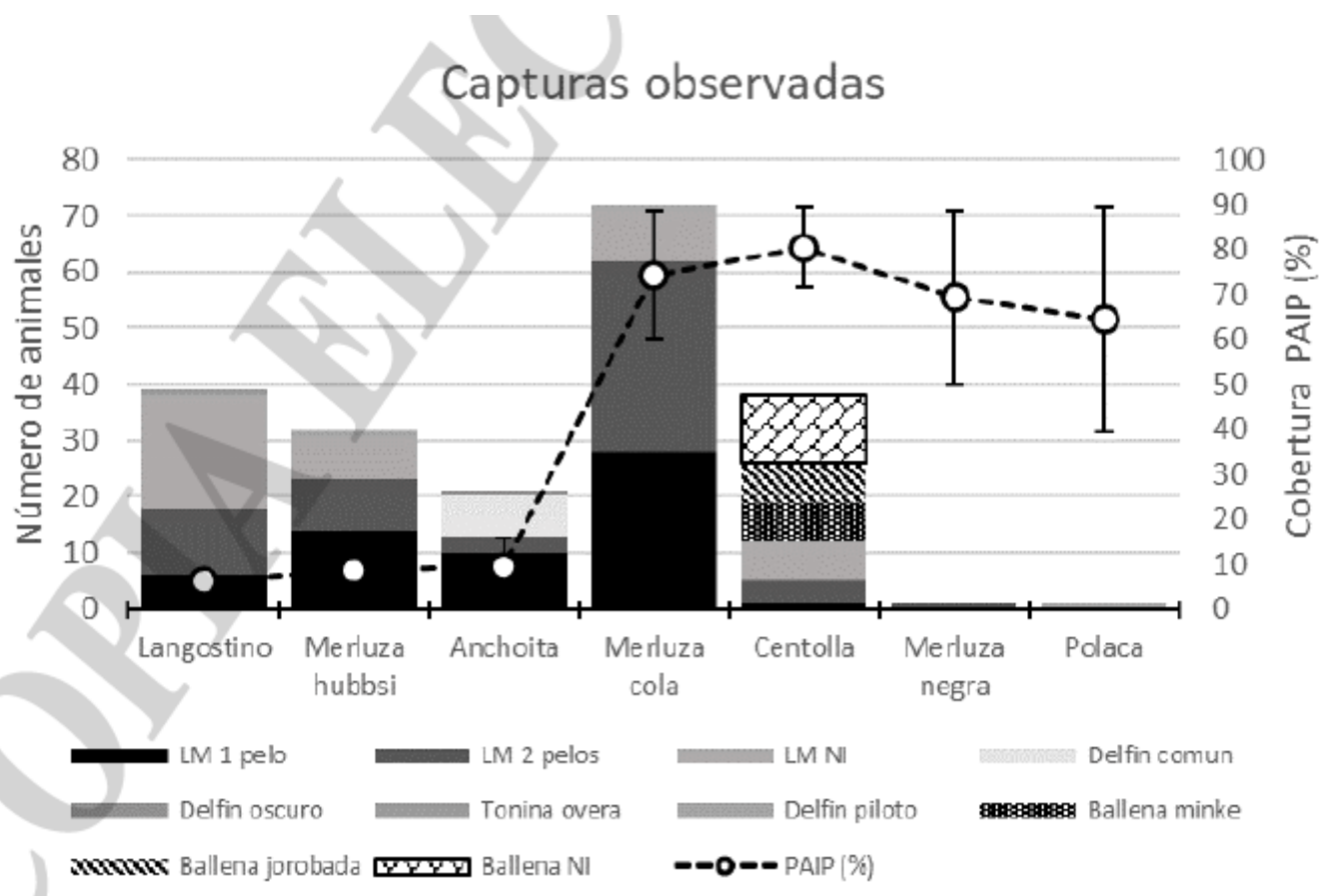


Fig. 27. Catch of marine mammals recorded between 2014 and 2018 according targeting fishery and species. The first column shows the unwanted catch of marine mammals with shrimp fishery. (Source: Rodriguez *et al.*, 2023)

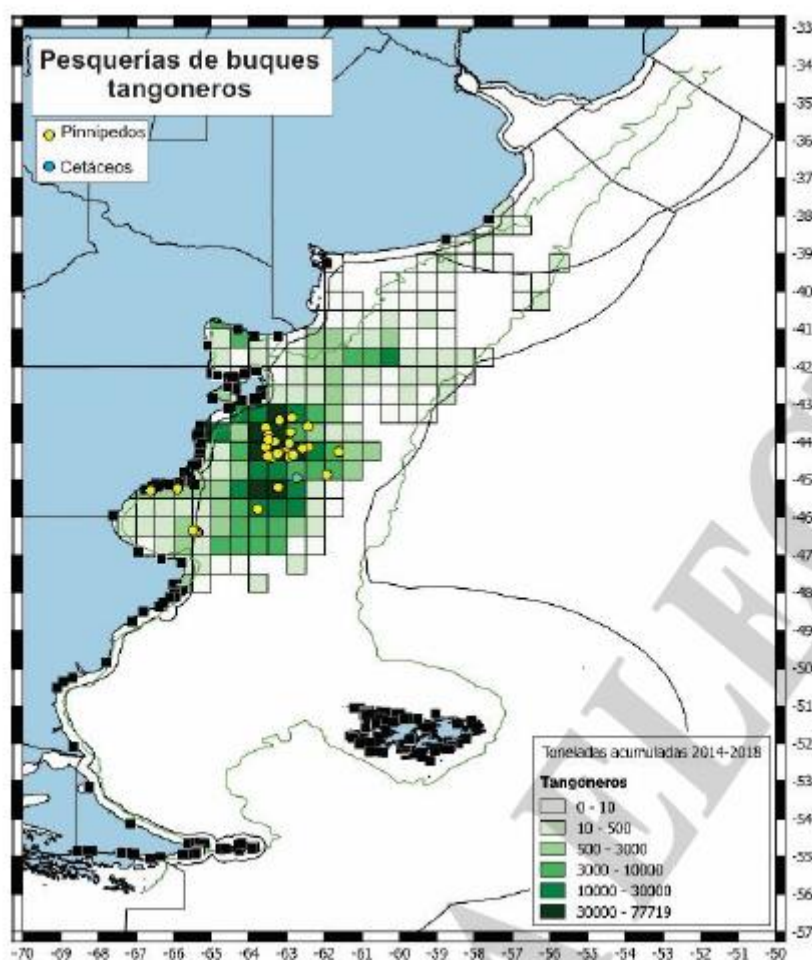


Fig. 28. Spatial distribution of pinnipeds catches in the shrimp fishery. Black squares indicate coastal settlements of sea lions (Source: Rodríguez et al., 2023)

A. Some relevant information about seabirds

According to Quintana *et al.* (2022), coastal Patagonia breeding seabirds include species from five families, Spheniscidae (penguins), Procellariidae (petrels), Phalacrocoracidae (cormorants), Laridae (gulls and terns) and Stercorariidae (skuas), and constitute one of the best-studied groups of higher-trophic-level organisms in the Patagonian coast of Argentina. Seventeen seabird species breed along the 3,400 km coast from southern Buenos Aires (38°58' S) to Tierra del Fuego (54°50' S) (Figure 29). This includes three penguins (Magellan penguin, *Spheniscus magellanicus*; Rockhopper penguin, *Eudyptes chrysocome*; and Gentoo penguin, *Pygoscelis papua*), one petrel (Southern Giant Petrel, *Macronectes giganteus*), five shags (Imperial shag, *Leucocarbo atriceps*; Rock shag, *L. magellanicus*; Red-legged shag, *Poikilocarbo gaimardi*; Neotropical shag, *Nannopterum brasilianus*; and Guanay shag, *L. bougainvillorum*), three gulls (Kelp gull, *Larus dominicanus*; Dolphin gull, *L. scoresbii*; and Olrog's gull, *L. atlanticus*), three terns (South American tern, *Sterna hirundinacea*; Cayenne tern, *Thalasseus eurygnathus*; and Royal tern, *T. maximus*), and two skuas (Brown skua, *Catharacta antarctica*, and Chilean skua, *C. chilensis*) (Yorio *et al.*, 1999; Yorio, 2000). Almost the 70% of these species are not abundant and have breeding populations of less than 5,000 pairs (Yorio *et al.*, 1999).

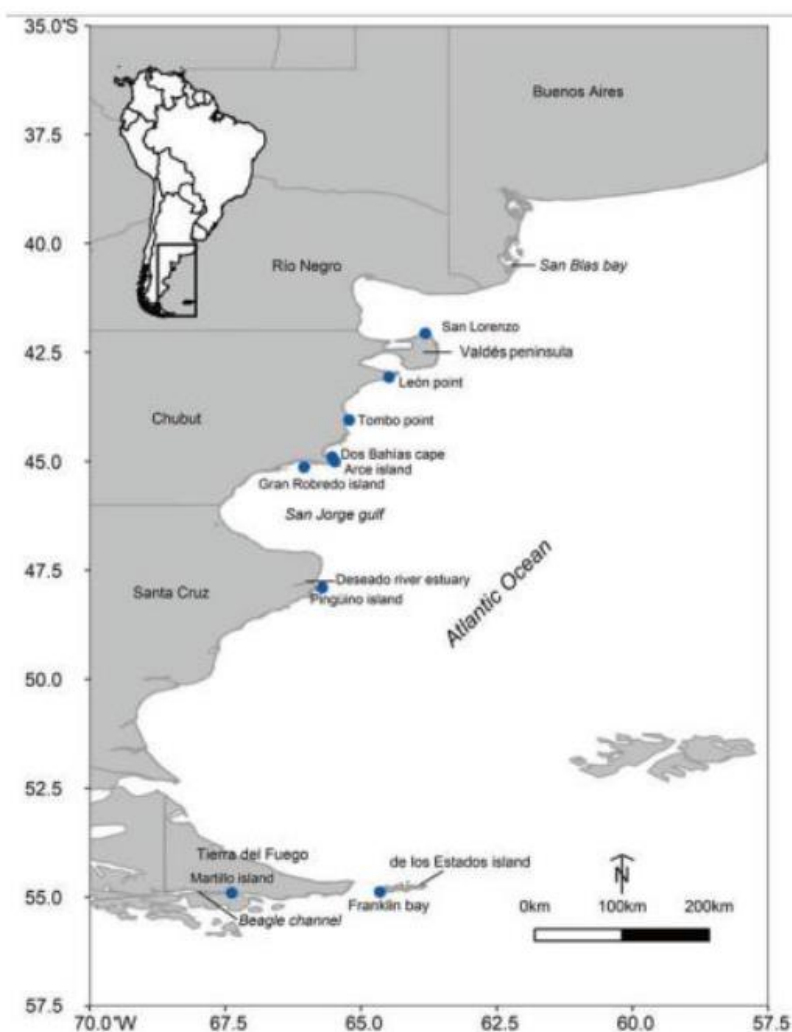


Fig. 29. Geographical location of Patagonian seabird colonies (Quintana *et al.*, 2022)

Magellan penguin is widely distributed (41° to 55° S) and is the most abundant with a breeding population size of more than one million pairs (BirdLife International, 2020), an order of magnitude higher than all other Patagonian seabirds (Schiavini *et al.*, 2005). The list is followed by the Kelp gull and the Imperial shag with more than 75,000 and 50,000 breeding pairs, respectively (Yorio, 2000; Frere *et al.*, 2005), chronologically and correspondingly wide distributions (38° - 55° S). Other seabirds, such as Red-legged shag, Olrog's gull, and Dolphin gull have a highly restricted distributions or nest in small colonies at a few sites in Argentina (Yorio *et al.*, 1999). In addition to the 17 breeding seabirds, there are more than 40 non-breeding species which use the Argentine continental shelf as a foraging ground, mostly procellariiforms (Favero & Silva Rodriguez, 2005).

According to Gonzalez-Zevallos *et al.* (2011), many seabirds are attracted to trawl vessels to make use of fishery waste, and often this attraction results in increased incidental mortality. The authors assessed seabird attendance and associated incidental mortality at the Argentine red shrimp (*Pleoticus muelleri*) trawl fishery in San Jorge Gulf, Argentina. Information on seabird numbers was gathered in the autumn and winter 2006 and spring 2008, while information on seabird incidental captures was obtained for the 2005-2007 period. 18 seabird species attended vessels, and the 2 most frequent and abundant seabirds were Kelp gull (*Larus dominicanus*) (>94%, <100) and black-browed albatross (*Thalassarche melanophris*) (>94%, <55). Seabird numbers were significantly lower in winter than the other 2 seasons and highest during discarding activities. Species incidentally killed in nets were the Magellan penguin (*Spheniscus magellanicus*) and imperial cormorant (*Phalacrocorax atriceps*), with a mean capture rate of 0.048 birds/haul, and for both species, mortality decreased with distance to the coast. Considering the fishery's fishing effort during each month, the estimated total mortality in the study period was 895 (95% CI: 572 to 1339) penguins and 172 (95% CI: 69 to 305) cormorants. Over 95% of the recorded mortality occurred in 2005, the year when the trawling moratorium generally implemented in the area was not enforced. No interactions with warp cables were recorded.

Marinao & Yorio (2011) evaluated seabird attendance and incidental mortality at coastal trawl vessels targeting Argentine red shrimp (*Pleoticus muelleri*) in the Isla Escondida fishing area, Argentina, during 2006–2007 and 2007–2008 fishing periods. 8 seabird species attended vessels, and the most frequent and abundant seabird (percent occurrence, mean number per haul) in the two seasons was the Kelp gull (*Larus dominicanus*), followed by the black-browed albatross (*Thalassarche melanophris*). 11 Magellan penguins (*Spheniscus magellanicus*) and one Imperial Shag (*Leucocarbo atriceps*) were killed in nets with a mean capture rate of 0.003 and 0.0003 birds per haul, respectively. The estimated total number of birds killed was 53 penguins and 5 shags considering the total number of hauls made by the fishery in the two seasons. No contacts between seabirds and warp cables were recorded. Coastal shrimp vessels generally operated between 15 and 20 km offshore, at a mean distance from the main Kelp gull colony (Punta Tombo) of 43.9 km. At least 100 fish and invertebrate species were discarded, mostly Argentine hake (*Merluccius hubbsi*). Total amount discarded per season by this coastal fishery in the two seasons was estimated at 3,284 and 6,590 t, respectively. The coastal shrimp fishery in the Escondida Island area appears to have a small impact on seabirds in terms of incidental mortality but provides significant amounts of supplementary food during the breeding season of the Kelp gull.

Gandini *et al.* (1999) analysed the effect of the shrimp fishery on Magellan penguins (*Spheniscus magellanicus*) in two ways: (1) determine whether penguins were incidentally killed and the magnitude of incidental take and estimate the overlap between penguin diet and fish bycatch of the shrimp fishery (total capture excluding shrimp and seabirds). The authors worked with the fishing fleet operating at San Jorge Gulf with onboard observers over 200 days in 1995–1997 period, sampling fishery bycatch, and entangled birds. Penguins were affected during the austral summer. Estimations of mortality rates showed 0.33% of the breeding population at San Jorge Gulf is incidentally killed by the shrimp fishery every summer. Bycatch in shrimp fishery nets was composed of species important as penguin prey (anchovy and hake) in higher proportions during summer. The daily bycatch of these species was higher than the total calculated daily intake for all penguins breeding in the Golfo San Jorge. Similar results were obtained by Boersma & Redstock (2009). They showed that individuals forage in relatively coastal areas during most part of the breeding season and may be spatially overlapping with coastal trawlers operating in the Escondida Island fishing area north of this colony (Marinao & Yorio, 2011).

Black-browed albatrosses (*Thalassarche melanophris*) disperse over the Argentinean Continental Shelf and neighbouring waters during their non-breeding season. It is one of the most frequent seabirds attending fishing vessels and the most common Procellariiform in the bycatch of longliners and trawlers in the area. Understanding the use of fishery discards by this species is an important issue when assessing the potential effect of strategic discard management in decreasing the abundance, interactions, and mitigating mortality. Mariano-Jelicich *et al.* (2013) analysed carbon and nitrogen stable isotope compositions in the blood of black-browed albatrosses to assess the relative contribution of discards from different fisheries to the diet of this species in winter. Samples were obtained in winter 2011 from fishing vessels operating between 41° - 43° S and 57° - 59° W. No sex differences in $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ were observed. Results indicate that during their nonbreeding season, isotopic signatures of black-browed albatrosses are closer to discards and offal generated by fisheries and by trawlers. The shrimp-trawler fleet operates mostly in San Jorge Gulf from mid-February to November. It is constituted by 70–80 vessels that target the Argentine red shrimp (*Pleoticus muelleri*). In this fishery, the Argentine hake constitutes the bulk of discards estimated to be about 40,000 t during 2007.

B. Some relevant information about South American sea lion (*Otaria flavescens*)

The South American sea lion (*Otaria flavescens*) is one of the most common and abundant marine mammal species in the southwestern Atlantic and is distributed along the coasts of South America from Peru to southern Brazil in both the Pacific and Atlantic Oceans (Vaz Ferreira, 1982; Crespo & Pedraza, 1992).

South American sea lions are considered opportunistic and broad-spectrum feeders, feeding on fish, squid, crustaceans, and occasionally on seabirds (Vaz Ferreira, 1982; George-Nascimento *et al.*, 1985; Crespo *et al.*, 1997).

The trend of sea lion stocks in northern and central Patagonia has followed a pattern of decline and recovery during recent decades. The northern Patagonia stock declined to one fifth of its original population size between 1930 and the mid-1960s as consequence of intense harvesting. Then it remained stable between 1972 and 1990, when it began to recover (Crespo & Pedraza, 1992). The central Patagonia stock had not been harvested but declined in a similar proportion during the mid-century and has shown evidence of population increase in recent years, a fact that suggests a strong connection and interchange of individuals between these regions (Reyes *et al.*, 1999).

World population was estimated at 275,000 individuals, more than two decades ago (Vaz Ferreira, 1982). At present, the total population on the Argentine coast is estimated close to or above 100,000 individuals, although the available knowledge is greater around Peninsula Valdes and the San Matias Gulf, where it is estimated that about 45,000 sea lions live (Dans *et al.*, 2004). In the south of Chubut, north of the San Jorge Gulf, about 35,000 live (Reyes *et al.*, 1999), while in Santa Cruz and Isla Grande de Tierra del Fuego an estimated population of 22,000 sea lions (Schiavini & Raya Rey, 2004).

The population of the Patagonian coast is expanding, although it has not yet recovered its original population size (Figure 30).

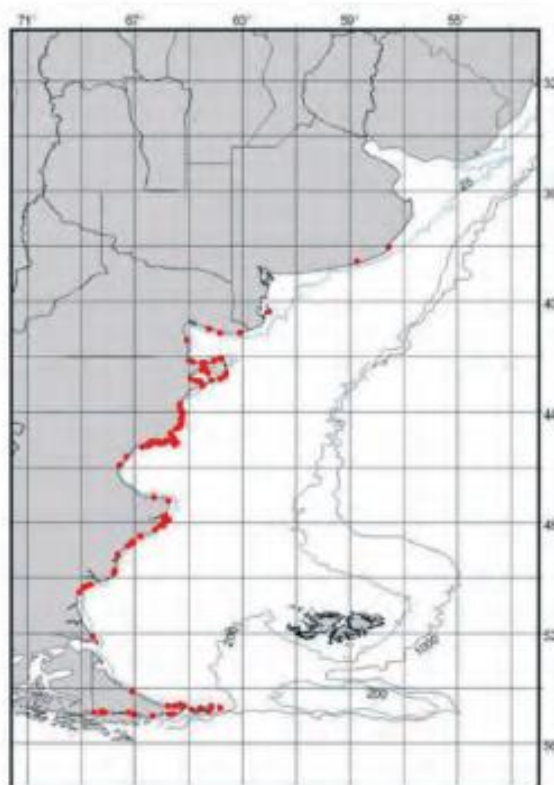


Fig. 30. Colonies of South American sea lions in Argentina

C. Some relevant information about *Cephalorhynchus commersonii*

It is a very common species on the Argentine coast and there is an endemic population of the coasts of Patagonia and another of the Kerguelen Islands, which have been named as subspecies (Robineau *et al.*, 2007). On the Patagonian coast the limit of its distribution is in Punta Norte (Valdes Peninsula, Chubut), although individuals can be found, occasionally, further north and within the San Matias Gulf, San Jose Gulf and eventually in the Nuevo Gulf (Figure 31). Bastida & Rodriguez (2003) cited it up to the mouth of Rio Negro. However, usually in these cases, there are small groups or even isolated animals.

In the Province of Chubut, the abundance of dolphins reaches a thousand individuals. In the northern limit of its distribution, the Marine Mammal Laboratory of CENPAT made the estimation of abundance obtaining a value of 300 individuals (Mora, 2002). To the south the abundance increases, since from the Magellan Strait to the south of Tierra del Fuego the dolphins reach several thousand individuals.

The diet consists of juvenile hake (*Merluccius hubbsi*), anchovies (*Engraulis anchoita*) and squids (*Illex argentinus* and *Loligo gahi*), sardines (*Spratus fueguensis*), silversides (*Odontesthes nigricans*), hoki (*Macruronus magellanicus*), crustacean species (Bastida *et al.*, 1988; Crespo *et al.*, 1997; Koen Alonso, 1999; Beron Vera *et al.*, 2001; Pedraza, 2007).

It is common to find groups of dolphins feeding at the mouth of rivers such as Chubut or in estuaries where the incoming and outgoing tidal current is very intense, as in the estuaries of Puerto Deseado, San Julian, Ria Coy or Rio Gallegos.

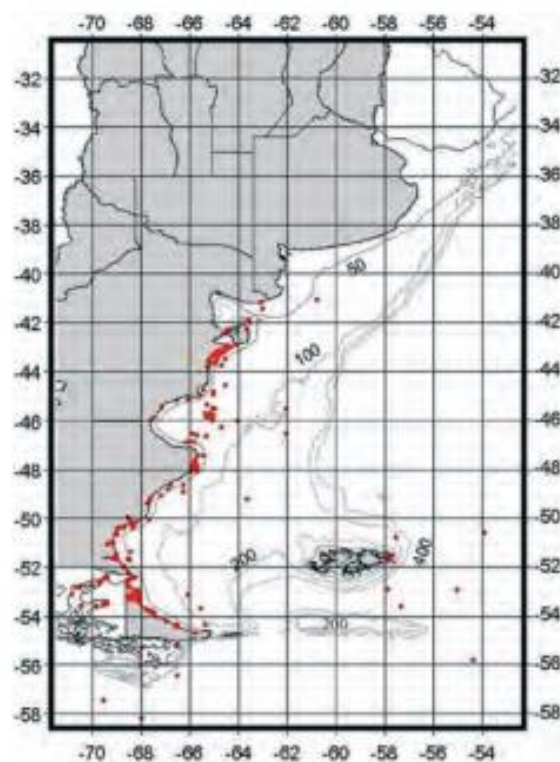


Fig. 31. Records of dolphins in the Argentine Sea.

b. Habitat

The spatial distribution of the areas where more than 2% of shrimp catches have been recorded is observed in the Figure 32. The fishing area within the Province of Chubut, represented in red, covers 3,624 km². The blue quadrants correspond to areas under national jurisdiction with a total area of 88,988 km². Considering that the total spatial distribution of shrimp in the Exclusive Economic Zone (EEZ) is 660,466 km², it is observed that almost 95% of the total catches come from just 14% of the area where the species is distributed (De La Garza, 2025).

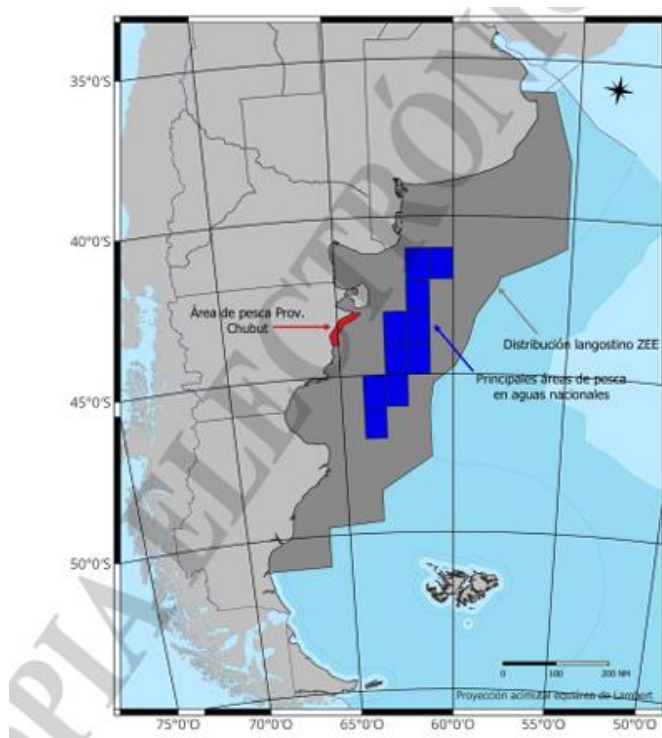


Fig. 32. Main shrimp (*Pleoticus muelleri*) catch areas 2019-2024 series. (Source: De La Garza, 2025)

During 2024, the area covered by the fleet is represented by 6,531 fishing trips that were reported electronically by commercial freezer and chilling vessels, including operations carried out during surveys. Of the total fishing trips reported to INIDEP, only 8% corresponded to the chilling segment, demonstrating significantly low coverage in this segment of the fleet.

The southern area where the fleet operates is characterized by three frontal systems—North, South and Outer of San Jorge Gulf. The North and South SJG fronts are associated with shrimp reproductive aggregations during late spring and summer. While both function as spawning/nursery grounds, they differ from each other in many respects. The thermohaline South SJG front has its maximum expression during the winter, reflecting the influence of the low-salinity Magellan Plume, while the thermal northern San Jorge Gulf front develops during spring and summer as the water column becomes stratified in the central basin of the gulf. Wind-related down-welling inshore of the front prevails in the northern of San Jorge Gulf and upwelling in the southern of San Jorge Gulf frontal area. Chlorophyll-a is concentrated near the thermocline on the stratified side of the northern of San Jorge Gulf, and for that reason, it is not detected by remote sensors during the spring bloom and the summer but becomes apparent offshore from the location of the front when the thermocline deepens during the fall (May). In the southern of San Jorge Gulf front, Chl-a concentration is apparent inshore from the front all year-round, related in part to upwelling-mediated resuspension. The northern end of the outer front coincides in time and space with a recurrent non-reproductive aggregation of red shrimp between November and January and is presumably related to foraging.

In northern of 42° S, seabed with scallop and sand were predominant, whereas in AVPJM sandy and muddy seabeds were recorded as well as some areas with shells and sponges.

The water column is stratified and with strong thermocline in summer, with temperature differences of approximately 7° C between the bottom and surface; in winter, the column is mixed or a 0.5° C deltaT thermocline (Piola, 2008). The most relevant feature is the thermal/tidal front of the Valdes Peninsula that occurs during spring/summer and separates stratified offshore waters from vertically mixed coastal waters. The tidal front may extend southward to the mouth of San Jorge Gulf (Acha *et al.*, 2004). This vertical mixture produces nutrient enrichment and high productivity (Acha *et al.*, 2004).

The circulation is in the SE-NE direction, with a counterclockwise turn within San Jorge Gulf (Piola & Rivas, 1997; Piola, 2008). The different fractions of zooplankton are differentially distributed with respect to the tidal front. Spawning, larvae and juveniles of squid, anchovy, hake and southern blue whiting are associated with the front (Lovrich, 2014).

Fernandez *et al.* (2007) used a canonical correspondence analysis to investigate the relation between the distribution of Argentine red shrimp in the south of the San Jorge Gulf (between parallels 46°30' and 47°00' S), and between meridian 66°00' W and the coast), in the Winter of 2003 and the physical and chemical characteristics of surface sediments and bottom waters. The authors found that there was a West-East pattern in length distribution. Higher densities of adults larger than 41 mm carapace length and of adults between 31- and 40-mm carapace length were found towards the northeast, while higher densities of pre-recruits (juveniles between 4 mm and 24 mm of carapace length) were found towards the West coast of the San Jorge Gulf. The in-between area presented the highest densities of sub-adults (specimens between 25- and 30-mm carapace length), and intermediate density values of pre-recruits, of adults between 31- and 40-mm carapace length, and of adults larger than 41 mm carapace length. The authors note that these results are consistent with earlier work produced by INIDEP, and with the results of the mark-recapture program. Furthermore, the study found a relationship between the spatial distribution of the juvenile and adult categories and depth and total organic carbon: higher adult densities were related with greater depths and lower values of total organic carbon, while higher juvenile densities were related to lower depths and greater values of total organic carbon.

Besides, Fernandez *et al.* (2011) analysed the relationship between the relative abundance of mature and impregnated females of *P. muelleri* and environmental variables in spring and summer, using generalized additive models combined with general linear models. Samplings and data were obtained during INIDEP research cruisers in January 2000, 2001, 2005, 2007, March 2006, and November 2004, 2005, and 2006, in the area between 43°20' and 47°00' S, and between 64° W and the coast. The results showed that, during the reproductive period, the distribution and abundances of mature and impregnated females in the San Jorge Gulf were related to depth, bottom water temperature and bottom water salinity. The relationship was so that abundance increased along with temperature for mature and impregnated females; while, in relation to salinity, it decreased for mature females and increased for impregnated females.

i) Substrate

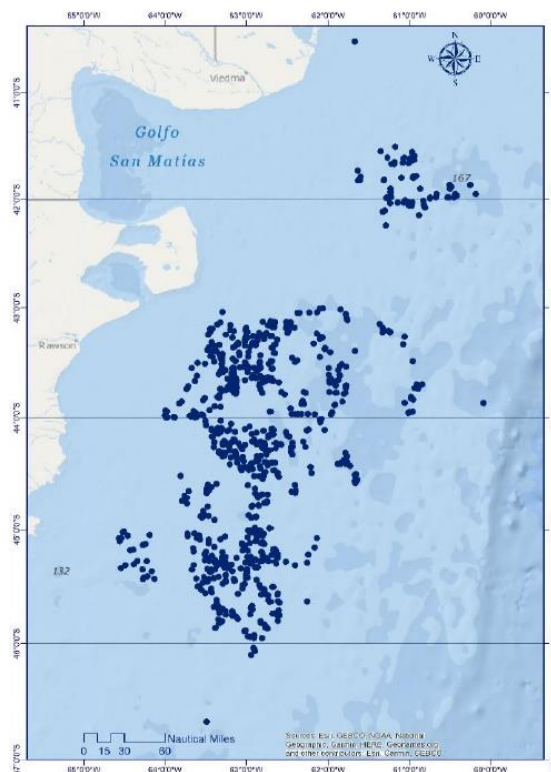
According to Roux & Fernandez (1997), between Cabo Dos Bahias and Tres Puntas, and the coast of Chubut (Area 1), the substrate is characterized by a medium to coarse fraction, with a predominance of gravel and sand. The biogenic fraction is represented by remains of pelecypod valves. This type of bottom is hard substrates that allow the settlement of many benthic organisms forming a more diversified community where bryozoans, coelenterates and poríferas predominate. Bottom of San Jorge Gulf (Area 2), predominate fine sand and mud, this type of bottom provides food and shelter for adult shrimps (Boschi, 1989).

Between the two areas, exists a transition zone with meadows of *Macrocystis* and phanerogams. Juvenile red shrimp are associated with *Macrocystis* sp, *Renilla* sp, *Peltarion spinosulum*, and *Serolis schythei*. Similar observations were made by Fernandez *et al.* (1993) for areas of the Patagonian coast. The physical structure that makes up these benthic communities, of voluminous and intertwined appearance, would constitute the optimal habitat for the development of shrimp juveniles. The study corroborates the clear link of shrimp juveniles with a defined and benthic association, which would provide food and shelter during this stage of their life cycle. Roux & Fernandez (1997) corroborate the clear link of juveniles with a defined and benthic association, which would provide food and shelter during this stage of their life cycle.

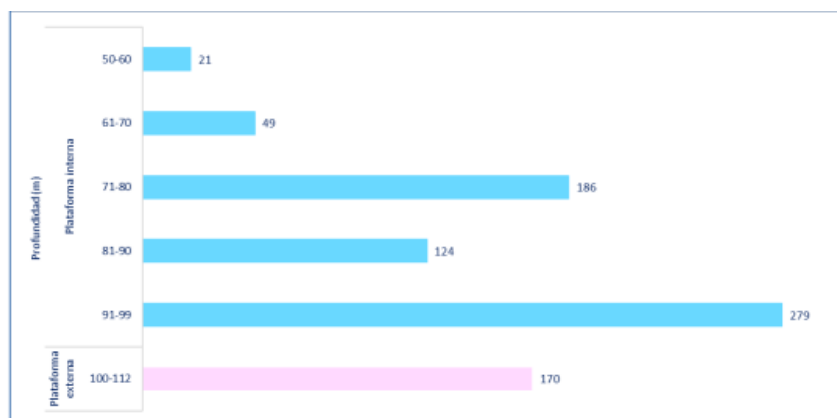
Likewise, there is a marked correspondence between benthic associations and the granulometric characteristics of the substrate, with two well-defined areas, the extremes of the San Jorge Gulf and Chubut coast present coarse granulometry, being much of its fauna associated colonial. The central, southern and mouth sectors of the Gulf with fine sandy-muddy sediments, whose representative fauna are molluscs, echinoderms, crustaceans and polychaetes.

In the study carried out by Parker *et al.* (1997), on the seabed of the Argentine continental shelf, it is indicated that 65% of the sediments that make up the bottom of the continental shelf are composed of predominantly fine sand-type sediments, with medium to very fine fractions and gravels and shells comprise 25% of the surface of the Shelf. Its distribution is irregular, dominating the shells north of 43° S and the gravels south of it, while rock outcrops do not exceed 2%.

Private On-board Observer Program collected data on the type of sediments on which the shrimp offshore fleet operates during the 2018-2019, 2022-2024 fishing seasons located in federal water between 40.51° - 46.67° S and 60.08° - 64.56° W (Figure 33.A). It was observed that depth at which the fishing hauls were made by the fishing fleet ranged from 50 to 112 m (Figure 33.B), most of them between 90 and 100 m. Sediment data comes from the samplings obtained by residual sediment present in the fishing gear when the net reaches the deck of the vessel. Substrates were composed by mainly muddy bottoms and sandy bottoms; the rest was described as biogenic bottoms and rock (Figure 34).



A.



B.

Fig. 33. A. Fishing areas observed by POAB of Argentine red shrimp offshore fishery during 2018-2019, 2022-2024 seasons. B. Observed depth by POAB at which the fishing fleet operated during last fishing season (Palacios, 2024)

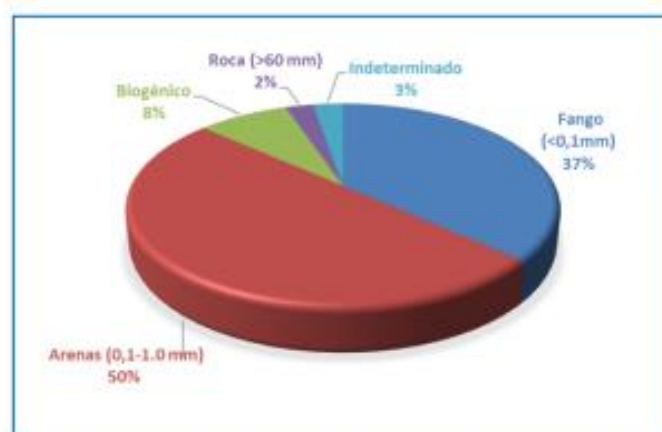


Fig. 34. Types of sediments that make up seabed on which shrimp fleet operated during study period (Source: CEDEPESCA, 2023).

Types of sediments observed in the fishing area during the study period are consistent with the information provided by the Hydrology Service Naval and with what was reported by Parker *et al.* (1997), where it is stated that the funds of the Patagonian shelf are composed of 6 types of sediments: sand, mud, gravel, shell, rock and coarse; being sands and mud the most widely distributed. The sands cover approximately 65% of the platform (Figure 35), followed by gravel and shells on 25%, mud by 8% and rocky outcrops that do not exceed 2% (CEDEPESCA, 2023).

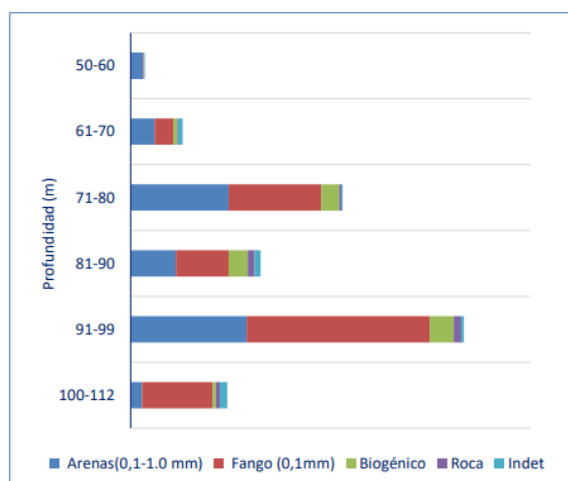


Fig. 35. Sediment types of distribution in depths as recorded by the Private On-board Observers Program (CEDEPESCA, 2023).

ii) Geomorfology

According to studies carried out by Parker *et al.* (1997) on seabed, the Patagonian shelf is characterized by low relief and low slopes, without big variations of depth. Near Rawson, at the boundary between the shelf and the continental slope, is reached 120 m depth (Figure 36).

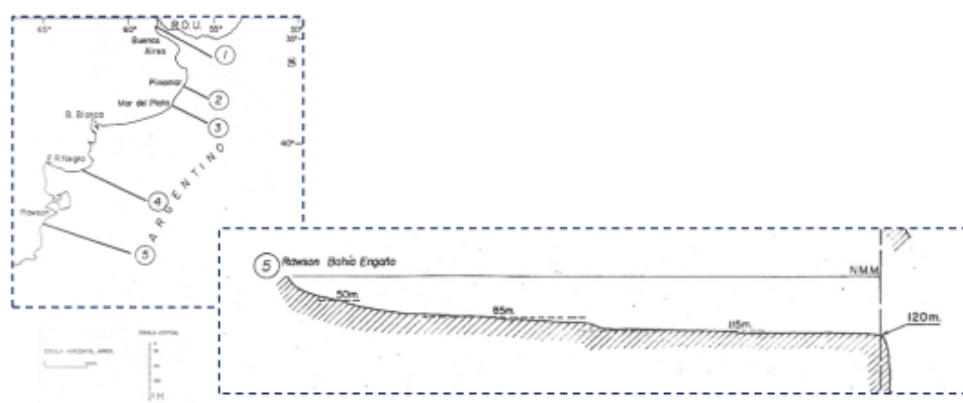


Fig. 36. Underwater topographic profile of the Patagonian shelf off Rawson (Source: Parker *et al.*, 1997).

iii) Biota

INIDEP research cruises from 2017 and 2018 (Souto, 2018a; 2018b; 2019). Souto (2018a; 2018b) found that the best represented phyla were Arthropoda (Subphylum Crustacea), Echinodermata and Mollusca. The shrimp contributed with 86% of the relative biomass, followed by the crustaceans *Munida gregaria*, *Pterigosquilla armata*, the spider crab *Lithodes santolla*, the crustacean *Petrunkewitchi* sp., the cnidarian *Renilla* sp. and poriferans. Clustering analysis and SIMPROF tests indicated the existence of 2 groups of stations according to species composition and contribution to biomass, which were statistically significant. The results show that the benthic communities inside the San Jorge Gulf and the Chubut coastal seabed and waters adjacent to the Gulf remained almost unchanged, in their structure, specific composition and spatial distribution with respect to the 2017 campaign.

During 2019 campaign (Souto, 2019), there were few variations in the values of the indices, parameters and species associations compared to what was observed in 2018. There were also no major changes in the frequency of occurrence of species, with sustained growth of the shrimp *Peisos petrunkevitchi*. In relation to the grouping of species between fishing hauls, 4 groups were identified, two of them inside the San Jorge Gulf, one of them covering the mouth of the Gulf and a last one covering the Rawson coast. The difference between groups is mainly due to the distribution and abundance of the shrimp *Pleoticus muelleri*. It is important to note that in group 2, corresponding to the outermost part of the northern San Jorge Gulf, the presence of *Renilla* sp. stood out. After the shrimp, it was the one that contributed the most to the internal similarity of the group, with a frequency of occurrence and relative biomass that was important in relation to the rest of the benthic invertebrates.

As part of the shrimp fishery accompanying fauna, Private On-board Observer Program, during 2018-2019 and 2022, in 196 fishing days and 829 hauls, identified 8 taxonomic groups of invertebrates: Tunicates, Brachiopods, Cnidarians, Crustaceans, Echinoderms, Molluscs, Polychaetes and Poríferas.

The echinoderms were the most diverse group with 19 taxa (of which 9 were identified at species level), followed by crustaceans with 16 taxa (13 identified at species level) and molluscs with 12 taxa (6 identified at species level). For the species *Munida gregaria* it was not possible to identify the morphotype.

The crustacean was the most representative invertebrates with a total of 973 records, followed by echinoderms - 832, molluscs - 751, poríferas - 455, tunicates - 285, polychaetes - 282, brachiopods - 162 and cnidarians - 157. The species with highest frequency of occurrence were *Illex argentinus* with 36.8% and *Libidoclaea granaria* with 34%. However, the group most frequent was poríferas with 44.3%.

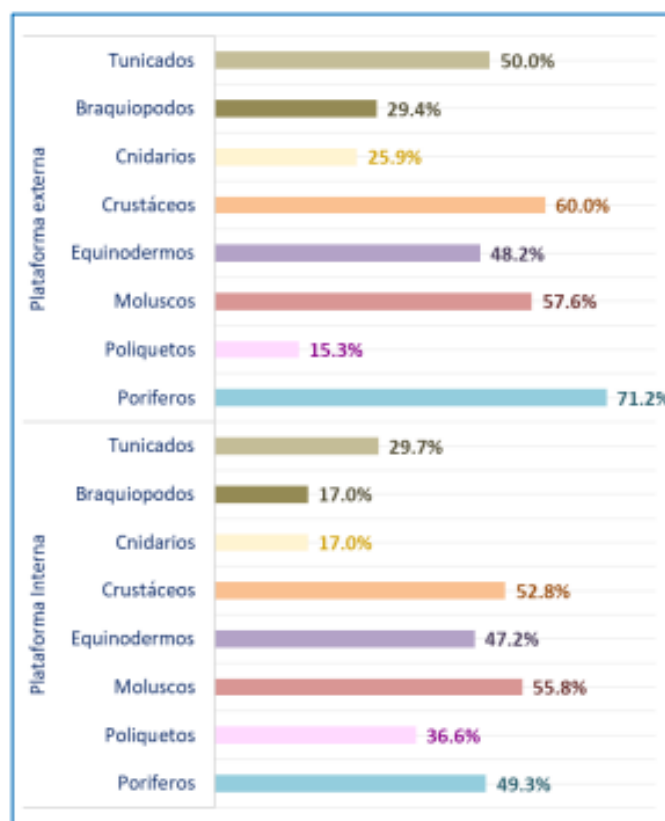


Fig. 37. Taxonomic groups identified as bycatch component of the Argentine red shrimp offshore fishery recorded by POAB (CEDEPESCA, 2023).

A total of 659 fishing hauls were recorded at depths between 56 and 99 m depths. A total of 59 species of invertebrates belonging to the following groups were identified: tunicates, brachiopods, cnidarians, poriferae, annelids, molluscs, echinoderms and crustaceans. Sponges were the most representative with a frequency of occurrence of 50.38%, and the tractor crab - *Peltarion spinosulum* with 34.14%.

Between 100 and 112 m depths, 170 fishing hauls were recorded. A total of 47 invertebrates belonging to the following groups were identified: tunicates, brachiopods, cnidarians, poriferae, annelids, molluscs, echinoderms and crustaceans. Sponges were the most representative with a frequency of occurrence of 72.35%, followed by tunicates with 52.35% and the spider crab - *Libidoclaea granaria* with 48.24%.

Table 17. Maximum size of some invertebrates identified as accompanying fauna of the shrimp fishery during the study period (Source: Roux et al. 2007; Bremec et al., 2003).

Species	Size
Ascidians – Tunicates undef.	It is identified 5 taxa of tunicates associated to the shrimp fishery. There are 2,000 species of tunicates of microscopic sizes up to 30 cm in diameter. The tunicate species reported as accompanying fauna of the Patagonian shrimp fishery do not exceed 20 cm.
Brachiopods undef.	It is reported 2 brachiopod species related with the shrimp fishery: <i>Magellania venosa</i> that can achieve 9 cm of length, and the other one was not identified. Bremec et al. (2003) reported the presence of <i>Terebrattella dorsata</i> with 6-9 cm of length.
Sponges – Porifera undef.	It is identified 5 taxa of sponges, but only 3 was recognized: <i>Tedania sp.</i> , <i>Callyspongia sp.</i> and <i>Cliona sp.</i> (Roux et al., 2007). According Bremec et al. (2003), <i>Tedania sp.</i> and <i>Callyspongia sp.</i> can measure 2-30 cm and 5-15 cm, respectively.
Sea anemone – <i>Actinostola crassicornis</i>	Between 3 and 12 cm.
<i>Aequorea sp.</i>	These species can achieve up to 10 cm of diameter.
Polichaetes undef.	A tube-like polychaeta taxon has been reported in the study area. According to the guidance of Bremec et al. (2003) in the operating area of the shrimp fishery, tube polychaetas have been recorded such as: <i>Chaetopterus variopedatus</i> and <i>Phyllochaetopterus sp.</i> , species whose calcium carbonate tubes reach sizes of 30 and 10 cm, respectively.
'Raton de Mar' – <i>Aphrodita sp.</i>	Can measure 14 cm length.
<i>Pitaria rostrata</i>	Can achieve 5 cm length.
<i>Odontocymbiola magellanica</i>	Adult individuals can achieve 20 cm length.
<i>Arbacia dufresnei</i>	Can achieve 5 cm of diameter.
<i>Pseudochinus magellanicus</i>	Can achieve 3 cm of diameter.
<i>Dipasterias brandti</i>	Achieve 15 cm arm length.
<i>Henricia obesa</i>	Achieve a medium size of 4 cm arm length.
<i>Calyptaster sp.</i>	Individuals can achieve 1.8-6 cm of central discal diameter.
<i>Acodontaster sp.</i>	Individuals can achieve 1-2.5 cm of central discal diameter.
Ophiuroidea	According Bremec et al. (2003) and Roux et al. (2007), it knows 4 species in the area: <i>Ophiactis asperula</i> (0.3-0.9 cm); <i>Ophiacanta vivipara</i> (0.4-1.4 cm); <i>Gorgonocephalus chilensis</i> (0.8-11 cm); and <i>Ophiuroglypha lymanii</i> (0.3-2.4 cm).
<i>Pterygosquilla armata</i>	Can achieve at least 8cm total length.
<i>Munida gregaria</i>	Can achieve 4 cm of shell size.
<i>Lidiodoclaea granaria</i>	Can achieve 10.5 cm of shell size.
<i>Lithodes santolla</i>	Can achieve 20 cm of shell size.
<i>Propagurus gaudichaudi</i>	Individuals of 3.5-6 cm length.
<i>Eurypodius latreillei</i>	Can achieve 4.5 cm length.
<i>Peltarion spinosulum</i>	Can achieve 5 cm of shell size.

Gaitan & Alemany (2024) focused on the analysis of functional features, based on assessment campaigns carried out by INIDEP scientific vessels monitor benthic communities associated with bottom trawl fisheries in the Argentine Exclusive Economic Zone (EEZ) and the Argentine Uruguayan Common Fishing Zone (AUZ). This monitoring covers a large area of the Southwest Atlantic, between 34° and 55°S, encompassing the Argentine and Magallanes biogeographic provinces (Balech & Erlich, 2008). The objective of this study is to determine the most ecologically relevant benthic invertebrate species, based on their distribution and abundance, in different regions between 34° and 55° S. Second objective focuses on characterizing some of the main biological traits of the species identified in the first objective and defining them by sector, to assess the existence of certain characteristics that increase the susceptibility of certain taxa to the effects of fishing trawls. Finally, as a third objective, analysed whether there is a spatial overlap between the distribution patterns of the main species (recorded in at least two of the sectors analysed; excluding those of commercial interest because they are routinely monitored) and the distribution of bottom trawls.

The fleets operating with bottom trawls were selected: chilling and freezer vessels targeting *Merluccius hubbsi* (Argentine hake), freezer vessels targeting *Macruronus magellanicus* (Argentine hoki) and *Dissostichus eleginoides* (Patagonian toothfish); and freezer vessels targeting *Zygochlamys patagonica* (scallop). It does not include the shrimp fishery specifically, but it does include the area where it operates.

During these campaigns, the epibenthic fauna, which lives on the seafloor and is captured as bycatch, was analyzed. Among them, macroinvertebrates (> 1 mm) and mega invertebrates (> 1 cm) are the groups that, due to their size, are most likely to be retained by bottom fishing gear (Gaitan & Souto, 2017; Gaitan & Luz Clara, 2019; Gaitan, 2020; Gaitan *et al.*, 2020). Furthermore, these surveys employ bottom trawls like those used by commercial fishing fleets, allowing for direct comparison of the results obtained. This facilitates the identification of the main benthic fauna species likely to be affected by bottom trawls targeting various fishery resources.

Eleven taxa were identified as dominant (IIR > 1%) in at least two analysed sectors. These include commercially exploited species such as the Southern king crab (*Lithodes santolla*), Patagonian scallop (*Zygochlamys patagonica*), and the shrimp (*Pleoticus muelleri*). Four of them (basket star - *Gorgonocephalus chilensis*, ascidian - *Paramolgula gregaria*, sponges (*Tedania* sp.), and tunicates Polyclinidae) showed dominant presence in three sectors: Southern shelf (PA); Argentine Uruguayan Common Fishing Zone (ZCPAU); and, Patagonian shelf (PP), being the shrimp distribution. Focusing exclusively on presence data (even without reaching an IIR > 1%), it was observed that 10 of these taxa (except for *P. muelleri*, whose distribution was more limited) expanded their distribution to an additional sector. That is, these 10 taxa were present in at least three of the sectors analysed, highlighting their wide distribution, with a latitudinal range spanning from 34° - 36° S to 54° - 55° S. Density of the dominant species is shown in the Figure 38.

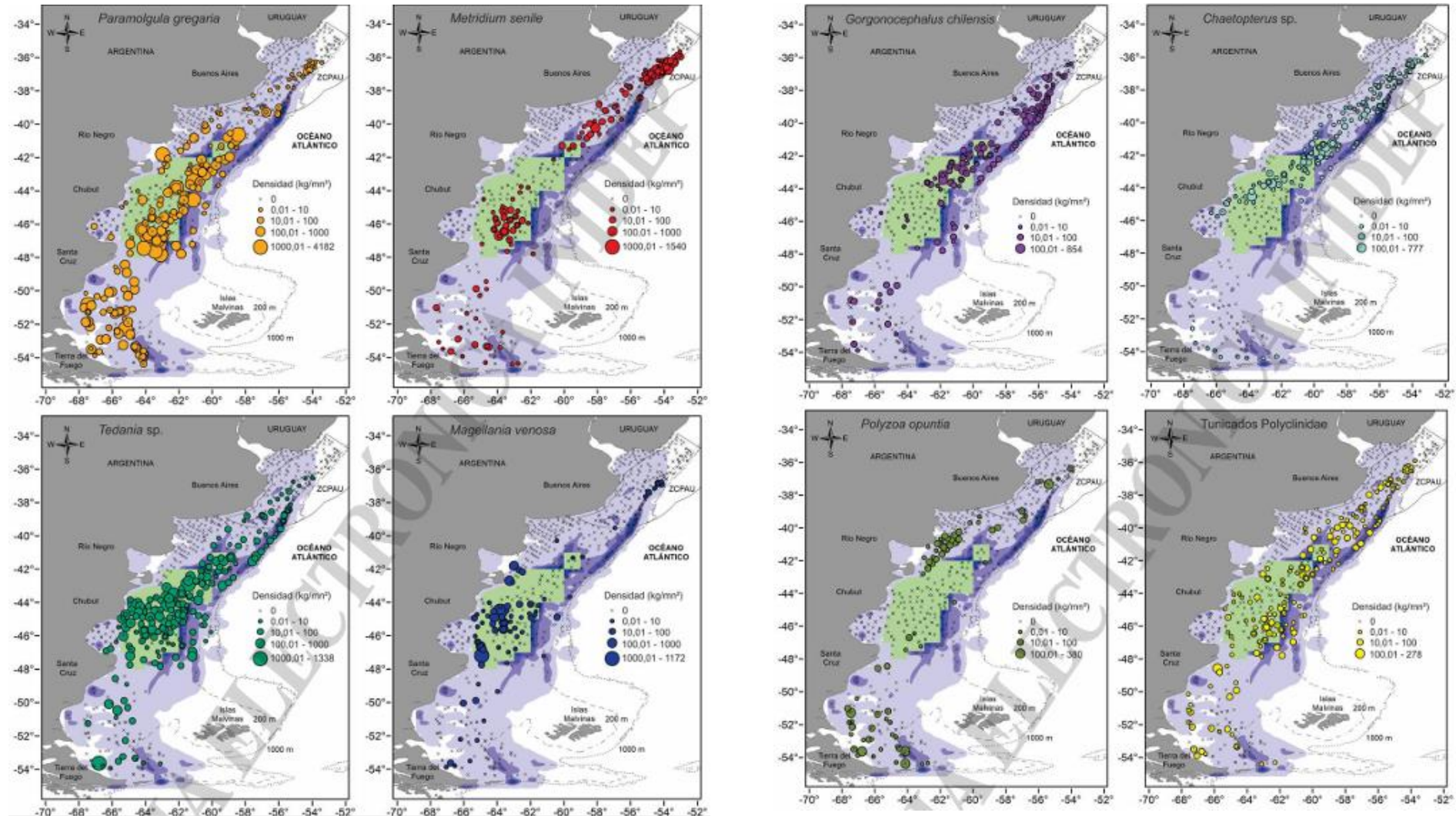


Fig. 38. Density (kg/mn²) of the dominant species with widespread distribution superimposed on trawling intensity. All sectors where the species or taxon was present are included, even if it did not reach an IRI > 1% during the survey (Source: Gaitan & Alemany, 2024).

The results of this work indicate that, although 275 benthic invertebrate taxa were recorded as bycatch in the eight analysed campaigns, only 34 taxa achieved a Relative Importance Index (RII) value above 1% in any of them. This suggests that, although the number of epibenthic invertebrate taxa retained in fishing nets is high, only a small group of species dominates in terms of relative importance in catches. Furthermore, the strong dominance of certain organisms in three of the analysed regions (ECB, PP, and PA), where one or a few species contribute significantly to the total biomass, suggests that these areas possess benthic communities with a distinct and/or relatively stable structure (Gaitan & Alemany, 2024).

In the case of *Tedania* sp., this genus displayed a wide latitudinal range, with presence from 36° to 54° S. Recently, the northern limit of its distribution (coinciding with the border of the Magallanes Province) was validated by Schejter *et al.* (2024). Unlike *P. gregaria*, these sponges are also distributed in some sectors with high fishing intensity, although their highest occurrence frequency and highest densities occurred in the AVPJM. It is important to note that within the AVPJM, there is fishing effort by trawlers fishing for shrimp (*Pleoticus muelleri*) with trawl nets, which was not considered in this study. In recent years, this fleet has operated primarily east of 64° W (De la Garza, 2024), coinciding with the area where *P. gregaria* and *Tedania* sp. have been most frequently found. This spatial overlap, although initially not appearing to affect the distribution and abundance of these species, requires more detailed study to determine its true impact (Gaitan & Alemany, 2024).

This study concluded that considering the study area is dominated by relatively vulnerable species, due to their sessile, long-lived, and community-forming nature, this might be expected to lead to ecosystems that are more sensitive to disturbances. However, this would be offset by the wide distribution of these same species, which generally extend across large areas of the Magallanes Province.

c. Ecosystem

i) Ecosystemic regionalization of the Argentine Continental Shelf

In terms of its natural dynamics, the Argentinean Sea is usually divided into six main areas based on the ecosystems that form them, geographical distribution and composition of fish species and benthic and demersal invertebrates. These ecosystems are listed below (Figure 39):

- The ecosystem of Rio de la Plata and its area of influence. This is an area of great hydrological complexity where the salinity levels are subject to great changes.
- The coastal ecosystem of the Bonaerense shelf. This is possible the best-defined ecosystem, as its eastern limit can be assumed to be determined by the deep of mixed layer.
- The ecosystem of the Bonaerense and North-Patagonian intermediate shelf is characterized by the presence of a minimum of salinity, between the coastal waters and those of the Malvinas Current.
- Ecosystems of the waters of the Malvinas Current. Although from the point of view of water bodies as benthic-demersal ecosystems, the Malvinas Current has been considered as a single unit in its whole area (from the latitude of Rio de la Plata to Burdwood Bank) (Boschi *et al.*, 1981), its surface waters show great latitudinal variability during the summer months regarding some factors such as the degree of stratification and nutrient abundance.
- The North Patagonian gulfs and their coastal region can be considered as an independent ecological unit, since the presence of a threshold that limits the exchange with external waters gives its characteristics. Likewise, the Tierra del Fuego region can be considered another ecological unit.
- The ecosystem of the waters of the southern shelf. There is very little information available.

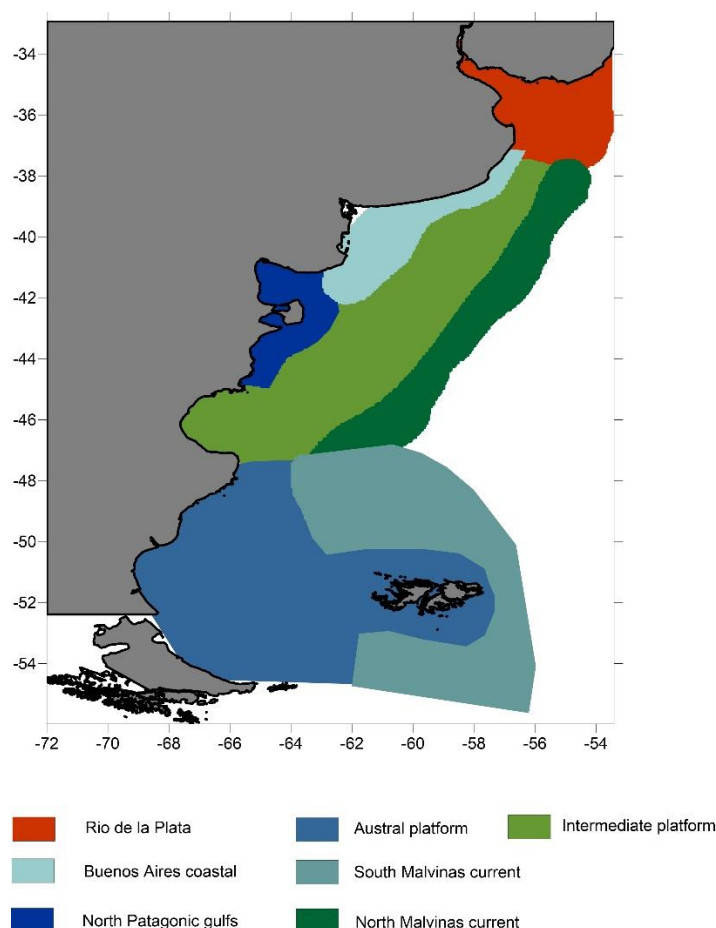


Fig. 39. Approximate limits of the ecosystem of the Argentine Sea (Source: SAYDS, 2019).

The intermediate shelf, North-Patagonia and Buenos Aires area considered in this ecosystem has a characteristic production rate of temperate-cold waters, observed during the summer, the presence of a well-established thermocline, above which nitrate concentrations are low ($<2.0 \text{ g-at-N-NO}_3$). From this latitude (48° S) and to the south, the stratification is less and virtually zero at the height of the Straits of Magellan (Naval Hydrographic Service, Fisheries XI, 1969). Concomitantly, nitrate concentrations are high ($6.0\text{-}12.0 \text{ g-at-N-NO}_3$) and concentrations of chlorophyll *a*, relatively few (Brandhorst & Castello, 1971).

In this unit, the zooplankton can be considered the result of successive replacement of the coastal ecosystem organisms, normal characteristic components of cold-water plankton. Among the zooplankton are the characteristic copepods *Centropages* ssp., *Brachiatus* ssp., *Drepanopus forcipatus*, *Carinatus* spp., and *Oithona atlantis*. Related to the slope region, there are also the copepod *Calanus australis*, the ostracod *Conchoecia serrulata* and the amphipod *Paratemisto gaudichaudii*. These organisms are possibly associated with the pure sub-Antarctic water that penetrates to the lower stratus occupying the platform.

The phytoplankton production, observed during the spring, are quite high. Especially in the centre and edge of the platform, *a*-chlorophyll concentrations were found up to 12.0 mg m^{-3} (Carreto *et al.*, 1981) and a variable carbon uptake between 10 and $41 \text{ mg C m}^2 \text{ day}^{-1}$. Zooplankton biomass is high during the spring months, finding values of dry weight to 158 mg m^{-3} or 11.9 g m^{-2} (Carreto *et al.*, 1986).

Marine fronts represent important fishing areas, even for demersal resources, as the distribution of fishing fleets and fishing effort are positively associated with frontal zones (Alemany *et al.*, 2016). The fishing fleets not always distribute along the frontal areas, however in such cases they seem to distribute in areas nearby fronts. The association between fishing activities and marine fronts suggests the occurrence and aggregation of commercially important species in these productive sites and presumably higher catches.

Areas where the fishing fleet operates are part of the great marine ecosystem of Patagonian shelf, which represents one of the most productive areas of the ocean, largely due to the presence of frontal oceanographic systems of high biological production (Sherman, 2005; Alemany, 2013).

These systems are characterized by being transition zones between water masses of different characteristics, with a marked horizontal gradient of temperature and / or salinity, and in some cases tidal fronts separate areas with different vertical structure (Mann & Lazier, 2005; Rivas, 2006; Rivas & Pisani, 2010). These areas of high diversity and biological productivity characterized by a variety of coastal and marine environments, where groups of birds and marine mammals stand out and of reproductive concentration and/or breeding of crustaceans and fish (Yorio *et al.*, 2015).

In Patagonia, these species are part of bycatch in fishing directed to the main demersal resources of the Argentine shelf, the hake (*Merluccius hubbsi*) and the Patagonian shrimp (*Pleoticus muelleri*), both species are the target of the trawl fisheries that operate along the coast of the Province of Chubut, San Jorge Gulf (closed since 2017) and adjacent waters of national jurisdiction, which include the area of closure of juvenile hake (Cedrola *et al.*, 2004; Gongora *et al.*, 2009; Gongora, 2011; Cedrola & Bovcon, 2012; Bovcon *et al.*, 2013; Crespi-Abril *et al.*, 2013; Ruibal Nuñez *et al.*, 2016).

In the case of Chondrichthyans, north of San Jorge Gulf and the coastal areas of the Atlantic coast of the Province of Chubut are characterized by an association of species, determined by the presence of plownose chimaera (*Callorhynchus callorhynchus*), narrownose smooth-hound (*Mustelus schmitti*), angel shark (*Squatina guggenheim*), tope shag (*Galeorhinus galeus*), skate 'raya marmolada' (*Sympterygia bonapartii*), electric ray (*Discopyge tschudii*) and shark *Schroederichthys bivius*. This large area was distinguished mainly by the first four species that were exclusive and not described in other groupings (Ruibal Nuñez, 2020).

ii) Magellan biogeographic province

The Magellan biogeographic province is located all along the Argentine coast, from Peninsula Valdes to Southern Patagonia, including a South Brazilian and Uruguayan portion in deeper waters. It is far more extensive than the Argentine province, but above all, has a much wider continental shelf. It is also more homogeneous by net dominance of cold-water sub-Antarctic province.

Different physiographic features of this province there are noticed: a predominance of biotope sandbar in the coastal zone, with beaches of sand and gravel; development of mud at the mouth of rivers; very large tides that generate strong currents; and strong westerly winds. Consolidated bottoms allow the "roots" of large algae that give this coastline a very special physiognomy. Among the animals associated with these large algae are included anemones, barnacles, clams, hydroids, bryozoans, amphipods, isopods and some fish. Although perhaps one of the most remarkable faunal features in this province is the presence of several species of Gadiformes (such as *Macruronus magellanicus*, *Merluccius australis*, *Micromesistius australis* and *Salilota australis* as indicators of the whole province), with high biomass and subjected to an intense commercial fishing, and the development of two fish families: Nototheniidae and Zoarcidae. When observing their respective areas of distribution (Cousseau, 1993; cited in Balech & Elrich, 2008), it is shown that this species which occur in the entire platform in the south Patagonian district, are away from the coast when going north (at about 46° S and even to 38° S in winter), occupying a narrow strip by the east of the Argentine province, in the Malvinas Current; *Merluccius hubbsi*, the more common eurioic hake, and main demersal fishing resources in the Argentine Sea occupy not only all Magellan province but also part of Argentine province.

Despite this relative homogeneity of conditions, fairly net faunal boundaries were noted (although they may not be clear in offshore waters); and three biogeographic districts were identified: (1) "Fueguino", from the southern limit of the Province of Tierra del Fuego to 51° S, which integrates with the waters surrounding this province and nearby islands; The "Santa Cruz" district, that extends from there until Cabo Blanco; and the "Chubut" district, from this point to the north, up to the border with the Argentine province.

The fauna from the northern prolongation of this province, going from south to north the eastern limit of the Argentine province, has more components of the Sub-Patagonian district than of the Province of Chubut. This fact is not only limited to fishes but also to other benthic organisms.

The Patagonian Shelf Large Marine Ecosystem extends from Uruguay to the Magellan Strait. It has a total area of about 2.7 million km² and it is relatively narrow in the north and expands progressively to the south, where it reaches a width of 850 km. All this system has distinctive bathymetry and hydrography features.

The Northern Patagonian Frontal System (NPFS) (also called Peninsula Valdes tidal Front) is an intermediate shelf-tidal front located near Peninsula Valdes and extending southward off the Patagonian coast from ~42° to 45° S, although its position varies considerably between years. The turbulence generated by strong tidal currents keeps the well-mixed shallow waters separated from the deeper stratified water. These front starts forming in early spring, as a seasonal

thermocline develops; the steepness of the gradient is maximal during the summer (and so is the chlorophyll-a concentration); and persists through autumn, when the water column becomes vertically homogeneous (stratification declines). The average position of the system estimated over this period shows an overall NE-SW alignment following closely the bathymetry and isoclinal contours (75-80 m). It is located on average 50 km offshore in the south, and ~80 km offshore in the northern zone.

The Southern Patagonia Frontal System (SPFS), on the other hand, is a thermohaline front developed on the south coast of South America. Seawater masses from the northern of Drake Passage age are diluted due to the excess of rainfall on the Pacific and the continental discharge along the west coast of the Atlantic. This flow towards the Argentinian coast contributes to the low salinity waters south of Magellan Strait and is affected by the strong west dominant winds. The diluted plume is vertically mixed by the tides, and the wind is traced 200 km offshore and 800 km norward, reaching San Jorge Gulf (Acha *et al.*, 2004).

SPFS is permanently marking the transition between tidally mixed low salinity of the Patagonian Current waters and seasonally stratified more saline waters of the continental shelf. The nutrients carried by these waters of different temperature and salinity added to the nutrient flux produced by re-suspension and tidal mixing and cause additional chlorophyll blooms along the inner and middle shelf of Patagonia (Matano *et al.*, 2019).

The position of the Southern Patagonia Frontal System varies only slightly between years; and phytoplankton productivity peaks once during spring and once in autumn (Mann & Lazier, 1991; Cucchi Colleoni & Carreto, 2003). While the coastal system has depths generally less than 50 m, it is characterized by vertically homogeneous waters during all the year (due to the combined effect of winds and tides) and is recorded minimal concentrations of nitrate and chlorophyll.

A Shelf Break Frontal System (SBFS) with 90-200 m depth range marks the transition between continental shelf waters and the Malvinas Current (Figure 40). It is characterised by high chlorophyll-a concentrations, attributable to nutrients inputs from upwelling along the shelf break. Large scallop aggregations are associated with this productive frontal system. It is influenced by two major wind-driven currents, the northward flowing Malvinas Current and the southward flowing Brazil Current, which provide a distinctive ecological boundary to the east, and a high productivity. While the southward flowing Brazil Current is warm and saline, the northward flowing Malvinas Current carries cool, less saline, nutrient-rich sub-Antarctic water towards the equator.

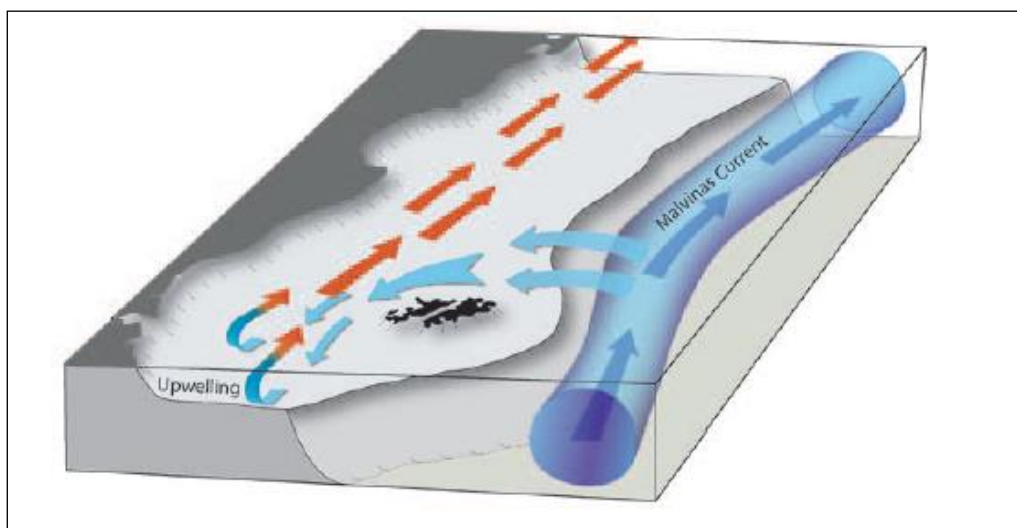


Fig. 40. Scheme of the cross-shelf exchange along the shelf-break front in Argentine Patagonia. (Source: Matano *et al.*, 2019)

The two currents mix their waters at a Confluence Zone (CZ). The Confluence Zone is a wide area characterized by intense horizontal and vertical mixing. It is located at about 39° S but displaced to the north during winter. The exchange of water masses of different temperatures and salinity affects biological productivity.

There are significant coastal tidal fronts in this Large Marine Ecosystem that divide the coastal domain (which comprises areas where large quantities of fresh water and sediments are discharged from the main inland rivers) from the outer shelf domain. It is also known that frontal zones are areas of high productivity especially along the extensive shelf break front (Figure 40).

Although the Shelf Break Front has a very complex structure and exhibits multiple thermal fronts (Franco *et al.*, 2008), its position remains remarkable stable (Saraceno *et al.*, 2005) and is closely locked in position by the topography that steers the Malvinas Current which, nevertheless, still penetrates the Patagonian Shelf and influences the regional ecosystems (Piola *et al.*, 2010). The most obvious evidence of this nutrient input is the high level of biological activity that is found in the Patagonian Shelf Large Marine Ecosystem, which is considered a Class I marine ecosystem with a productivity rate larger than 300 grC/m² yr⁻¹ (Csirke, 1987; Brandhorst & Castelo, 1971; Lutz & Carreto, 1991; Sabatini *et al.*, 2004).

iii) Protected Areas

Argentine fishing management has established some closed systems to protect living resources and vulnerable marine ecosystems (Figure 41) if needed, according to the life cycles of some “main concern” species:

- An extensive system of closed permanent and temporal areas for the protection of reproductive process and breeding areas (hake, coastal demersal species).
- An area of permanent close in high seas for the protection of vulnerable marine ecosystem (e.g. cold-water corals).
- A system of opening and closing of areas using an adaptive management approach for squid, shrimp, scallops and red king crabs.

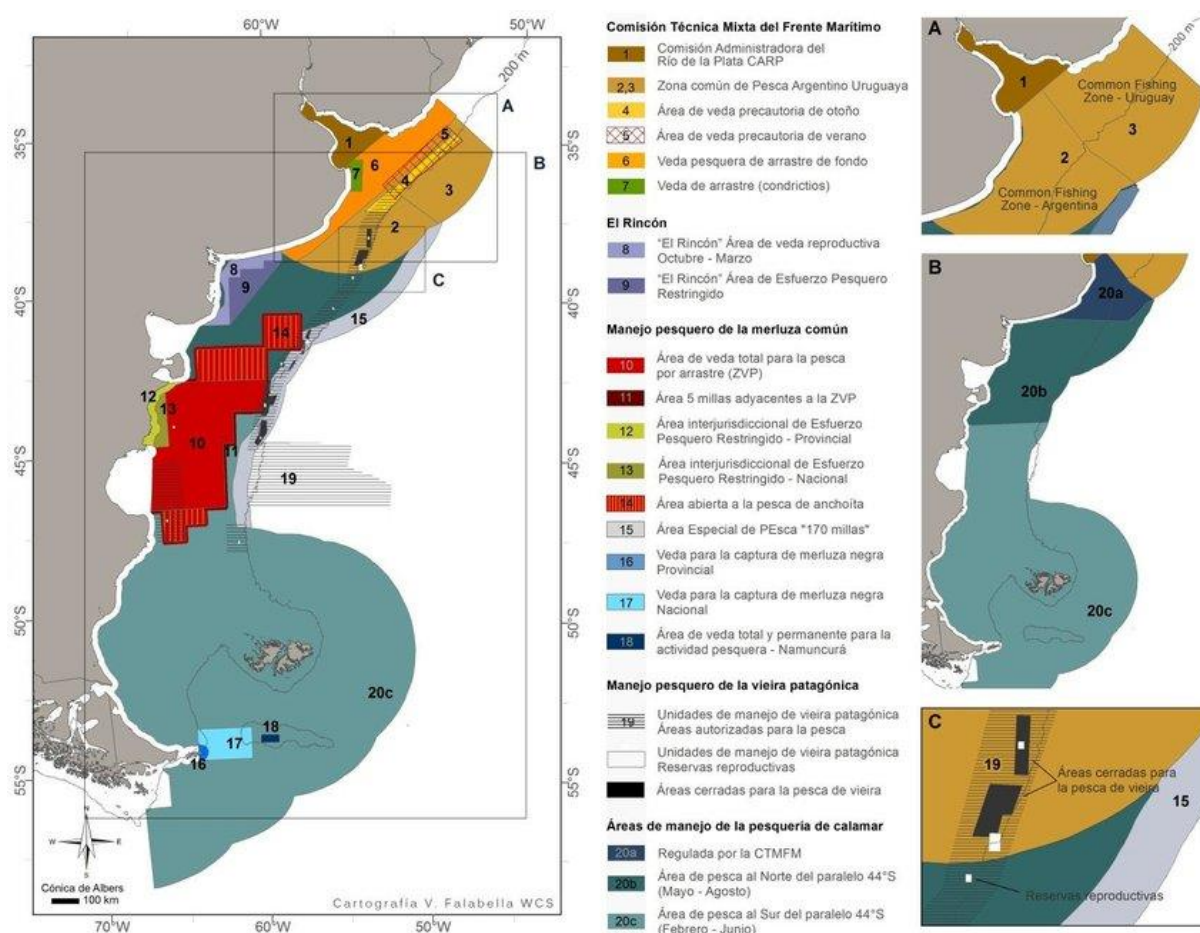


Fig. 41. Closed areas in the Argentine Sea and the Argentine Uruguayan Common Fishing Zone (Source: Lovrich, 2014).

The table provided below summarizes the Principle 2 scoring elements considered for the assessment.

Table 18. Scoring elements.

Component	Scoring elements	Designation	Data-deficient
Primary	Argentine hake (<i>Merluccius hubbsi</i>)	Main	No
Primary	Argentine hoki (<i>Macruronus magellanicus</i>)	Minor	No
Primary	Brazilian flathead (<i>Percophis brasiliensis</i>)	Minor	No
Primary	Pink cuskeel (<i>Genypterus blacodes</i>)	Minor	No
Primary	Argentine anchovy (<i>Engraulis anchoita</i>)	Minor	No
Primary	Chub mackerel (<i>Scomber japonicus</i>)	Minor	No
Primary	Argentine shortfin squid (<i>Illex argentinus</i>)	Minor	No
Primary	Southern king crab (<i>Lithodes santolla</i>)	Minor	No
Primary	Narrownose smooth hound (<i>Mustelus schmitti</i>)	Minor	No
Primary	Angel shark (<i>Squatina guggenheim</i>)	Minor	No
Secondary	Kelp gull (<i>Larus dominicanus</i>)	Main	Yes
Secondary	Sooty shearwater (<i>Ardenna grisea</i>)	Main	Yes
Secondary	Cape petrel (<i>Daption capense</i>)	Main	Yes
Secondary	Wilson's storm petrel (<i>Oceanites oceanicus</i>)	Main	Yes
Secondary	South American tern (<i>Sterna hirundinacea</i>)	Main	Yes
Secondary	Southern petrel (<i>Fulmarus glacialis</i>)	Main	Yes
ETP	Spiny dogfish (<i>Squalus acanthias</i>)	ETP	No
ETP	Great shearwater (<i>Ardenna gravis</i>)	ETP	No
ETP	White-chinned petrel (<i>Procellaria aequinoctialis</i>)	ETP	No
ETP	Black-browed albatross (<i>Thalassarche melanophrys</i>)	ETP	No
ETP	Southern royal albatross (<i>Diomedea epomophora</i>)	ETP	No
ETP	Southern giant petrel (<i>Macronectes giganteus</i>)	ETP	No
ETP	Wandering albatross (<i>Diomedea exulans</i>)	ETP	No
ETP	Magellan penguin (<i>Spheniscus magellanicus</i>)	ETP	No
ETP	Northern royal petrel (<i>Diomedea sanfordi</i>)	ETP	No
ETP	Light-mantled albatross (<i>Phoebastria palpebrata</i>)	ETP	No
ETP	Atlantic yellow-nosed albatross (<i>Thalassarche chlororhynchos</i>)	ETP	No
ETP	Spectacled petrel (<i>Procellaria conspicillata</i>)	ETP	No
ETP	Grey-headed albatross (<i>Thalassarche chrysostoma</i>)	ETP	No
ETP	Shy albatross (<i>Thalassarche cauta</i>)	ETP	No
ETP	Northern giant petrel (<i>Macronectes halli</i>)	ETP	No
ETP	South American sea lion (<i>Otaria flavescens</i>)	ETP	No
ETP	South American fur seal (<i>Arctocephalus australis</i>)	ETP	No
ETP	Commerson's dolphin (<i>Cephalorhynchus commersonii</i>)	ETP	No

Habitat	Inner and outer shelf with sediments plains between 25-200 m of depth in the Central Patagonian area as commonly encountered habitat.	Main	No
Ecosystem	Argentine continental shelf located in the EEZ of the Central Patagonian area	Ecosystem	No

10.2.2 Principle 2 Performance Indicator scores and rationales

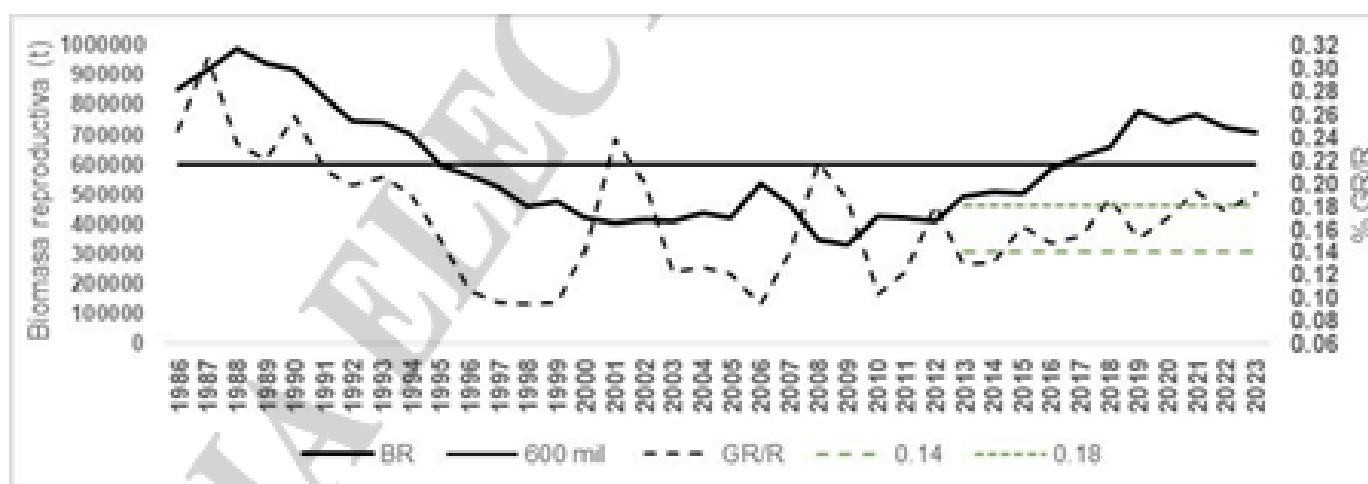
PI 2.1.1 – Primary species outcome

PI 2.1.1		The UoA aims to maintain primary species above the point where recruitment would be impaired (PRI) and does not hinder recovery of primary species if they are below the PRI			
Scoring Issue		SG 60	SG 80	SG 100	
a	Main primary species stock status				
	Guide post	Main primary species are likely to be above the PRI. OR If the species is below the PRI, the UoA has measures in place that are expected to ensure that the UoA does not hinder recovery and rebuilding.	Main primary species are highly likely to be above the PRI. OR If the species is below the PRI, there is either evidence of recovery or a demonstrably effective strategy in place between all MSC UoAs which categorise this species as main , to ensure that they collectively do not hinder recovery and rebuilding.	There is a high degree of certainty that main primary species are above the PRI and are fluctuating around a level consistent with MSY.	
		Met?	Yes for main primary species	Yes for main primary species	Yes for main primary species
		Rationale			

The species to be assessed under P2 are those coming on-board which are not covered under P1. The primary species for MSC are those where management tools and measures are in place, intended to achieve stock management objectives reflected in either limit or target reference points, the catch does not comprise 5% or more by weight of total catch of all species of UoA, 2% in species considered 'less resilient'.

According to catch composition determined by Private On-board Observer Program during the 2017-2022 fishing seasons of Argentine red shrimp (*Pleoticus muelleri*) offshore fishery (Table 14), only Argentine hake (*Merluccius hubbsi*) can be classified as 'main primary species'. The percentage observed in the total weight of the UoA catch is ranged between 8.7% and 17.2% (means 12.65%) in the last 4 fishing seasons.

Santos & Villarino (2023) used two methodologies to evaluate the stock status of Argentine hake southern stock: Virtual Population Analysis (VPA-XSA) and Statistical Catch at Age (SCA). Similar results were provided by two models in terms of biomass trajectory. The target biological reference point (TRP) is that the reproductive biomass is greater than or equal to 600,000 t with a proportion of large broodstock of not less than 14% (see Figure 24). A gradual and sustained recovery from 2010 has kept hake at an average around of 748,000 t in the last 4 years. Between 2019 and 2022, it was estimated that between 15% and 18% of large broodstock were borne, that is, there was an improvement in the size and quality of the spawning biomass in accordance with the TRP. The following figure shows spawning biomass (SB) of common hake estimated by the ECE model at the beginning of each year. The SB value of 600,000 t, the percentage of spawners out of the total spawners (SR/S) and the range of this percentage (0.14-0.18) used in the SBA calculation since 2013 are indicated (Santos *et al.*, 2024).



The 2023 catch declaration was corrected with information obtained by INIDEP's on-board observers, and a 3% increase was estimated compared to the previous year. Estimates of hake discards by the hake and shrimp fleets were included. In addition, the catch of the foreign fleet operating outside the exclusive economic zone and the Malvinas Islands fleet south of 48° S (FAO Statistics) were added. The total estimated catch in 2023 was 502,101 t, 4% higher than in 2022. Catch declarations have shown little variation since the implementation of the Individual Transferable Catch Quotas (CFP Resolution N° 23/2009). However, since 2013, the volume of discards and fishing by the foreign fleet has doubled, while bycatch obtained by the shrimp fleet has fluctuated between 26,000 t and 41,000 t, reaching close to 33,000 t in recent years.

In 2023, the spawning biomass (SB) reached approximately 708,000 t, slightly lower than the previous year, with 19% of large spawners, and the total biomass (TB) reached 1,145,000 t. A little change was observed in these values since 2019. According to the proposed objective biological reference points, based on the number of individuals per age group estimated in the population at the beginning of 2023, the targeted and incidental catches of Southern hake in 2024, and, from 2025, the application of the average fishing mortality vectors for the hake and shrimp fleets over the last five years, the different BAC values were determined. These were obtained after deducting the average estimated discard and underreporting between 2019 and 2023 (95,636 t) and a bycatch projection that should not exceed 35,000 t. The Biologically Acceptable Catch for 2025 that would allow compliance with the target biological reference point (TBRP), which consists of a reproductive biomass (RB) greater than or equal to 600,000 t, with a proportion of large spawners (LSP) out of the total spawners (R) of no less than 18%, resulted in 347,560 t in the short term, and 342,444 t in the medium term. In addition, the CBAs that would allow compliance with the PBRO requirement of reproductive biomass (RB) reaching 30% of virgin spawning biomass ($BRV_{0.3} = 810,000$ t) were estimated. These reached 332,750 t in the short term and 332,791 t in the medium term.

The high catches made by the foreign fleet of this fleet must be considered when estimating the CMP. To sustain the recovery of the Southern common hake stock in volume and composition, and to gradually approach the target of achieving 30% virgin spawning biomass, it is suggested that the Biologically Acceptable Catch for 2025 not exceed 339,000 t. Likewise, the recommendations for maintaining the closure area for the protection of Argentine hake and the use of selective devices are upheld (Santos *et al.*, 2024).

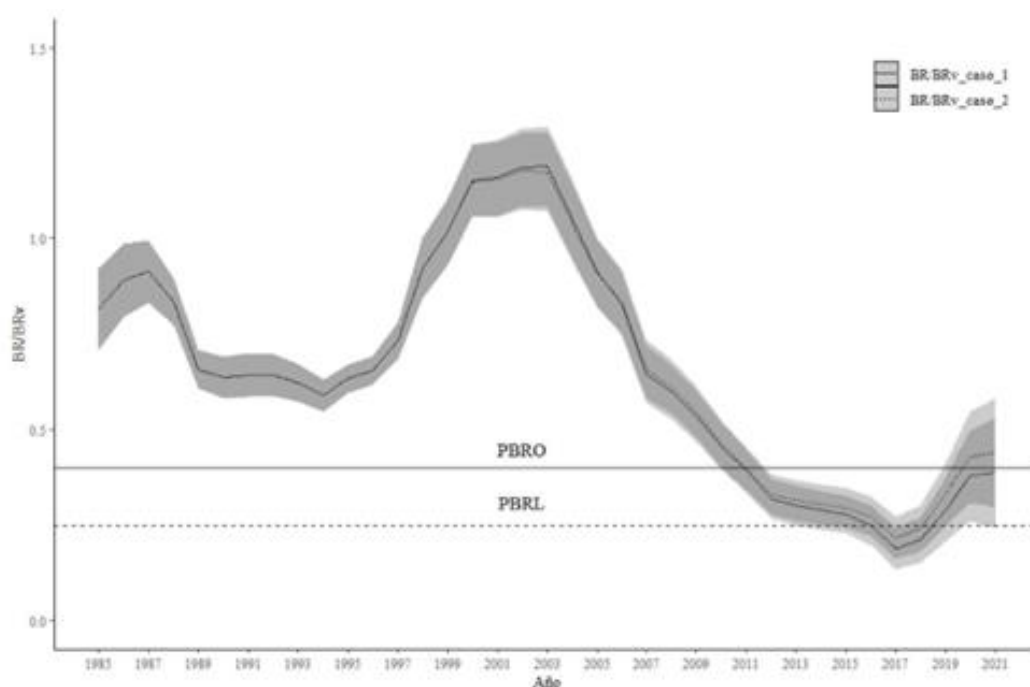
Although complete 2023 data were used to calculate the 2025 Biologically Acceptable Catch (BAC), preliminary estimates of targeted and bycatch catches for 2024, as well as projected mortality rates, were also considered. These estimates were made based on a short-term (2028) and medium-term (2032) risk analysis, which considered the population's replenishment capacity and two Biological Reference Points (BRPs). The first BRP establishes a reproductive biomass value composed of a percentage of large spawners, which would allow for the sustainability of the resource under exploitation (Santos & Villarino, 2023). The second BRP proposes reaching 30% of virgin reproductive biomass (Santos, 2023).

Therefore, the SG100 level is met.

Minor primary species stock status			
b	Guide post		Minor primary species are highly likely to be above the PRI. OR If below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of minor primary species.
	Met?		Yes for all minor primary species
Rationale			

According Figure GSA3 – MSC Fisheries Standard v2.01, minor primary species identified in the P2 background (see Table 14) are: Argentine hoki (*Macrurus magellanicus*); Brazilian flathead (*Percophis brasiliensis*); chub mackerel (*Scomber japonicus*); Argentine anchovy (*Engraulis anchoita*); pink cuskeel (*Genypterus blacodes*); Argentine shortfin squid (*Illex argentinus*); Southern king crab (*Lithodes santolla*); narrownose smooth-hound (*Mustelus schmitti*); and, angel shark (*Squatina guggenheim*).

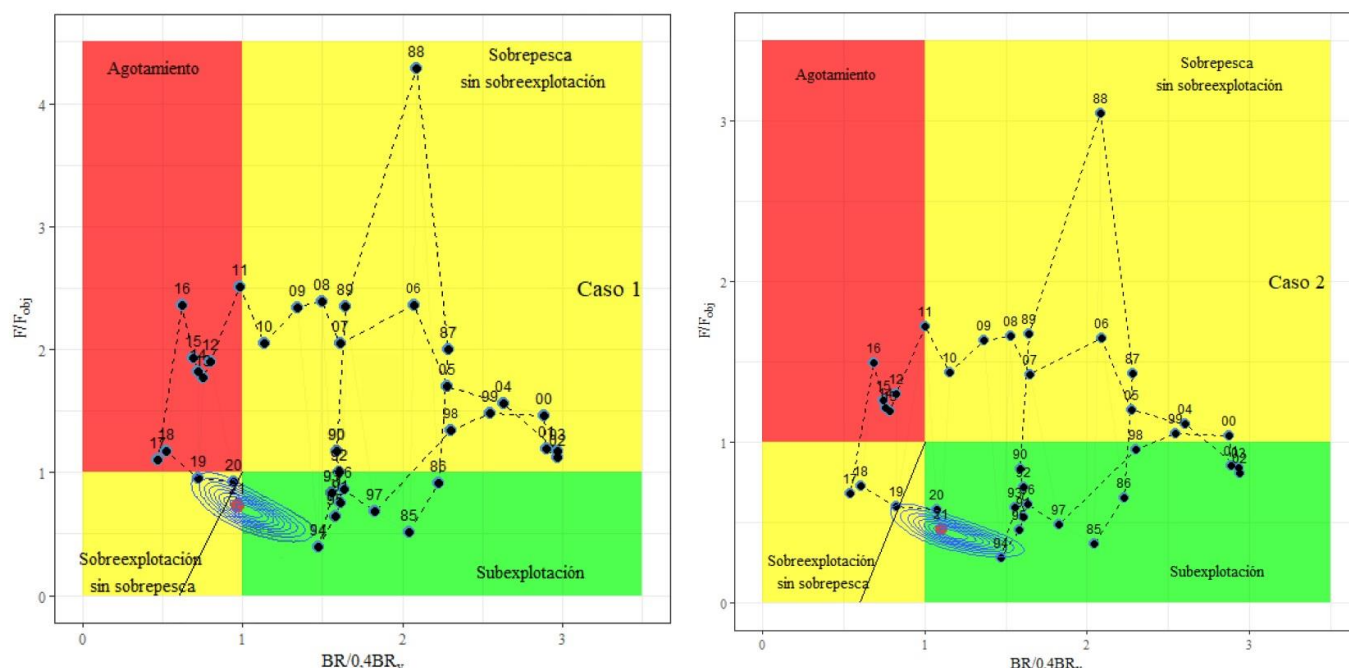
-Argentine hoki (*Macrurus magellanicus*): The limit biological reference point (LBRP) for Argentine hoki fishery was established as follows (Giussi *et al.*, 2016): $LBRP = 0.25BR_0$, where BR_0 is the virginial reproductive biomass. The most updated stock assessment of hoki is that of Zavatterri & Giussi (2022): this assessment shows that since 2011 and until recently, the ratio BR/BR_0 was very close to, or even at or below the limit reference point. Only in the last two years (2020-2021), the central estimate of this ratio has been above the LBRP. In 2021, this ratio varied between 0.39 and 0.44, which indicates that the stock would be well about the limit point.



Temporal trend of the ratio BR/BR_0 relative to the target and limit reference points for 1985-2021. $RV = BR_0$; $PBRO$ = target reference point; $PBRL$ = limit reference point. Shaded area represents the 95% confidence interval. (Source: Zavatterri & Giussi, 2022)

Reproductive biomass in 2021 varied between 191,859 and 217,675 t, these values are certainly above the calculated value of the limit reference point: 123,700 t.

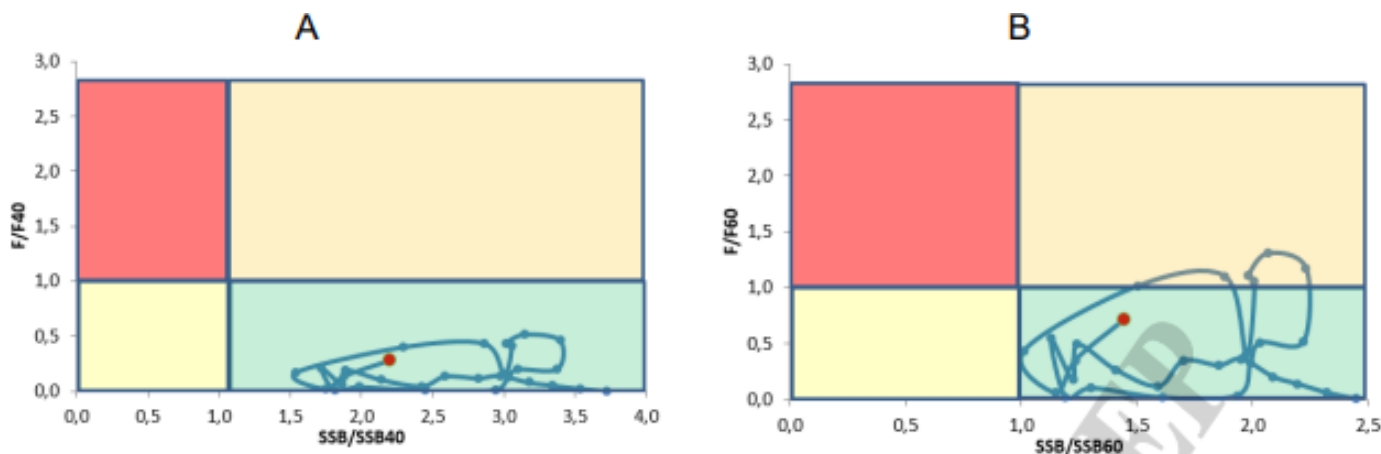
On the other hand, the average value of the BR in the last four years (2018-2021) is 156,867 and 177,900 t (case 1 and 2, respectively) also well above the calculated limit value (Zavatterri & Giussi, 2022).



Kobe plot for the Argentine hoki fishery. Left: case 1; right: case 2. $BR_v = Bro$. (Source: Zavatteri & Giussi, 2022).

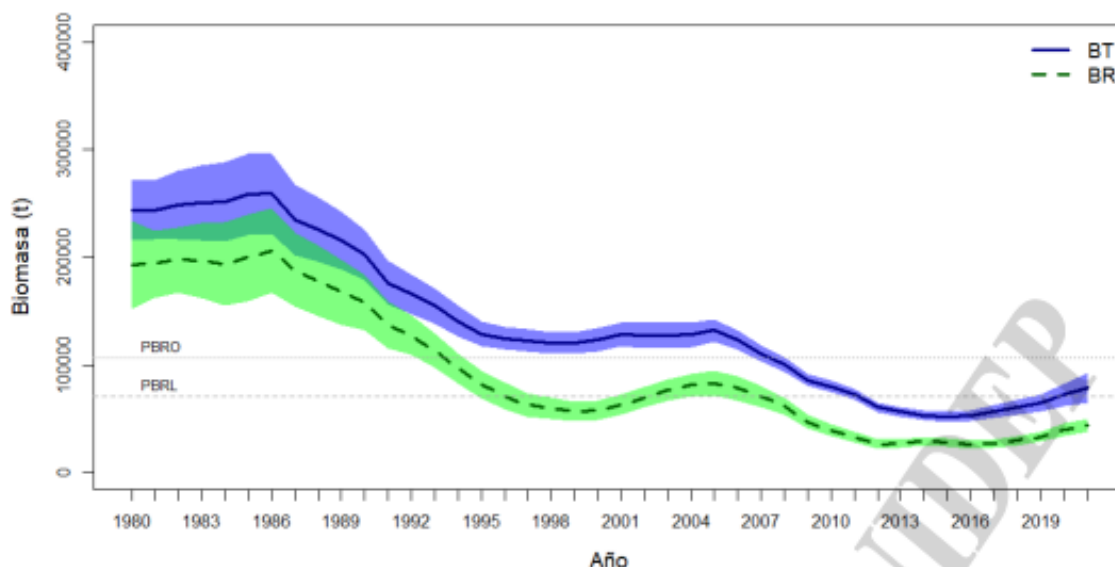
Considering the above information, it is deemed that it is highly likely that the stock is above the PRI (Zavatteri & Giussi, 2022). **Therefore, the SG100 level is met.**

-Chub mackerel (*Scomber japonicus*): the diagnosis carried out allows us to conclude that the southern stock status remains stable and its exploitation is below its potential with a TAC of 30,000 t for 2021. It should be noted that chub mackerel catches in the shrimp offshore fishery did not exceed 0.02% in the last 4 years monitored. **Therefore, the SG100 level is met.**



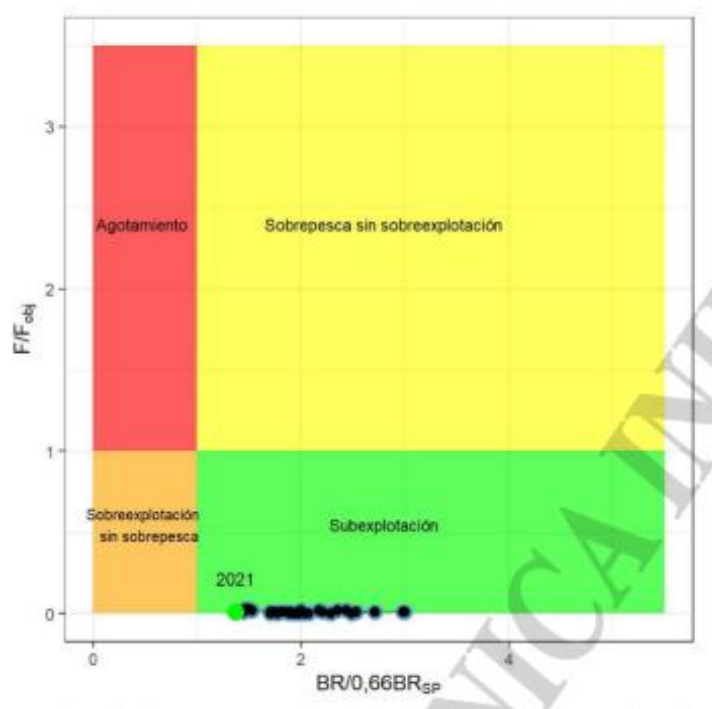
Kobe diagram for chub mackerel. A. Limit reproductive biomass and limit fishing mortality (F). B. Target reproductive biomass and target fishing mortality (F). (Source: Orlando et al., 2021).

-Pink cuskeel (*Genypterus blacodes*): This species has been declared in critical condition. Therefore, it has been suggested for 2022 and 2023 a TAC no greater than 3,821 t. This value has been determined, considering a precautionary approach for all Southwest Atlantic area (Di Marco, 2022). One of the measures established by the CFP thought the Resolution N° 10/2017 for its recovery is that incidental catches do not exceed 3% of landings. It was identified that catches of pink cuskeel by the UoA was less than 0.06% in relation to the total observed catch, in the last 6 fishing seasons (see Table 14). **Therefore, the SG100 level is met.**



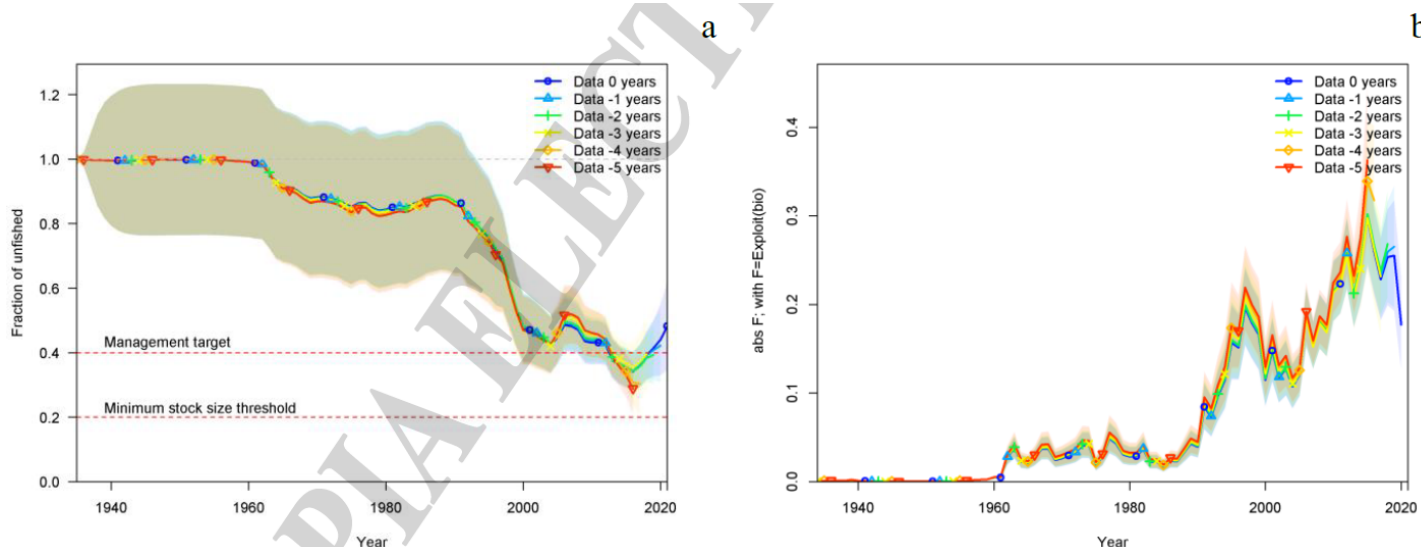
Total and reproductive biomass for pink cuskeel. (Source: Di Marco, 2022)

-Argentine anchovy (*Engraulis anchoita*): According Orlando *et al.* (2022), the stock is in healthy status. The abundance of broodstock exceeded the levels proposed by the target reference points and presents favourable conditions for a greater development of the activity. So, it is recommended a TAC of 116,000 t in 2022. Anchovy catches in the shrimp offshore fishery did not exceed 0.01% in the last years. **Therefore, the SG100 level is met.**



Kobe diagram for Argentine anchovy. (Source: Orlando *et al.*, 2022)

-Brazilian flathead (*Percophis brasiliensis*): In 2021, the stock assessment stated that status was recovered, estimating that the stock is above the target reference point (40% BRV) (Rita Rico & Rodriguez, 2022). It should be noted that mostly catches of this species (*i.e.* 90%) come from of north of 39° S. Catches conducted by the UoA did not exceed 0.02% in the monitored years. **Therefore, the SG100 level is met.**



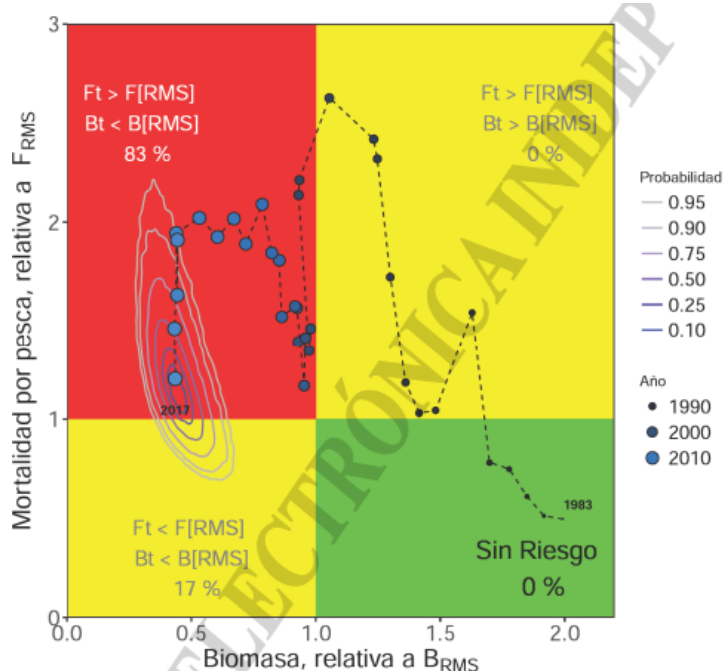
a. Spawning biomass and b. fishing mortality rates for Brazilian flathead during 1934-2021 period. (Source: Rita Rico & Rodriguez, 2022)

-Argentine shortfin squid (*Illex argentinus*): It is established as reference point the survival of 40% of annual biomass calculated at the beginning of each fishing season. This fishery has a closed period in the EEZ between 1 September and 31 January of each year (Lovrich, 2014). It should be noted that catches of squid in Argentine waters are mainly conducted between 37° and 42° S on the external platform, and in the southern of 44° S on the middle and outer platform. During the 2022 season, total catches increased at 27% respecting to 2021 (Ivanovic *et al.*, 2023). In the last 5 years, catches of squid by the UoA did not exceed 0.20%. **Therefore, the SG100 level is met.**

-Narrownose smooth-hound (*Mustelus schmitti*); skate 'raya marmolada' (*Sympterygia bonapartii*); and, angel shark (*Squatina guggenheim*): Most chondrichthyan catches take place in what is known as the Argentina Uruguay Common Fishing Zone (AUCFZ) where Total Allowable Catch (TAC) for chondrichthyans was established in 2014 by the Mixed Technical Commission of the Maritime Front (*Comision Tecnica Mixta del Frente Maritimo - CTMFM*). Only 3 groups of cartilaginous fishes are regulated by a TAC limit each year: the narrownose smooth-hound (*Mustelus schmitti*), the angel sharks (*Squatina guggenheim*) and an assemblage of at least 20 species of skates divided into coastal (9 species) and deeper (11 species) catches including *Atlantoraja castelnaui*, *A. cyclophora*, *Rioraja agassizii*, *Sympterygia acuta*, *S. bonapartii*, *Psammobatis bergi*, *P. rutrum*, *P. exenta*, *Amblyraja doellojuradoi*, *Bathyraja brachyurops*, *B. macloviana*, *B. albomaculata*, *Zearaja chilensis* and others (Ruibal Nuñez, 2020).

In the case of *Mustelus schmitti* and *Squatina guggenheim*, these species are categorized as endangered by the IUCN (2019), due the intensive fishing pressure throughout their distribution areas, which has reduced their populations below original levels. For Argentina and Uruguay, *Mustelus schmitti* is considered as a vulnerable. Considering this conservation status and considering their life histories, it is considered that the population of these species could decline if current levels of bycatch are maintained, although there are no abundance records in the South Atlantic region that allow locally dimension the impact. In any case, the vulnerability status of these species at the global level serves as a reference framework and precautionary approach to address the local situation (Ruibal Nuñez, 2020).

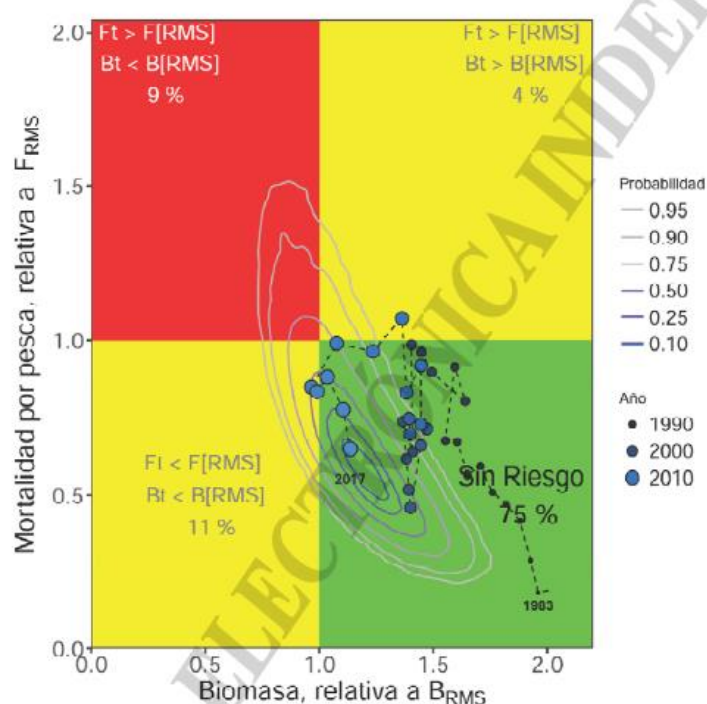
According to Cortes *et al.* (2018), the abundance of *M. schmitti* in the Rio de la Plata and Maritime Front Treaty area presented a decreasing trend, being lower than target level.



Kobe diagram for narrownose smooth hound. (Source: Cortes et al., 2018)

The southern limit of narrownose smooth-hound (*Mustelus schmitti*) distribution is 47°45' S, but its main fishing grounds are located between 35° and 41° S. Catches, north of the fishery under assessment, are the ones used to estimate its status. According to information provided by Sharks National Action Plan (PAN-Tiburones, 2009), its density between parallels 43° and 44°56' S in waters near the coast (in ZEPR), was not significant for twenty years ago, in comparison with areas to the north. This is consistent with data from the POAB that signals that, although its frequency of occurrence is around 30%, its participation in the catch volume is very low (i.e. 0.01% and 0.07% of the total catches in five years (see Table 14), respectively). **Therefore, the SG100 level is met.**

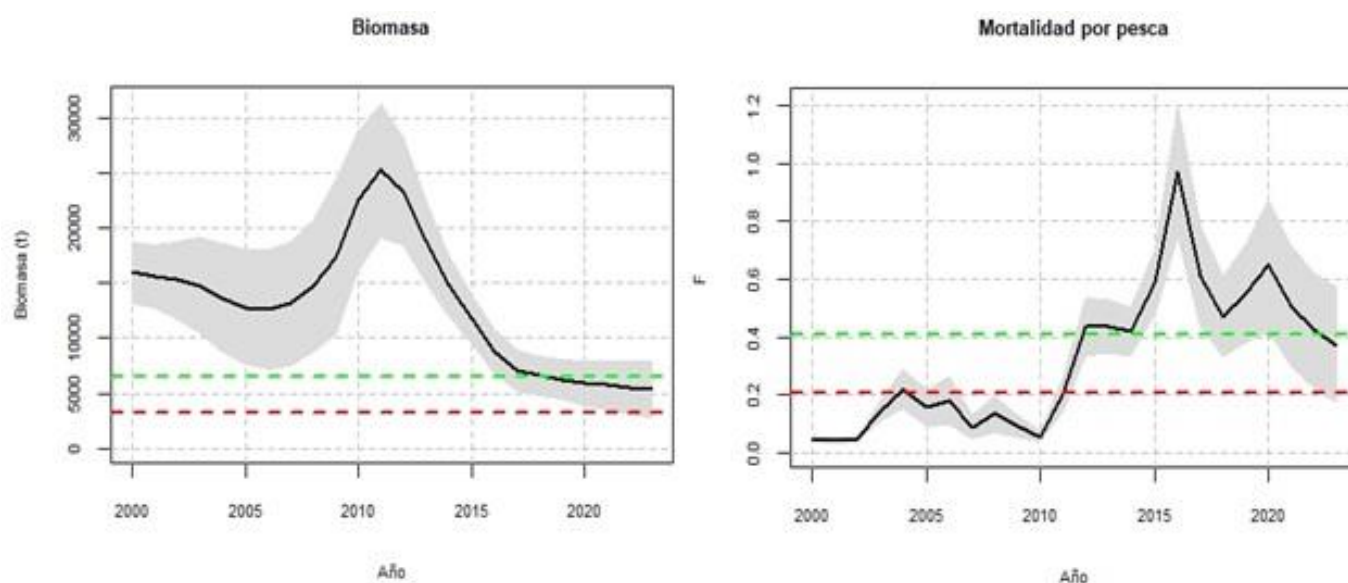
In the case of angel shark (*S. guggenheim*), Cortes et al. (2018) estimated the biomass in the Rio de la Plata and Maritime Front Treaty area, showing a decreasing trend, but closed to optimal level. **Therefore, the SG100 level is met.**



Kobe diagram for angel shark. (Source: Cortes et al., 2018)

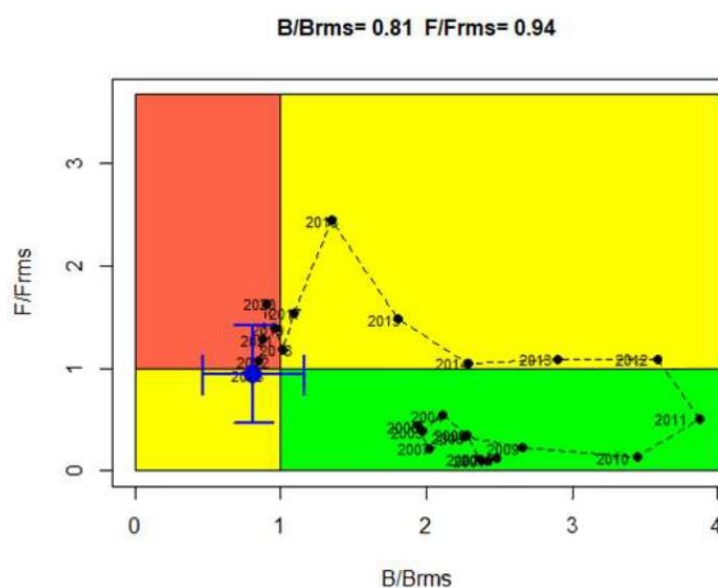
-Southern king crab (*Lithodes santolla*): The incidental catch of this species in the freezer shrimp fleet was decreasing during the 2010-2011 period, starting with an average of 25% landings to decreased values closed to 1%. Therefore, the removal of commercial specimens by this fleet is reduced and presents a sustained pattern of decrease, consequent to the displacement of the fleet outside the sectors of concentration of southern king crab (Mauna *et al.*, 2021).

The temporal evolution of the reproductive biomass (males equal or larger than 110 mm CL) and fishing mortality in the Central Area as estimated by the assessment model are shown in the Figure. Since 2020 onwards, reproductive biomass would have been below the target reference point (*i.e.* 0.40 BRo) with values around 5,350 t in the most recent year (2023). This estimated biomass would correspond to 0.33BRo (BRo= virginal reproductive biomass). Also, the fishing mortality would have exceeded the reference level (*i.e.* F40%) in the 2012-2022 period. According to the model, recruitment has a decreasing trend since 2012 and the lowest level occurred during 2021 and 2022 (Firpo *et al.*, 2024).



Temporal evolution of the reproductive biomass (left) and fishing mortality for the southern king crab stock in the Central Area. Shaded areas represent the 95% confidence intervals, while the dotted horizontal lines are the target and limit reference values. (Source: Firpo *et al.*, 2024)

As stated by Firpo *et al.* (2024a), the current diagnosis is that ‘there are no evidence of overfishing (0.4), but there is a higher risk of overexploitation (0.85)’. The authors point out that this stock status is different from that emerged in the previous stock assessment, when the resource was in a status near to the optimum. **Therefore, the SG100 level is met.**



Kobe plot for the Southern king crab fishery in the Central Area, as derived from the most recent stock assessment (Source: Firpo *et al.*, 2024a)

Considering the stock population status of all minor primary species in the monitored period by POAB, and the low catches (< 1%) of these species in the Argentine red shrimp offshore fishery, the UoA complies with does not hinder the recovery and rebuilding of minor primary species and **the SG100 level is met.**

Overall Performance Indicator score	100
Condition number (if relevant)	N/A

PI 2.1.2 – Primary species management strategy

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are measures in place for the UoA, if necessary, that are expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are likely to be above the PRI.	There is a partial strategy in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are highly likely to be above the PRI.	There is a strategy in place for the UoA for managing main and minor primary species.
	Met?	Yes for main primary species	Yes for main primary species	Yes for all primary species
Rationale				

The intent of this PI is to assess the arrangements in place to manage the impact of the UoA on the primary species to ensure that it does not pose a risk of serious or irreversible harm to them. A general strategy to manage several species is described according to the Federal Fishing Law N° 24,922, following the Article 9°, and includes: an annual TAC (set for several species) according to stock assessments, fishing seasons, closing reproductive/juveniles' areas, minimum landings sizes, and limited fishing gear used, among others.

Since 2009, management authority determined management measures applied to Argentine hake (*Merluccius hubbsi*) fishery (CFP Resolutions N° 26/2009; N° 14/2014 and N° 16/2018) that include: access to the fishery, closure and restricted areas, biological stops, operation fishing zones and devices that allow the escape of hake are mandatory (CFP Resolution N° 13/2017). INIDEP recommendations were advised to the CFP (Santos & Villarino, 2023), establishing a TAC of 319,000 t for 2024 fishing season (CFP Resolution N° 13/2023). Even if total annual catches for the southern stock in the Southwest Atlantic Ocean have been higher than TACs established by management authority related with stock assessments (Santos & Villarino, 2020, 2021, 2022, 2023), reproductive biomass (BR) is above the level consistent with MSY over recent years (see PI 2.2.1, SI a). According to Santos & Villarino (2022), hake reproductive biomass has had a gradual but sustained recovery in the last 3 years, remaining at an average of 720,000 t. The objective reference point is that the reproductive biomass, is maintained above 600,000 t. **Therefore, the SG60 and SG80 levels are met.**

A general strategy to manage several species is described according to the Federal Fishing Law N° 24,922, following the Article 9°, and includes: an annual TACs (set for several species), according to stock assessments, fishing seasons, closing reproductive/juveniles' areas, minimum landings sizes, and limited fishing gear used, among others.

In the case of minor primary species: pink cusk-eel (*Genypterus blacodes* = *Genypterus brasiliensis*); chub mackerel (*Scomber japonicus* = *Scomber colias*), Argentine anchovy (*Engraulis anchoita*), and Brazilian flathead (*Percophis brasiliensis*), narrownose smooth-hound (*Mustelus schmitti*), angel shark (*Squatina guggenheim*) and smallnose fanskate (*Sympterygia bonapartii*), includes TACs and other measures too.

Regarding pink cuskeel, a TAC of 3,600 t was set from 2021 to 2024 (CFP Resolutions N° 6/2021; N° 6/2022; N° 25/2022 and N° 12/2023). Management measures for this species are established according to the CFP Resolution N° 25/2012 and its amendments (CFP Resolutions N° 3/2013, N° 10/2017 and N° 9/2018) that include closed areas in the so-called "pink cuskeel wells" in order to avoid fishing of this species (*Genypterus blacodes*) in areas where the resource is highly vulnerable due to its aggregation, in order to protect this species and achieve the outcomes to rebuild the stock. Volume catches in 2023 and 2024 have been kept under the TAC established, but even if total volume catches are above the TAC established during 2021 and 2022, the species is below the PRI, there is evidence that the stock is rebuilding (see PI 2.2.1, SI b)). This slight recovery could be explained by the decrease in the fishing effort applied to hake fishery by the trawling fleet and

the resilience capacity of the species. The projections made by Di Marco (2022) suggest that the most appropriate precautionary strategy would be to reach a level of fishing mortality (F) at 0.056, associated with a TAC₂₀₂₂ of 3,821 t, which would allow reaching the MSY in the long term (*i.e.* 16 years). It should be noted that pink long-lived species (30 years), slow growing, with an age of first maturity of almost 5 years, and low resilience, meaning that the recovery of reproductive biomass would not be immediately.

In the case of chub mackerel (*Scomber japonicus*), there is no evidence of overfishing or overexploitation (see Kobe diagram). As management measures, the CFP Resolutions N° 10/2023 and N° 8/2024 established the Total Allowable Catch (TAC) of 29,900 t to the South of 39° S between January 1 and December 31 from each year. Captures in 2023 and 2024 were very low than TAC.

In the case of anchovy (*Engraulis anchoita*), the CFP Resolution N° 14/2022 establishes TAC between January 1 and December 31, 2022, in the following quantities: North of 41° S, 120,000 t and 116,000 t, south of 41° S.

For Brazilian flathead (*Percophis brasiliensis*), the Resolution N° 8/2022 set a total allowable catch (TAC) of 7,300 t in the Common Fisheries Zone. From this value, 6,600 t shall be made available and an administrative reserve up to 700 t, if Commission consider necessary assign, by means of a well-founded resolution.

The reference point for squid is survival of 40% of the annual biomass calculated at the beginning of each fishing season and fishing is closed in the EEZ between 1 September and 31 January of the following year (Lovrich, 2014).

It should be noted that the capture of squid in Argentine waters is carried out between 37° and 42°, on the external platform, and south of 44°, on the middle and external platform. The 2022 season showed an increase on catch of 27% compared with 2021, comparable to 2020 (Ivanovic *et al.*, 2023).

Respect to Chondrichthyes, several management fishing measures protect chondrichthyans either directly or indirectly in Argentina. Most chondrichthyans catches take place in what is known as the Argentina Uruguay Common Fishing Zone (AUCFZ) where Total Allowable Catch (TAC) for chondrichthyans was established in 2014 by the Mixed Technical Commission of the Maritime Front (*Comision Tecnica Mixta del Frente Maritimo* - CTMFM). Only 3 groups of cartilaginous fishes are regulated by a TAC limit each year: narrownose smooth-hound (*Mustelus schmitti*), angel sharks (*Squatina spp.*) and an assemblage of at least 20 species of skates divided into coastal (9 species) and deeper (11 species) catches including *Atlantoraja castelnaui*, *A. cyclophora*, *Rioraja agassizii*, *Sympterygia acuta*, *S. bonapartii*, *Psammobatis bergi*, *P. rutrum*, *P. exenta*, *Amblyraja doellojuradoi*, *Bathyraja brachyurops*, *B. macloviana*, *B. albomaculata*, *Zearaja chilensis* and others (Ruibal Nuñez, 2020).

The Secretary of Fisheries of the Province of Chubut, as a member of the Federal Fisheries system, is an integral part of each resolution adopted referring to the national action plans.

National Action Plan for the Conservation and Management of Chondrichthyans in force since 2009 for Argentine Continental Shelf and the Regional Action Plan for the Treaty Area of the Rio de la Plata and its Maritime Front between Argentina and Uruguay, through Resolutions 4 and 7 of the Federal Fisheries Council (2013) and established that target fishing of Chondrichthyes is forbidden as well as shark finning; all sharks larger than 160 cm should be returned alive to the sea; the use of boat hooks for chondrichthyans is forbidden; specimens caught dead must be declared; when a shark larger than 160 cm is caught dead it should be delivered to the research institute for study; a maximum limit for the landing of skates, sharks and plownose chimaera (*Callorhynchus callorhynchus*), as a whole, is established and equivalent to 50% of the total species caught per take; a maximum limit of landing of skates is established and equivalent to 30% of the total of species caught per take; a maximum limit for the landing of sharks is established and equivalent to 30% of the total number of species caught per take; in the event that a haul is verified with a percentage that exceeds the limits established in the preceding articles, the vessel must move to another area of operation; on-board observers should be present on vessels to record frequent captures of Chondrichthyes. A management fishing area for chondrichthyans in national waters (> 12 nm), regulated by the Argentina and Uruguay Common Fishing Zone (AUCFZ) protects temporally demersal and benthic coastal chondrichthyans through the exclusion of bottom net trawling activity for 5 months each year from the 1 November to the 31 March in a small area (~1630 nm²) since 2010 (CTMFM Resolution N° 9/2010).

The fishery is monitored in provincial waters by the Secretary of Fisheries of the Province of Chubut through the on-board monitoring program and reports are produced annually when the fishing season is completed. Reports include the analysis of topics such as catch, landings, effort, geographic location of the fleet, length-distribution of the catch, bycatch, and other topics. Likewise, in the absence of specific and updated information on bycatch of the fleet under assessment, a

Private On-board Observer Program (POAB) was launched since 2016, managed jointly by CEDEPESCA and the Hydrology Laboratory of the Patagonian National University San Juan Bosco (CEDEPESCA & FCN-UNPSJB, 2016). The Program is financed by the client group as part of a Fishery Improvement Project, with the objective to collect detailed information on the accompanying fauna of this fishery (Godelman, 2023).

Then, there is a strategy in place for all primary species identified. **Therefore, the SG100 level is met.**

b	Management strategy evaluation			
	Guide post	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the measures/partial strategy will work, based on some information directly about the fishery and/or species involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved.
	Met?	Yes for all primary species	Yes for all primary species	No for all primary species
Rationale				

As it was described in rationales provided in the SI (a), hake is managed, considering an annual TAC determined according to analytical stock assessments and established by precautionary approach by the management authority. Also, tools are based on information directly about the species involved: biological aspects, fishing seasons, closed areas and technical measures for gear.

TACs are updated based in the monitoring conducted by OBO Program and landing samples, and research campaigns conducted to obtain biological information (*i.e.* size and age structure) and biomass abundance index. Annual TAC recommendation, based in 2023 stock assessment, includes the analysis of the following sources of information: fishing data (latest landing reports by the Argentine and foreign fleets obtained from FAO statistics); discard and bycatch information; population data and projection and risk analysis at different levels of exploitation in the short and medium term (Santos & Villarino, 2020; 2021; 2022; 2023).

The strategy of opening and closing red shrimp fishery is fully annually complied as stipulated in the CFP Resolution N° 7/2018 (Annex I, Article 4°) and its amendments. Special importance is attached to the presence of hake in bycatch, because it shares with shrimp distribution area. In monitoring 2021-2022 period, it was possible register fishing activities through provincial on-board observers, reaching a follow-up coverage of more than 15%, above the 10% usually accepted as optimal, thus providing great robustness to the data presented and high reliability to the conclusions reached to continue 2021-2022 Patagonian shrimp fishing season, as long as the requirements established in resolution continue to be met to keep the authorized fishing zone open and for which monitoring on-board vessels must be maintained. This strategy is applied principally to the target species (*Pleoticus muelleri*) and hake (*Merluccius hubbsi*).

Related with minor primary species, they are managed considering an annual TAC or measures, determined according to analytical stock assessments, and Argentine shortfin squid (*Illex argentinus*), is managed by the survival of 40 per cent of the annual biomass calculated at the beginning of each fishing season and fishing is closed in the ZEE between 1 September of each year and 31 January of the following year.

Considering the management strategy based in some information directly about the fishery and species involved, the UoA complies with some objective basis for confidence that the measures/partial strategy will work, based on some information directly about the fishery and/or species involved. **Therefore, the SG80 level is met.**

There is no evidence that testing supports high confidence that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved, and **the SG100 level is not met.**

c	Management strategy implementation			
	Guide post		There is some evidence that the measures/partial strategy is being implemented successfully .	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its overall objective as set out in scoring issue (a).
	Met?		Yes for all primary species	No for all primary species
Rationale				

TACs are estimated annually, according to data collected as part of research project targeted and adjusted with landings information (Santos & Villarino, 2020; 2021; 2022; 2023; Santos *et al.*, 2024). Hake TACs have been maintained in the recent years, achieving management objectives, *i.e.* stock assessments show that reproductive biomasses are above PRI and are fluctuating around a level consistent with MSY, although the catches have been higher than the TAC established.

The following table provides TACs and total annual catch (tonnes) in 5 years established to Argentine hake, southern stock obtained in the Southwest Atlantic Ocean:

Species	2019 TAC	2019 catches	2020 TAC	2020 catches	2021 TAC	2021 catches	2022 TAC	2022 catches	2023 TAC	2023 catches
Southern hake	280,000	272,534.8 (97.3%)	290,000	239,751.6 (82.7%)	305,000	264,456.5 (86.7%)	298,000	260,040.7 (87.3%)	313,000	265,602.2 (84.9%)

The following table provides TACs and total annual catch (tonnes) in 2023 and 2024 established to minor primary species:

a) Maximum allowable catch / TAC for 2023

Species	Area	CFP Resolution	TAC (t)	2023 Catches (t)	% of compliance
Pink cuskeel - <i>Genypterus blacodes</i>	--	N° 25/2022	3,600	1,616.7	44.9
Argentine anchovy - <i>Engraulis anchoita</i>	South of 41° S	N° 10/2023	108,000	4,185.6	3.9
Chub mackerel - <i>Scomber japonicus</i>	South of 39° S	N° 10/2023	29,900	11,545.6	38.6

b) Maximum allowable catch / TAC 2024 (catches updated to 29/10/2024*) / Argentine waters

Species	Area	CFP Resolution	TAC (t)	2024* Catches (t)	% of compliance
Pink cuskeel - <i>Genypterus blacodes</i>		N° 12/2023	3,600	1,683.3	46.8
Argentine anchovy - <i>Engraulis anchoita</i>	South of 41° S	N° 8/2024	96,000	5,361.7	5.6
Chub mackerel - <i>Scomber japonicus</i>	South of 39° S	N° 8/2024	29,900	3,314.6	11.1

c) Maximum allowable catch / TAC 2023/2024 for catches in the common fishing area with Uruguay.

Species	Area	CTMFM Resolution	Valid	TAC (t)
Narrownose smooth-hound - <i>Mustelus schmitti</i>	CTMFM	N° 4/2023	Year 2023	2,000
Angel shark - <i>Squatina guggenheim</i>	CTMFM	N° 8/2023	Year 2023	2,000
Brazilian flathead - <i>Percophis brasiliensis</i>	CTMFM	N° 13/2023	From 01/10/23 to 30/09/24	7,500
Narrownose smooth-hound - <i>Mustelus schmitti</i>	CTMFM	N° 6/2024	Year 2024	2,000
Angel shark - <i>Squatina guggenheim</i>	CTMFM	N° 7/2024	Year 2024	2,000
Brazilian flathead - <i>Percophis brasiliensis</i>	CTMFM	N° 11/2024	From 01/10/24 to 30/09/25	6,800

TACs are estimated annually according to data collected as part of research project targeted and adjusted with landings information, all of them demonstrates that its stock status is above MSY, evidencing that measures in places are being implemented successfully and is achieving its overall objective, except in the case of pink cuskeel. The partial strategy proposed since 2012 to reach a level of fishing mortality (F) at 0.056, which would allow reaching the MSY in the long term (*i.e.* 16 years), is not being implemented successfully. INIDEP recommended to establish an annual TAC of 3,821 t for all fishing operations in the Southwest Atlantic Ocean to achieve the overall objective.

The following table provides TACs established by the CFP, volume catches (tons) and percentage of compliance in Pink cuskeel in the last 5 years (source: MAGyP website, 2023):

2018 TAC	2018 Catch	2019 TAC	2019 Catch	2020 TAC	2020 Catch	2021 TAC	2021 Catch	2022 TAC	2022 Catch
2,500	3,609.6 144.4%	2,500	2,004.6 80.2%	2,500	2,932.2 117.3%	3,600	2,790.4 77.5%	3,600	1,582.8 44.0%

The strategy of opening and closing the red shrimp fishery is fully complied annually. Likewise, the fishery is monitored throughout the season, through the On-board Observer Program of INIDEP, and the analysis of biological-fishery information.

Then, there is some evidence that the measures/partial strategy is being implemented successfully. **Therefore, the SG80 level is met.**

There is no clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its overall objective as set out in scoring issue (a) and **the SG100 level is not met.**

d	Shark finning			
	Guide post	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Yes	Yes	Yes
Rationale				

According to the Article 2° of the CFP Resolution N° 4/2013, the practice known as "shark finning" is forbidden in Argentina. **Therefore, the SG60 level is met.**

The National Directorate of Fisheries Coordination and Inspection (*Dirección Nacional de Coordinación y Fiscalización Pesquera - DNCyFP*) periodically establishes by lottery which vessels are assigned a national fishery inspector. The results of these assignments are published in the MAGyP website (https://www.magyp.gob.ar/sitio/areas/pesca_maritima/inspectores/). Before each departure, the inspector verifies that the fishing gear declared on-board is authorized. When vessels return to port, inspections are conducted to verify if vessel complies with fishing license and species harvested. Also, it is controlled the harvest size of red shrimp established by the corresponding regulation and quantities landed. Findings detected by inspectors in port control tasks must be reported to the competent authorities (PNA, delegations of the National Directorate of Fisheries Coordination and Inspection, SENASA).

Chondrichthyans have been identified as minor secondary species, except narrownose smooth-hound (*Mustelus schmittii*) and spiny dogfish (*Squalus acanthias*) as bycatch in a very low level, but there is a high degree of certainty that shark finning is not taking place. In case of non-compliance, the vessel is sanctioned. As it is mentioned in the CFP Resolution N° 4/2013 and amendments, shark finning is forbidden. All vessels fishing must have an on-board observer and inspector, who ensures compliance in Law N° 24,922, and the vessel risks having the fishing permit withdrawn.

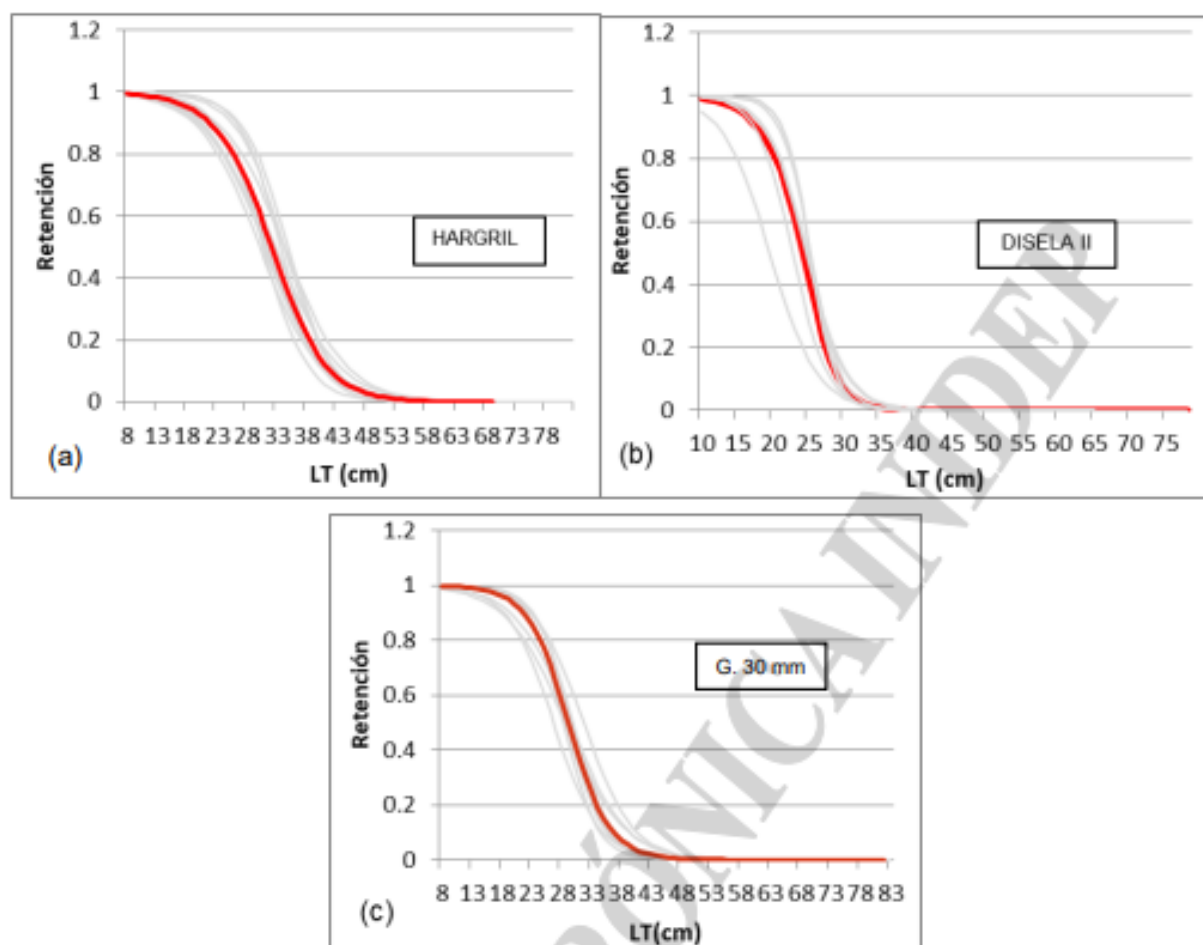
In the database of the On-board Observer Program, it is recorded that there have been no cases of shark or ray finning (Godelman, 2023). According to Cuevas (2016), shark finning was never a common practice in Argentina. **Therefore, the SG80 and SG100 levels are met.**

e	Review of alternative measures			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate.	There is a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all primary species, and they are implemented, as appropriate.
	Met?	Yes for main primary species	Yes for main primary species	No for all primary species
Rationale				

The Article 4° of the CFP Resolution N° 7/2018 establishes that shrimp vessels must operate with shrimp fishing gears with 'tangones', a minimum mesh size in the codend of 45 mm, 9 mm between opposite knots ('lumen') with stretched and wet mesh. The maximum vertical opening of the net mouth must not exceed 150 cm. Also, the Article 5° states that the Enforcement Authority will make it mandatory to use a selectivity device approved by the Federal Fisheries Council when the catch ratio between hake and shrimp or the accumulated catch of hake in the fishery exceeds the maximum value recommended by INIDEP. **Therefore, the SG60 is met.**

An experience in hake selectivity, in the shrimp fishery was carried out in 2019 and the previous one was carried out in 2007, with Disela and Hargril selectivity device (Roth, 2019). According to the review of some fishing reports and visits to vessels, some of them use the selectivity mechanism called Disela and others the one called Hargril.

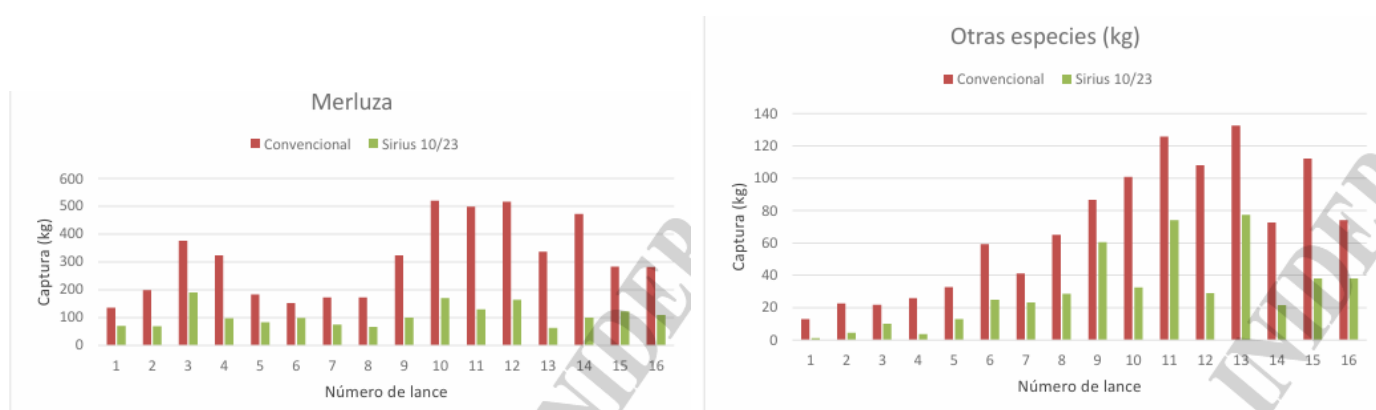
Below is observed retention curves according to the LT of hake and mean retention curves for Hargril (a), Disela II (b) and 30 mm separation grid, between rods (c).



Based on the results of the evaluation of the selectivity mechanisms, the CFP Act N° 2/2020 agreed to advance improvements to the devices in force at the time, which were effective at the time of their design and approval, but are not suitable for the current conditions of the fishery. This situation led to the adoption of alternative management measures, such as the establishment of a limit of 0.20 in the common hake/shrimp ratio, which, if reached, defines the closure of the zone or subzone (CFP Act N° 19/2020), which prevents the escape of specimens of the target species and limits the catch of common hake.

The Article 5° of the CFP Resolution N° 9/2022 establishes that “the Enforcement Authority will continue the actions initiated to plan, design, and test selectivity devices that are efficient for the fishery within the framework of the ongoing work of the By-Catch Commission created by the CFP Act N° 8/2019”.

In 2023, a selectivity device called "Sirius 10/23" was tested for shrimp fishing with ramp-type vessels. Results in catch per fishing haul (kg) of hake, shrimp and other species, with a conventional net and the test net are shown in the following figures.



Recently in 2024, there were a fishing campaign to test the net called Topless (campaign VA-06/2024), within the framework of the Fishing Gear and Capture Methods Development Program for the Shrimp (*Pleoticus muelleri*) Monitoring Commission (Moriondo Danovaro *et al.*, 2024). In relation to cases where the unwanted catch occurs so infrequently that a review of alternative measures is not necessary. Guidance GSA3.5.3 allows teams to indicate that the unwanted catch is negligible and use their discretion as to whether the 'alternative measures' scoring issue should be scored. Considering that there is very low unwanted catch of minor primary species in the Argentine red shrimp offshore fishery and, there is not needed to apply a review of alternative measures to minimise UoA-related mortality for minor species.

Considering the clause SA3.5.3.2 of the Fisheries Standard v2.01 (SA3.5.3.2), 'Regular review' means at least once every five years, then there is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species. **Therefore, the SG80 level is met.** However, the most of them like selectivity devices are continuing probing to implement as appropriate. **So, the SG100 level is not met.**

Overall Performance Indicator score	85
Condition number (if relevant)	N/A

PI 2.1.3 – Primary species information

PI 2.1.3		Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species		
Scoring Issue		SG 60	SG 80	SG 100
a	Information adequacy for assessment of impact on main primary species			
	Guide post	Qualitative information is adequate to estimate the impact of the UoA on the main primary species with respect to status. OR If RBF is used to score PI 2.1.1 for the UoA: Qualitative information is adequate to estimate productivity and susceptibility attributes for main primary species.	Some quantitative information is available and is adequate to assess the impact of the UoA on the main primary species with respect to status. OR If RBF is used to score PI 2.1.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for main primary species.	Quantitative information is available and is adequate to assess with a high degree of certainty the impact of the UoA on main primary species with respect to status.
	Met?	Yes for main primary species	Yes for main primary species	No for main primary species
Rationale				

There are qualitative and quantitative information available of Argentine hake collected by the INIDEP Demersal Fisheries Program through the Biological-Fisheries and Environmental Information Acquisition Program. On board observer has obtained data of landings and on-board fishing data for many years through landing samples, monitoring, research cruises and stock assessments. They are adequate to estimate the impact of the UoA on the main primary species with respect to status, to assess annually the sustainability of stock (*i.e.* abundance, distribution, population structure and other biological parameters) and establish annually TACs for Southern hake stock. **Therefore, the SG60 and SG80 levels are met.**

Moreover, the hake-shrimp ratio is monitored daily by INIDEP onboard observers in the Argentine red shrimp fleet operating in federal waters, as it is one of the trigger reference points used in the fishery's harvest control rule. A study has been conducted by INIDEP to determine the relative error in the 2009 estimations of hake bycatch used in the stock assessments of hake, and it was found that the relative error is 10% or less when at least 1,100 hauls or more are monitored in a year, in any given jurisdiction (provincial or federal). The analysis found that the current sampling size has kept the relative error at 5% or less and that this precision level is satisfactory. Also, the expected volume of bycatch in the shrimp fishery was estimated as part of the stock assessment of hake (predictive analysis). The predictive stock assessments for hake are carried out with the goal of ensuring that the abundance level and stock structure required in the TRP are achieved with a respective uncertainty level (Blanco *et al.*, 2023, 2023a; Santos *et al.*, 2024; Villarino &

Hernandez, 2024). Blanco *et al.* (2023) considered the following issues to reduce the uncertainty level to comply with a high degree of certainty:

-Compile the databases of provincial observers and INIDEP, using a standardized protocol for estimating the incidental catch of hake.

-Obtain information on the incidental catch of hake collected by observers aboard the coastal fleet of vessels under 21 meters in length operating off the coast of Chubut Province when targeting shrimp during the summer season. **Therefore, the SG100 level is not met.**

Information adequacy for assessment of impact on minor primary species				
b	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status.
	Met?			Yes for minor primary species
Rationale				

There is some quantitative information available and adequate to assess the impact of the UoA on minor primary species with respect to status. Fisheries information is available due the observer program and samplings collected in landing process. These data are used by INIDEP Research Programs to assess annually the sustainability of the stocks (estimation of abundance and reference points) and establish annually TACs for fishery management. The unwanted catch of minor primary species in general is very low compared with total catch, less than 1% in the last 4 years (see Table 14).

Therefore, there are some quantitative information (*i.e.* total catches, monitoring, research cruises and stock assessments), available and adequate estimate the impact of the UoA on minor primary species with respect to status. **Therefore, the SG100 level is met.**

Information adequacy for management strategy				
c	Guide post	Information is adequate to support measures to manage main primary species.	Information is adequate to support a partial strategy to manage main primary species.	Information is adequate to support a strategy to manage all primary species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
	Met?	Yes for main primary species	Yes for main primary species	No for all primary species
Rationale				

Information from INIDEP OBO Program as well as from annual research surveys provides relevant knowledge on the basic biological structure to support a strategy to manage main primary species. The ongoing collection of data by INIDEP Demersal and Austral fisheries programs means information is adequate to support a partial strategy, and there is some evidence that the measures are being implemented successfully. **Therefore, the SG60 and SG80 levels are met.**

However, some of the species caught present gaps of information means this cannot be concluded with a high degree of certainty and **the SG100 level is not met.**

Overall Performance Indicator score	85
Condition number (if relevant)	N/A

PI 2.2.1 – Secondary species outcome

PI 2.2.1		The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit		
Scoring Issue		SG 60	SG 80	SG 100
a	Main secondary species stock status			
	Guide post	Main secondary species are likely to be above biologically based limits.	Main secondary species are highly likely to be above biologically based limits.	There is a high degree of certainty that main secondary species are above biologically based limits.
		OR	OR	
		If below biologically based limits, there are measures in place expected to ensure that the UoA does not hinder recovery and rebuilding.	If below biologically based limits, there is either evidence of recovery or a demonstrably effective partial strategy in place such that the UoA does not hinder recovery and rebuilding.	
	Met?	RBF	RBF	RBF
Rationale				

Secondary species usually include fish and shellfish species that are not managed according to reference points and birds/mammals/reptiles/amphibians (all species that are out of scope of the standard) that are not ETP species.

According to Table 16 provided in the background and following Decision Assessment Tree (Figure GSA3 of Fisheries Standard v2.01), Sooty shearwater (*Ardenna grisea*), Kelp gull (*Larus dominicanus*), Cape petrel (*Daption capense*), South American stern (*Sterna hirundinacea*), Wilson's storm petrel (*Oceanites oceanicus*) and Southern petrel (*Fulmarus glacialisoides*) are classified as main. Kelp gull was the species most frequent during fishing operation, principally during bycatch. These species should be considered as data deficient as there are no biologically based limits available, derived either from analytical stock assessment or using empirical approaches. So, the team concluded to use RBF for this PI as a result of applying PSA analysis only for main secondary species.

Relating to RBF analysis, this PI pass unconditional with a score of 80 (see **section 11.8.2 Productivity Susceptibility Analysis (PSA)**). The MSC-PSA derived score for 6 species and UoA are:

- Kelp gull (*Larus dominicanus*): 89 (Low Risk)
- Cape petrel (*Daption capense*): 89 (Low Risk)
- South American stern (*Sterna hirundinacea*): 89 (Low Risk)
- Wilson's storm petrel (*Oceanites oceanicus*): 89 (Low Risk)
- Sooty shearwater (*Ardenna grisea*): 86 (Low Risk)
- Southern petrel (*Fulmarus glacialisoides*): 83 (Low Risk)

It is important mention that cumulative impacts were not considered, due the UoA has not main species that catches over 10% of the total UoA catch. So, the team considered to conduct the PSA only in the UoA. **As result to apply RBF to only main secondary species, this PI pass unconditional reaching a score of SG60 and SG80.**

Minor secondary species stock status				
b	Guide post			Minor secondary species are highly likely to be above biologically based limits.
				OR
	Met?			If below biologically based limits', there is evidence that the UoA does not hinder the recovery and rebuilding of secondary species
Rationale				

As it is identified in the Principle 2 background, there is several minor secondary species that interact with the fishery. According to the PF4.1.4 of MSC Fisheries Standard v2.01, *“the team may elect to conduct a PSA on “main” species only when evaluating PI 2.1.1 or 2.2.1”*. In the same way, PF5.3.2 states that *“the final PI score shall be capped considering “main” species in the PSA analysis, the final PI score shall not be greater than 80”*. Also, the MSC Interpretation Log, *‘The MSC recognize that there are time and cost implications of scoring each individual element separately, particularly in cases where there are large numbers of species to assess. The teams should list which main or minor species are assessed in each component to make clear what is being scored as main vs minor. All minor species automatically achieve at least SG80’*. Taking to account this approach and considered that all “minor” species automatically meet SG80, the team decided not include them in the PSA analysis and minor secondary species were not scored.

Overall Performance Indicator score	80
Condition number (if relevant)	N/A

PI 2.2.2 – Secondary species management strategy

PI 2.2.2		There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are measures in place, if necessary, which are expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be above biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a partial strategy in place, if necessary, for the UoA that is expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be above biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a strategy in place for the UoA for managing main and minor secondary species.
	Met?	Yes for main secondary species	Yes for main secondary species	No for all secondary species
Rationale				

A Private On-board Observer Program (POAB) was launched since 2016, managed jointly by CEDEPESCA and the Hydrology Laboratory of the Patagonian National University San Juan Bosco. The Program is financed by the client group as part of a Fishery Improvement Project, with the objective to collect detailed information on the accompanying fauna of this fishery (Godelman, 2023).

As it was identified in the PI 2.2.1, only seabirds were determined as main secondary species for the fishery under assessment. As it is reviewed in the P2 background, during monitoring activities conducted by POAB, there was no registration of mortality of these species during the fishing hauls monitored. Also, observers determined that the main interaction with the fishery is observed with a group of seabirds near to the vessel, swimming or flying, perched in the

vessel or feeding. The team considered that the bycatch of secondary seabirds with injuries or mortality consequences to the individuals is rare and the fishery's impact is negligible (see also risk scoring of susceptibility attributes), so it is unlikely that the fishery would be hindering its recovery or rebuilding. Therefore, there is no needed to have a partial strategy in place for this group. **So, the SG60 and SG80 levels are met.**

As the fishery has not a strategy to reduce the interaction with seabirds and prevent any mortality, even if the impact is negligible, **the SG100 level is not met.**

b	Management strategy evaluation			
	Guide post	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/species).	There is some objective basis for confidence that the measures/partial strategy will work, based on some information directly about the UoA and/or species involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or species involved.
	Met?	Yes	Yes	No
Rationale				

There is some objective basis for confidence that the partial strategy will work, based on some information directly about the UoA.

Fishery management relies on research campaigns that are conducted twice a year by INIDEP. These aim at (i) assessing the status of the reproduction process and the recruitment process; (ii) estimating abundance and biomass; and (iii) calculating length distributions, among other research objectives. In addition, real-time monitoring in waters under federal jurisdiction is provided by INIDEP's On-board Observers Program, which allows for the dynamic opening and closure of the different fishing areas in which the Argentine Sea is divided for statistical and management purposes. The main harvest strategy is set by the Federal Fisheries Council that controls fishing in waters under federal jurisdiction. Currently, fishery management measures at the federal level are to be found in the CFP Resolution N° 7/2018, modified by means of the CFP Resolution N° 9/2022.

The Federal Fishery Council opens and closes fishing areas relying on advice provided by INIDEP regarding catch length, proportion of impregnated females and the incidental catch of Argentine hake (*Merluccius hubbsi*). The CFP Resolution N° 9/2022 amends Article 17° of Annex I in the CFP Resolution N° 7/2018, the Federal Fisheries Council formalized a harvest control rule for the fishery under federal jurisdiction. Article 17° now explicitly states that fishing areas will be dynamically opened and closed, and that fishing areas will be closed when, according to information provided by INIDEP, a high level of mature or impregnated females is present in the catch.

Several no-fishing zones have been instituted in conjunction with Chubut and Santa Cruz to protect certain reproduction and nursery areas. In the mid-1980s, the first regulations on fishery management of Argentine red shrimp were issued, with the aim of preventing shrimp overfishing. Simultaneously, the first closed area aimed to protect the growth of juvenile Argentine red shrimps was put into effect in the area known as Bajo Mazarredo Bay area in the San Jorge Gulf (in the sector of the gulf under jurisdiction of the Province of Santa Cruz) (Boschi, 1989; Roux *et al.*, 2012). The area was shown to also protect reproductive concentrations in the months of January and February. As of 2017, the San Jorge Gulf in its entirety is closed to fishing to protect Argentine red shrimp's reproductive process and to avoid recruitment overfishing. It should be noted that the San Jorge Gulf is under jurisdiction of Chubut and Santa Cruz, and its closure is instituted by those provinces as a contribution to the coordinated management of the Argentine red shrimp stock, as shown in the CFP Act N° 14/2017, and CFP Resolutions N° 7/2018 and N° 22/2022.

Private On-board Observer Program (POAB) managed jointly by CEDEPESCA and the Hydrology Laboratory of the Patagonian National University San Juan Bosco collect detailed information on the accompanying fauna of this fishery since 2016. These data allow to establish that the species captured like bycatch of this fishery are very low, less than 1%, considering a period of 4 years. Therefore, the team considered that there is some objective basis for confidence that the partial strategy will work, based on some information directly about the UoA and the negligible impact of the fishery under assessment in the bycatch components. **Therefore, the SG60 and SG80 levels are met.**

There are no testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or species involved. **So, the SG100 level is not met.**

c	Management strategy implementation			
	Guide post		There is some evidence that the measures/partial strategy is being implemented successfully .	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a) .
	Met?		Yes	No
Rationale				

According to rationales provided for SI a) and b), there is no needed to have in place a partial strategy for seabirds, due it is unlikely that fishery under assessment would be hindering its recovery or rebuilding. Also, there is evidence that the fishery rarely impacts on secondary species bycatch, due its composition in the total weight is very low (*i.e.* less than 1%), considering a period of 5 years. **Therefore, the SG80 level is met.**

However, the MSC requests that all fisheries using v2.01 must considered all scoring elements at SG100 in Primary and Secondary components even if there are rare or negligible catches, even if these species will generally be scored as 'minor' species. Therefore, there is no clear evidence that the partial strategy is being implemented successfully and is achieving its objective as set out in SI a). **Therefore, the SG100 level is not met.**

d	Shark finning			
	Guide post	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Yes	Yes	Yes
Rationale				

According to the Article 2° of the CFP Resolution N° 4/2013, the practice known as "shark finning" is forbidden in Argentina. **Therefore, the SG60 level is met.**

The National Directorate of Fisheries Coordination and Inspection (*Dirección Nacional de Coordinación y Fiscalización Pesquera* - DNCyFP) periodically establishes by lottery which vessels are assigned a national fishery inspector. The results of these assignments are published in the MAGyP website (https://www.magyp.gob.ar/sitio/areas/pesca_maritima/inspectores/). Before each departure, the inspector verifies that the fishing gear declared on-board is authorized. When vessels return to port, inspections are conducted to verify if vessel complies with fishing license and species harvested. Also, it is controlled the harvest size of red shrimp established by the corresponding regulation and quantities landed. Findings detected by inspectors in port control tasks must be reported to the competent authorities (PNA, delegations of the National Directorate of Fisheries Coordination and Inspection, SENASA).

Chondrichthyans have been identified as minor secondary species, except narrownose smooth-hound (*Mustelus schmittii*) and spiny dogfish (*Squalus acanthias*) as bycatch in a very low level, but there is a high degree of certainty that shark finning is not taking place. In case of non-compliance, the vessel is sanctioned. As it is mentioned in the CFP Resolution N° 4/2013 and amendments, shark finning is forbidden. All vessels fishing must have an on-board observer and inspector, who ensures compliance in Law N° 24,922, and the vessel risks having the fishing permit withdrawn.

In the database of the On-board Observer Program, it is recorded that there have been no cases of shark or ray finning (Godelman, 2023). According to Cuevas (2016), shark finning was never a common practice in Argentina. **Therefore, the SG80 and SG100 levels are met.**

e	Review of alternative measures to minimise mortality of unwanted catch			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main secondary species.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main secondary species and they are implemented as appropriate.	There is a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all secondary species, and they are implemented, as appropriate.
	Met?	Not scored	Not scored	Not scored

Rationale

In relation to cases where the unwanted catch occurs so infrequently that a review of alternative measures is not necessary, guidance GSA3.5.3 allows teams to indicate that the unwanted catch is negligible and use their discretion as to whether the 'alternative measures' scoring issue should be scored.

Moreover, the National Action Plan for Seabirds aims to identify standards of good fishing practices and mitigation measures, as well as promoting the education, training and dissemination of these issues with the concrete purpose of reducing the fortuitous mortality of seabirds associated with fisheries. According to rationales provided for SI a) and b), there is no needed to have in place a partial strategy for seabirds, due it is unlikely that fishery under assessment would be hindering its recovery or rebuilding. Also, there is evidence that the fishery rarely impacts on secondary species bycatch, due its composition in the total weight is very low (*i.e.* less than 1%), considering a period of 5 years. The main strategy in place to reduce the unwanted catch of seabirds in Argentine fisheries stated against the CFP resolution N° 3/2017 states the mandatory use of Bird Scaring Lines (BRLs) exclusively for freezer vessels operating with bottom trawls. The BRLs were designed for vessels using a single bottom trawl that have high risk of interaction with seabirds, and this measure does not complaints shrimp vessels "*tangoneros*", where interactions are reduced.

Also, the total catch of minor secondary species was estimated less than 0.1% for most species (see Table 14). Also, Roux (2000) reported that many species have a high survival rate, reaching more than 80% in some cases, due to the community structure. Then, the impact of Argentine red shrimp fishery for minor secondary species was considered "negligible".

Considering the above mentioned, there is not needed to apply a review of alternative measures to minimise UoA-related mortality. **Therefore, this SI is not scored.**

Overall Performance Indicator score	85
Condition number (if relevant)	N/A

PI 2.2.3 – Secondary species information

PI 2.2.3		Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species		
Scoring Issue		SG 60	SG 80	SG 100
a	Information adequacy for assessment of impacts on main secondary species			
	Guide post	Qualitative information is adequate to estimate the impact of the UoA on the main secondary species with respect to status.	Some quantitative information is available and adequate to assess the impact of the UoA on main secondary species with respect to status.	Quantitative information is available and adequate to assess with a high degree of certainty the impact of the UoA on main secondary species with respect to status.
		OR If RBF is used to score PI 2.2.1 for the UoA:	OR If RBF is used to score PI 2.2.1 for the UoA:	
		Qualitative information is adequate to estimate productivity and susceptibility attributes for main secondary species.	Some quantitative information is adequate to assess productivity and susceptibility attributes for main secondary species.	
Met?		Yes for main secondary species	Yes for main secondary species	No for main secondary species
Rationale				

As indicated in PI 2.2.1, the stock status of main secondary species impacted by the UoAs remains unknown and RBF was triggered to assess their status against that SI.

The fishery dependent information (positions and duration of the hauls, other effort indicators, catches, landings, discards) is collected mainly by the Secretary of Fisheries of the Province of Chubut by the On-board Observer Program, but data collected are analysed only as frequency of occurrence per species. Additionally, a Private On-board Observer Program (POAB) was launched since 2016, managed jointly by CEDEPESCA and the Hydrology Laboratory of the

Patagonian National University San Juan Bosco. The objective to collect detailed information on the accompanying fauna of this fishery (Godelman, 2023).

-Information generated by the fishing vessels: according to the SAGyP Resolutions N° 48/2019 and N° 62/2019, all vessels shall complete a fishing report (*'Parte de Pesca Electronico'*) that includes traceability details as vessel name and registration, departure and landing port, start and end of fishing trip, fishing area, fishing gear used and composition, and volume of scallop meat produced in the fishing trip. The Province of Chubut implemented this declaration system in 2020 through an accession and cooperation agreement. Also, the Province states through the Resolution N° 525/2022 that the unwanted catch found in fishing gears or destined for the crew shall be registered in this report. All vessels managed must use GPS. This requirement is part of VMS or SICAP; where all fishing trips are tracked and landings must be recorded. In case of incongruence in the report declared by captain, sanction measures established in the Law N° 24,922 will be applied.

Data collected by the observers are carried out a scientific research campaign on the species and bycatch composition to assess the status of the resource and its distribution. If INIDEP does not have scientific research vessels, the participation of one or more vessels from the commercial fleet that are suitable will be required. In areas prohibited for trawling in waters under national jurisdiction, the CFP may decide to authorize shrimp fishing considering the results of the campaign. INIDEP has launched a scientific prospecting plan with commercial vessels from the shrimp fleet, to verify the presence of concentrations of shrimp with low or negligible frequency of accompanying fauna.

All the information presented in the section **11.8.1. Productivity Susceptibility Analysis (PSA)** is adequate to assess productivity and susceptibility attributes for main secondary species.

Besides, although no species-specific information is available for all productivity attributes, there is abundant information on closely related species. Thus, quantitative information adequate to assess productivity attributes on main secondary species is available in scientific literature and different open database as birdlife international. **Therefore, the SG60 and SG80 levels are met.**

As the RBF was used to score PI 2.2.1 for the UoA, **the SG100 level is not met.**

Information adequacy for assessment of impacts on minor secondary species			
b	Guide post		Some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status.
	Met?		Yes for minor secondary species
Rationale			

Monitoring of incidental catch has been performed since 2004, when INIDEP included bycatch species in the regular records taken by on-board observers. They coordinate their shipment in the coastal fleet to obtain reliable and continuous information (CFP Resolution N° 4/2013). INIDEP instructed at OBO Program (now Acquisition of Biological, Fishing and Environmental Information Program) to carry out actions and methodologies required for proper quantification of bycatch species and implement them during fishing tasks. The CFP requested at SAYDS to sign agreements with research institutions to ensure the analysis data obtained by OBOs (CFP Resolution N° 6/2009). In the case of Chondrichthyes, there is some quantitative information about the catch composition and biological data collected by OBO's and research groups. This information is transferred to management authorities to establish management measures and is considered adequate for those purposes. However, that information was not available to this assessment.

In the absence of specific and updated information on bycatch of the fleet under assessment, a Private On-board Observer Program (POAB) was launched since 2016, managed jointly by CEDEPESCA and the Hydrology Laboratory of the Patagonian National University San Juan Bosco. The Program is financed by the client group as part of a Fishery Improvement Project, with the objective to collect detailed information on the accompanying fauna of this fishery (Godelman, 2023). The data collection obtained by on-board observers (*i.e.* provincial and private) indicates that there is quantitative evidence that the fishery rarely impacts bycatch species (seabirds, fishes, crustaceans, invertebrates), due its composition in the total weight is very low (*i.e.* less than 1%), considering a period of 5 fishing seasons. Then, some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status. **Therefore, the SG100 level is met.**

c	Information adequacy for management strategy			
	Guide post	Information is adequate to support measures to manage main secondary species.	Information is adequate to support a partial strategy to manage main secondary species.	Information is adequate to support a strategy to manage all secondary species, and evaluate with a high degree of certainty whether the strategy is achieving its objective .
	Met?	Yes for main secondary species	Yes for main secondary species	No for all secondary species
Rationale				

In the case of seabirds and Chondrichthyes, management of these groups are under the umbrella of respective PANs and information is continuously collected and updated to support at least a partial strategy. In the National Action Plans framework (*i.e.* PAN-Aves and PAN-Tiburones), the management authority instructed to research entities (INIDEP, Universities, ONGs, etc.) carry out observation activities and provide information relating to fishery interactions with non-target species to promote protection of these species with rebuilding stock plans and/or mitigation measures. **Therefore, the SG60 level is met.**

In the case of chondrichthyans, there are specific tasks related to monitoring as review observation and sampling protocols used by INIDEP' OBOs and to implement them, including assessment mechanisms to exchange information and create shark good fishing practices on-board of fishing vessels. For seabirds, similar milestones are established: maintain and/or increase monitoring coverage; implement mitigation measures; and to promote good fishing practices to reduce unwanted catch of seabirds. **Therefore, the SG80 level is met.**

In the case of minor secondary species, the information is limited to obtain bycatch composition of the fishery under assessment. As the Management Plan for shrimp fishery defined accordingly the CFP Act N° 27/2024 was recently created, there is not tested yet if the coverage of on-board observers is fully in place and the 10% of total monitoring allows to achieve the objectives. **Therefore, the SG100 level is not met.**

Overall Performance Indicator score	85
Condition number (if relevant)	N/A

PI 2.3.1 – ETP species outcome

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species		
Scoring Issue		SG 60	SG 80	SG 100
a	Effects of the UoA on population/stock within national or international limits, where applicable			
	Guide post	Where national and/or international requirements set limits for ETP species, the effects of the UoA on the population/stock are known and likely to be within these limits.	Where national and/or international requirements set limits for ETP species, the combined effects of the MSC UoAs on the population /stock are known and highly likely to be within these limits.	Where national and/or international requirements set limits for ETP species, there is a high degree of certainty that the combined effects of the MSC UoAs are within these limits.
	Met?	Yes	Yes	No
Rationale				

ETP Chondrichthyes

As it is reviewed in the background, there is only 1 ETP species of Chondrichthyes that interact with the fishery under assessment: *Squalus acanthias*. This species is classified in the Appendix II of Convention on Migratory Species, for the northern hemisphere, the team has considered it in the analysis applying the precautionary approach, even though their incidental catches in the Argentine red shrimp are very low (*i.e.* they do not exceed 0.01% related with the total catch) in the last 6 fishing seasons and the status of its population is unknown.

Following the MSC Interpretation Log, *limits that are part of binding regulatory requirements that the fishery needs to comply with (e.g. similar to harvest control rules) should always be considered as 'limits of national and international requirements' by assessment teams. So, the intent is that the scoring issue a) is scored when there are quantitative*

mortality limits for that species. Since 2013, the CFP established a management strategy for Chondrichthyes, indicating the limits to reduce unwanted catch of chondrichthyans and to ensure the sustainability of these species. A maximum landing limit for rays and sharks is established at 30% of total species caught by fishing trip, respectively. In case of landing of elasmobranchs, it must not exceed 50% of total catch volume (Art. 2°, 3° and 4° of the CFP Resolution N° 8/2021). In case that a fishing haul exceeds these limits, the vessel shall change fishing operation area. Also, crew must register all catches related with sharks and rays according to the CFP Resolution.

-Art. 2°: The volume of landings of ray species shall be up to 30% of total weight catches in the fishing trip.

-Art. 3°: The volume of landings of shark species shall be up to 30% of total weight catches in the fishing trip.

-Art. 4: The volume of landing of chondrichthyans when catch is mixed (sharks, rays and chimaeras) shall be up to 50% of total weight of target species per trip.

In case that a fishing haul exceeds these limits, the vessel shall change fishing operation area. Also, the crew shall record all catches related with chondrichthyans in the Electronic Fishing Report. **Therefore, the SG60 level is met.**

MSC UoA	Proportion (%) of elasmobranchs unwanted catch respecting to total catches	Reference
Patagonian scallop	1%	Colonello & Massa, 2014
Southern king crab fishery	0.49%*	Mauna <i>et al.</i> , 2017
Argentine red shrimp coastal fishery	0.01%	Gongora <i>et al.</i> , 2024
Argentine red shrimp offshore fishery	0.08%	CEDEPESCA, 2023

(*) Only for *S. acanthias*. The study of Mauna *et al.*, (2017) provides percentage of spatial occurrence of related bycatch species (*i.e.* presence in positive hauls relative to total hauls expressed as percentage) and does not refer to the percentage by weight of the total catch of all species by the UoA. The catch percentages of bycatch components are unknown to determine which species are main and minor for Southern king crab fishery.

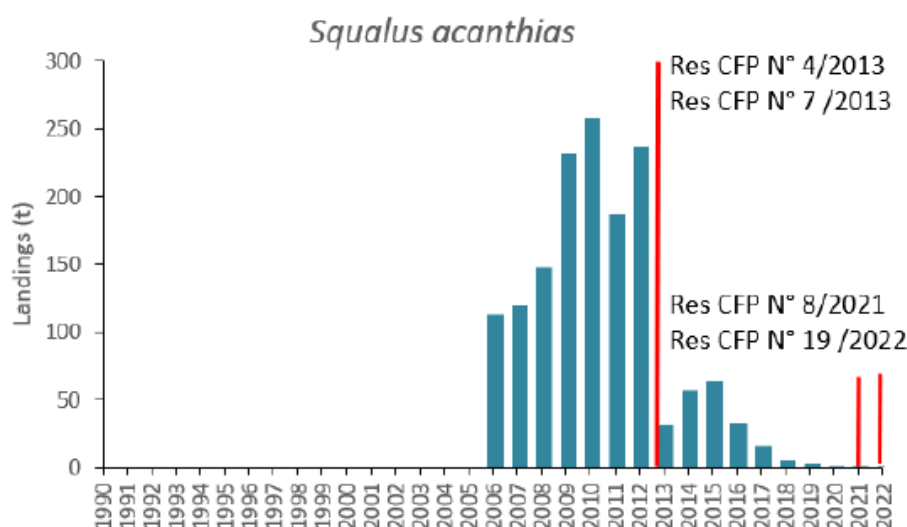
In Argentina, it is captured by bottom trawl fisheries targeting the Argentine hake (*Merluccius hubbsi*), Argentine red shrimp (*Pleoticus muelleri*) and Patagonian scallop (*Zygochlamys patagonica*) (Bovcon *et al.*, 2013; Schejter *et al.*, 2012; cited in the IUCN Regional Workshop, 2017) and also by pair-trawling in southern Brazil, where the species is not abundant with sporadic records (Vooren, 1997; Soto, 2001; cited in the IUCN Regional Workshop, 2017). In the Province of Chubut, fishers had reported large catches of this species between 3-5 miles from the coast. This species is also frequently caught by the Argentine red shrimp trawl fishery operating in this gulf and adjacent waters, with an occurrence frequency of 21%, representing the tenth most important species and the fifth species of chondrichthyans (Gongora *et al.*, 2009). It is captured more frequently in the closed area for juvenile hake. There are also records of hauls in which this species has been dominant in the catches (Gongora *et al.*, 2009). This species is also caught by the coastal fishing fleet operating in the Isla Escondida area in Chubut.

According to landings of this species declared in the Electronic Fishing Reports by the MSC-UoA, the following table summarize volumes (tonnes) and weights (percentage of total catch addressed to target species) obtained in the last 5 years:

Year	2019		2020		2021		2022		2023	
Species/MSUoA	Landing (t)	%	Landing (t)	%	Landing (t)	%	Landing (t)	%	Landing (t)	%
<i>Squalus acanthias</i>	2.8	-	1.2	-	0.2	-	0.1	-	3.3	-
Patagonian scallop	3,144.4	0.09	4,621.70	0.03	6,277.60	0.00	6,698.90	0.00	5,531.20	0.06
Southern king crab (Central Patagonian stock)	932	0.30	969	0.12	744	0.03	763.40	0.01	639,20	0.52
Argentine red shrimp (Provincial waters)	70,360.1	0.00	69,602.20	0.00	25,682.50	0.00	60,174.0	0.00	71,896.70	0.00
Argentine red shrimp (Federal waters)	136,515.5	0.00	101,902.9	0.00	144,935.10	0.00	135,256.60	0.00	113,164.3	0.00

In the report provided by Argentina (2014) in the global exploitation and conservation status of chondrichthyans in the FAO action plan framework, it is mentioned that the catches and abundance indices of spiny dogfish were assessed in the Argentine Sea. This species is not a commercial interest and is mainly harvested as bycatch in the Argentine hake, hoki and Southern blue whiting fisheries, which is almost entirely discarded. The analysis of abundance indices carried out between 1992 and 2006 indicated a decrease for the Buenos Aires and Central Region of the Argentine Continental Shelf. However, for the area of greatest concentration of the species between 45° and 55° S, the abundance indices showed a

stable trend. In Argentina, since 2006, there has been a specific opening that allows the recording of landings in the fishing statistics. After the application of measures established in the CFP Resolutions N° 4/2013 and N° 7/2013, landings of this species were reduced until were almost absent since 2021 (Colonello, 2022).



Therefore, the combined effects of the MSC UoAs on the population/stock are known, due there are below to 1% and highly likely to be within these limits (provincial management measures established to not landing up to 50% of elasmobranchs related to total UoA weight). **Therefore, the SG80 level is met.**

The team considered that there is not a high degree of certainty, due there is recent study of post-capture survival rate of ETP chondrichthyans species in the UoA (Ruibal Nuñez, 2020) and **the SG100 level is not met.**

b	Direct effects			
	Guide post	Known direct effects of the UoA are likely to not hinder recovery of ETP species.	Direct effects of the UoA are highly likely to not hinder recovery of ETP species.	There is a high degree of confidence that there are no significant detrimental direct effects of the UoA on ETP species.
	Met?	Yes for seabirds Yes for marine mammals	Yes for seabirds Yes for marine mammals	Yes for seabirds Yes for marine mammals
Rationale				

ETP seabirds

There are no limits set for protection and rebuilding, provided through the national legislation and/or binding international agreement for ETP seabird species, the team included this group in this scoring issue. 14 ETP seabirds (black-browed albatross - *Thalassarche melanophris*; white-chinned petrel – *Procellaria aequinoctialis*; Southern royal albatross - *Diomedea epomophora*; Southern giant petrel - *Macronectes giganteus*; great shearwater – *Ardenna gravis*; wandering albatross – *Diomedea exulans*; Magellan penguin - *Spheniscus magellanicus*; Northern royal albatross – *Diomedea sanfordi*; light-mantled albatross – *Phoebastria palpebrata*; Atlantic yellow-nosed albatross - *Thalassarche chlororhynchus*; spectacled petrel - *Procellaria conspicillata*; grey-headed albatross - *Thalassarche chrysostoma*; shy albatross - *Thalassarche cauta*; Northern giant petrel - *Macronectes halli*) were identified interacting with the Argentine red shrimp offshore fishery, following IUCN Redlist and National legislation. As it was observed (see Table 16), species did not interact directly with the fishing operations and mainly were observed near the fishing vessel. No observed and unobserved mortality was reported in the during 2022-2024. **Therefore, the SG60 and SG80 levels are met.**

The accurate and verifiable information of interactions with ETPs species is provided by private observed coverage under respective National Action Plan framework. There was not dead of any seabird reported during 2022 in the monitored vessels. Marinao & Yorio (2011) evaluated seabird attendance and incidental mortality at coastal trawl vessels targeting Argentine red shrimp (*Pleoticus muelleri*) in the Isla Escondida fishing area, Argentina, during 2006–2007 and 2007–2008 fishing periods. 8 seabird species attended vessels, and the most frequent and abundant ETP seabird (percent occurrence, mean number per haul) in the two seasons was the Black-browed albatross (*Thalassarche melanophris*). 11 Magellan

penguins (*Spheniscus magellanicus*) and one Imperial Shag (*Leucocarbo atriceps*) were killed in nets with a mean capture rate of 0.003 and 0.0003 birds per haul, respectively. The estimated total number of birds killed was 53 penguins and 5 shags considering the total number of hauls made by the fishery in the two seasons. No contacts between seabirds and warp cables were recorded. Coastal shrimp vessels generally operated between 15 and 20 km offshore, at a mean distance from the main Kelp Gull colony (Punta Tombo) of 43.9 km. At least 100 fish and invertebrate species were discarded, mostly Argentine hake (*Merluccius hubbsi*). Total amount discarded per season by this coastal fishery in the two seasons was estimated at 3,284 and 6,590 t, respectively. The coastal shrimp fishery in the Isla Escondida area appears to have a small impact on seabirds in terms of incidental mortality but provides significant amounts of supplementary food during the breeding season of the Kelp gull.

Gandini *et al.* (1999) analysed the effect of the shrimp fishery on Magellan penguins (*Spheniscus magellanicus*) in two ways: (1) determine whether penguins were incidentally killed and the magnitude of incidental take and estimate the overlap between penguin diet and fish bycatch of the shrimp fishery (total capture excluding shrimp and seabirds). The authors worked with the fishing fleet operating at Golfo San Jorge with onboard observers over 200 days in 1995-1997 period, sampling fishery bycatch and entangled birds. Penguins were affected during the austral summer. Estimations of mortality rates showed 0.33% of the breeding population at Golfo San Jorge is incidentally killed by the shrimp fishery every summer. Bycatch in shrimp fishery nets was composed of species important as penguin prey (anchovy and hake) in higher proportions during summer. The daily bycatch of these species was higher than the total calculated daily intake for all penguins breeding in the Golfo San Jorge. Similar results were obtained by Boersma & Redstock (2009). They showed that individuals forage in relatively coastal areas during most part of the breeding season and may be spatially overlapping with coastal trawlers operating in the Escondida Island fishing area north of this colony (Marinao & Yorio, 2011).

According to the IUCN Redlist website, the population trend of black-browed albatross is increasing, recording several mature individuals of 1.4 million. According to it was described by Copello *et al.* (2014), like other fisheries in the South Atlantic, the black-browed albatross (*Thalassarche melanophris*) is among the most common Procellariiform species in the bycatch in Argentina. This species is the most abundant of the southern hemisphere albatrosses with a current global population estimated at 600,000 breeding pairs, of which c. 70% breed in Malvinas Islands and chiefly forage in Argentinean, Uruguayan and Brazilian waters on the continental shelf. Although present along the Patagonian shelf throughout the year, black-browed albatross migrating northwards during the winter concentrate in two large marine areas, one from the mouth of Rio de la Plata towards the E-SE reaching the shelf break, and another at El Rincon estuary and waters to the South. The unsustainable levels of incidental mortality of this species in longline and trawl fisheries has caused steep population declines and the deterioration of its conservation status. However, increases recently reported for the population breeding in Malvinas, likely as a result of reduced seabird bycatch and favourable feeding conditions (Catry *et al.*, 2011; Wolfaardt, 2012; cited in Copello *et al.*, 2014) triggered the recent down listing of the species from Endangered to Near Threatened (BirdLife International, 2024).

In the case of imperial shag, Yorio *et al.* (2020) identified the population trends of this species in northern coastal Argentine Patagonia over 26 years (1990-2016). Many cormorant species are largely dependent on coastal marine environments, which are subject to increasing pressures from human activities. During 2016, the number of nests per colony ranged between 2 and 5,617. Total number of breeding pairs was estimated at 21,482. During the study period, two new locations were colonised, whilst another two were abandoned. Significant growth rates ranged from 1.022 to 1.117 for increasing colonies and from 0.580 to 0.977 for declining colonies, but the overall breeding population remained stable between 1990 and 2016.

Garcia Borboroglu *et al.* (2022) updated the information on the breeding distribution of Magellan penguin (*Spheniscus magellanicus*) and their abundance along 1,200 km of coastline along its northernmost Atlantic breeding range, allowing to assess population trends at the colony level and to compare the status of the overall population at the regional scale. A total population of 643,070 pairs was estimated at 30 colonies, most of which were located on islands (70%). Colony size was highly variable, from 3 to 204,416 breeding pairs. Results show a clear northward redistribution with new recent settlements expanding the breeding range by 1° latitude. The overall breeding population in this coastal sector increased by about 19.7% from the mid-1990s to the 2015–2017 period. Growth rates varied among coastal sectors, but most colonies in the northernmost area (Rio Negro and northern Chubut) had consistently high rates of increase, while colonies in central and southern Chubut declined or remained relatively stable.

Considering the population trends of ETP seabirds related with the fishing and no deaths were reported during monitored fishing seasons, the team concluded that the direct effects of the UoA are high degree of confidence that there are no

significant detrimental direct effects of the UoA on ETP species according to recently studies (Pedrana *et al.*, 2023). **Therefore, the SG100 level is met.**

ETP marine mammals

In the same line of seabirds, there are no limits set for the protection and rebuilding of marine mammals. Three species of marine mammals are considered ETP species, South American sea lion (*Otaria flavescens*), South American fur seal (*Arctocephalus australis*) and Commerson's dolphin (*Cephalorhynchus commersonii*). In Argentina, marine mammals are protected in national jurisdiction by the Resolution N° 351/1995 of Secretary of Natural Resources and Human Environment. The Article 1° prohibits any possibility of capture under any way of marine mammals.

As it was reported by POAB, only 2 sea lions died during 2022-2023 by fishing operations. Milano *et al.* (2020) conducted a study during 2012 to present estimates of the population abundance and then, analyse changes in social composition, distribution, population size and trend of this species at their sub-Antarctic distribution. Authors made an aerial survey of Fuegian Archipelago colonies and compared the results with historical compilation data registered since 1948. In total 49 colonies were surveyed (24 exclusive of South American sea lion, 15 shared with South American fur seals and 10 sites were abandoned). An abundance of 7684 individuals (including 440 pups) was recorded. There was an increase of population abundance, with a change of the social composition and distribution of some colonies through time. The average annual percentage of population changes yields a growth of 8.8%. This value completes the population growth trend data throughout Southwestern Atlantic for South American sea lion and shows that there is an increasing latitudinal gradient of these rates.

According to Crespo *et al.* (2015) updated information on distribution, abundance, seasonal movements, and genetic structure along the southwestern South Atlantic. The distribution of South American fur seal (*Arctocephalus australis*) in Argentine waters includes nineteen rookeries on the Patagonian coast, Los Estados Island, and islets of the Beagle Channel. Censuses were carried out in rookeries from Escondida Island to Los Estados Island from 1996 to 2014. The largest concentrations are found in Chubut, (4,500–15,500 seals) and Los Estados Island (4,500). Pups were recorded on Escondida Island, Rasa, and Los Estados Island. An increasing number of *A. australis* were recorded in northern Patagonia, including seals marked in Uruguay. Skin samples were taken from southern Brazil to Tierra del Fuego to evaluate population structure and demographic trends. Genetic results indicated no population subdivisions. Bayesian skyline plots constructed for the entire data set indicated evidence of rapid population expansion between the last 20,000 and 17,000 yr. Genetics results and observation data from marked fur seals support the hypothesis of ancient gene flow and a single Atlantic population.

Righi *et al.*, (2013) estimated the abundance and spatial distribution of the Commerson's dolphin (*Cephalorhynchus commersonii*) during spring and summer 2002-2004 and fall/winter 2003 were estimated in the estuary Ria Deseado, Patagonia, Argentina. Adult abundance was higher during spring (34 and 35 individuals in 2002 and 2003, respectively) and decreased during fall (7 individuals) and winter (16 individuals). Sightings of 132 adults during winter, spring, and summer (n= 12, n= 76, and n= 44, respectively) and 14 calves during spring and summer (n= 4 and n= 10, respectively) were recorded; mean school size was 2.0 +/- 1.2. Distribution and abundance varied seasonally. During spring, dolphins were more equally distributed through the estuary than during summer when calves and adults remained mainly inside the estuary. The presence of dolphins year-round suggested that the inhabitants are residents of the estuary. This study offers information on the ecology of the Commerson's dolphin and confirms Ria Deseado as a breeding site for this species.

Little is known about Commerson's dolphins' population and ecology. This species is listed as "Data Deficient" by the IUCN (2024). The main threat for cetaceans in Patagonia is incidental capture in fishing nets (Goodall *et al.*, 1988; Crespo *et al.*, 1997; Iñiguez *et al.*, 2003). Sources of entanglement are mid-water trawl nets (Crespo *et al.*, 1997) and gill nets (Iñiguez *et al.*, 2003). Even though no industrial or artisanal fishing occurs inside the estuary, based on the results of this study, this population is probably transiting through fishing areas during seasonal migrations (Righi *et al.*, 2013). **Therefore, the SG60 and SG80 levels are met.**

Considering the population trends of ETP marine mammal dead during monitored fishing seasons, the team concluded that there is a high degree of confidence that there are no significant detrimental direct effects of the UoA on ETP species and **the SG100 level is met.**

c	Indirect effects			
	Guide post		Indirect effects have been considered for the UoA and are thought to be highly likely to not create unacceptable impacts.	There is a high degree of confidence that there are no significant detrimental indirect effects of the UoA on ETP species.
	Met?		Yes for Chondrichthyes No for seabirds No for marine mammals	No for all ETP species
Rationale				

ETP Chondrichthyes

As it was reviewed in the P2 background, the management measures addressed to chondrichthyans include good practices to handling individuals and immediately return them to the sea, increasing its survival. The use of 'hooks' for this activity is forbidden. Even if the catch of spiny dogfish (*Squalus acanthias*) is very rare (*i.e.* less than 0.01% total catch) in the fishery under assessment. The spiny dogfish, *Squalus acanthias*, is a euribatic, eurytentic and cosmopolitan species. In the Argentine Sea, it consumes diversity of prey, characteristics of a generalist and opportunist feeder, but its principal food items are ctenophores, fishes and cephalopods. Diet overlap between sexes was found between 34° and 37° S and 101 and 150 m, where males principally feed on fishes, squid and polychaetes, sharing only ctenophores and hake consumption with the females. Near 62 cm TL there is a shift in the diet, due to an increment of Argentine hake (*Merluccius hubbsi*) and squid (*Illex argentinus*) predation and a diminution in ctenophores (*Pleurobrachia pileus*) eating. Feeding shows an increment from north to south, its mode on 42°-43°S. Argentine hake is an important prey between 34°-35° S and 100-150 m deep and southern to 42°S, less than 80 m deep. No feeding differences were found during daylight hours for *Squalus acanthias* is a continuous feeder (Garcia de la Rosa & Sanchez, 1997). Then, the shrimp fishery would not affect the food chain of this species. According to Ruibal Nuñez (2020) advanced embryos of *Squalus acanthias* were observed in the uteri of females in summer, autumn and late winter (January, May and early September). The presence of neonates was recorded from autumn to spring (April to September), months in which the coastal Patagonian shrimp fishery does not operate. **Therefore, the SG80 level is met.**

However, the fact that chondrichthyans species escape fishing gear or are released alive does not mean that they will not die in the short term due to the stress caused. Experimental studies are needed to support these decisions, since the stress and damage suffered during capture can cause death following release. Some chondrichthyan species have a moderate/high survival rate to bottom trawls, especially if they are short and at shallow depths. Studies evaluating the survival and mortality of this group of fish in the fisheries of the province of Chubut have not been addressed to date and it is necessary to advance in this area (Ruibal Nuñez, 2020). There is not a high degree of confidence that there are no significant detrimental indirect effects, **then the SG100 level is not met.**

ETP seabirds and ETP marine mammals

During the monitoring data collection, private observers identified that generally, individuals are near the fishing vessel: swimming or flying, perched on the ship or feeding but in the case of seabirds ETP species, some of them have direct contact dying or suffering damage during the fishing operation. Even studies conducted in relation of population trends, indicates that colonies remain stable or increasing, changes are reported in some colonies structure, but maybe addressed to human settlements or other intensive fisheries activities conducted in the area (Copello *et al.*, 2014; Crespo *et al.*, 2015; Milano *et al.*, 2020; Yorio *et al.*, 2020; Garcia Borboroglu *et al.*, 2022). However, there is no updated studies in the recent years to monitor nesting sites, nursery grounds or unobserved mortality. In both cases, there is no available information related with other indirect effects like changes in the trophic cascade, reduction in availability of prey species or foraging. **Therefore, the SG80 level is not achieved for these groups, and a condition must be raised.**

Overall Performance Indicator score	75
Condition number (if relevant)	2

PI 2.3.2 – ETP species management strategy

PI 2.3.2		The UoA has in place precautionary management strategies designed to: -meet national and international requirements; -ensure the UoA does not hinder recovery of ETP species. Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place (national and international requirements)			
	Guide post	There are measures in place that minimise the UoA-related mortality of ETP species, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a comprehensive strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to achieve above national and international requirements for the protection of ETP species.
	Met?	Yes for all ETP species	Yes for all ETP species	No for all ETP species
Rationale				

Following the MSC Fisheries Standard v2.01 - SA3.11.2, it is stated that the team shall evaluate either SI a) or SI b) on the ETP species management strategy: (SA3.11.2.1) *Where there are requirements for protection and rebuilding provided through national ETP legislation or international agreements, the team shall score scoring issue (a);* (SA3.11.2.2) *Where there are no requirements for protection and rebuilding provided through national ETP legislation or international agreements, the team shall score SI b).* National Action Plans for ETP species provide a strategy in place for managing effects on ETP species, which is designed to achieve national and international requirements (*i.e.* FAO) for their protection.

Since 2015, Argentina applied a strategy focuses to protect ETP species, according to several international agreements. The Federal Fishing Law N° 24,922 establishes that fishing operations in Argentine Sea will be subject to restrictions established by the CFP based on the conservation of resources, to avoid over-exploitation, prevent harmful effects on the environment and the unity of the ecological system.

Consequently, provincial on-board observers were instructed to implement actions and methodologies necessary for the adequate quantification of the incidental unwanted chondrichthyans and seabirds during the fishing tasks of the commercial fleet. Moreover, the POAB was improved in 2020 to increase the observers' identification capabilities and to require the observers to take data regarding both direct and indirect interactions, and not only of observed mortality.

ETP Chondrichthyes

The National Action Plan to reduce elasmobranch interactions with fisheries was approved in 2009, considering the guidelines of the Code of Conduct for Responsible Fisheries of FAO. This code describes the principles, legal framework, objectives and procedures of application for the conservation and management of chondrichthyans and voluntarily encourages all States members to apply them.

In 2013, the CFP established management measures to chondrichthyans through Resolutions N° 4/2013 and N° 7/2013. Then, in 2021, the CFP modified these measures through the CFP Resolution N° 8/2021

- Target fishing of chondrichthyans in Federal waters is forbidden (Art. 1°).
- A maximum landing limit for rays and sharks is established at 30% of total species caught by fishing trip. In case of landing of chondrichthyans, it must not exceed 50% of total catch volume by fishing trip (Art. 2°, 3° and 4°).
- In case to detect a fishing haul with a percentage that exceeds the limits established, the vessel must conduct 'move on' practice to another fishing area (Art. 5°).
- The 'shark finning' practice is forbidden (Art. 6°).
- It is mandatory to return alive all shark species, excepting *Galeorhinus galeus* and *Schroederychthys bivi* to increase its survival (Art. 7°).

- The use of 'hooks' or similar instruments for handling and/or release alive of individuals is forbidden (Art. 8°).
- The vessel must on-board observers and/or to monitor the performance of landings when it is required by the national management authority (Art. 10°).
- Night fishing is forbidden (Art. 11°).

Therefore, the SG60 and the SG80 levels are met.

However, there is no evidence if strategy is fully tested and analysed to determine that it is designed to achieve above national and international requirements for the protection of ETP CH species. **Therefore, the SG100 level is not met.**

ETP seabirds

Respecting to seabirds, the National Action Plan approved in 2010 to reduce the interaction of seabirds with fisheries in Argentina provides several alternatives of mitigation measures to reduce unwanted catch of seabirds that mainly interact with trawls and longlines fisheries. This action plan is based in mitigation actions proposed by national recommendations to reduce seabird interactions in the protection framework, and complying with international agreements as CTMFM, CCAMLR, CMS, CITES, CDB, UNCLOS, International Convention for the Prevention of Pollution from Ships – MARPOL (approved in 1992), Ramsar Wetlands Convention (1991), Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (1996). Also, the plan proposes to:

- collect reliable data by observers on fishing vessels or through other methods to determine the nature and extent of seabird interactions with fisheries;
- minimize injuries of bycatch of seabirds using technical advances and current fishing gears, considering economic implications of mitigation measures to be adopted;
- training OBOs and fishery staff. Raise awareness in fishing communities and public about conservation status of seabirds and threats looming over them; and,
- strengthen scientific research and its coordination with community.

Therefore, the SG60 and SG80 levels are met.

However, there is no evidence if the strategy is fully tested and analysed to determine that it is designed to achieve above national and international requirements for the protection of ETP seabird species. **Therefore, the SG100 level is not met.**

ETP marine mammals

Objectives for marine mammal protection are established in the National Action Plan for mammals (PAN-Mamíferos) and are described in the CFP Resolution N° 11/2015, related to reduce marine mammal interactions in Argentine fisheries.

The PAN-Mamíferos was the result of a participatory process in which the initiatives of public management bodies, scientific sector, academic sector and Non-Governmental Organizations, among others. The coordination is responsibility of MAYDS and Undersecretary of Fisheries and Aquaculture (SSPyA). In 2016, with the collaboration of the Cetus Foundation, a Guide was published containing general and specific information on the main species of mammals that can be sighted in the Argentine Sea.

This plan describes the specific objectives and actions regarding to:

- expand, deepen and update the diagnosis of operational interactions of marine mammals with fisheries.
- strengthen national and provincial POBs and field technicians to collect data on interaction and incidental catch of marine mammals
- develop mitigation measures and promote their implementation, prioritizing actions on the most vulnerable marine mammal species.
- promote the implementation of measures already tested in some fisheries and assess their effectiveness.

Then, there is a strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.

Therefore, the SG60 and the SG80 levels are met.

However, there is no evidence if strategy is fully tested and analysed to determine that it is designed to achieve above national and international requirements for the protection of ETP marine mammal species. **Therefore, the SG100 level is not met.**

b	Management strategy in place (alternative)			
	Guide post	There are measures in place that are expected to ensure the UoA does not hinder the recovery of ETP species.	There is a strategy in place that is expected to ensure the UoA does not hinder the recovery of ETP species.	There is a comprehensive strategy in place for managing ETP species, to ensure the UoA does not hinder the recovery of ETP species.
	Met?	Not scored	Not scored	Not scored
Rationale				

As it was mentioned in the rationale of SI a), the management strategy in place for this UoA are included in the fishery management measures based in the National Action Plans that include requirements for protection and rebuilding to ETP species in line with international agreements. **Therefore, this scoring issue is not scored.**

c	Management strategy evaluation			
	Guide post	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).	There is an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the species involved.	The strategy/comprehensive strategy is mainly based on information directly about the fishery and/or species involved, and a quantitative analysis supports high confidence that the strategy will work.
	Met?	CH: Yes SB: Yes MM: Yes	CH: Yes SB: Yes MM: No	CH: No SB: No MM: No
Rationale				

ETP Chondrichthyes

Mainly measures established by the CFP in Resolutions N° 4/2013, N° 7/2013 and N° 8/2021 are based in improved techniques for releasing bycatch alive and in good condition. For example, all RFMOs require ETP species to be released promptly, unharmed. Pregnant females and juveniles are often also priorities for live release, and current measures require that all sharks retrieved alive and not retained should be released unharmed. The most recent measures provide detailed instructions for release of sharks. Filmler *et al.* (2015; cited in Fowler, 2016) found that simple best practice could reduce direct mortality of sharks released from the deck by up to 20%. Speed of release is essential for sharks and rays that have been brought on deck from the net, if mortality is to be minimised. Mitigation measures established by Argentine authorities prohibit to use gaffs and hooks to handle sharks.

Pulifiato & Massa (2016) identified that individuals placed in the deck of the ship are generally returned alive to the sea, even if they are maintained 20-25 min out off. **Therefore, the SG60 and SG80 levels are met.**

However, there is no evidence based in a quantitative analysis for all management measures established in the Resolution N° 8/2021, including limit catch to support with a high confidence that the strategy is working in the fishery under assessment, **so the SG100 level is not met.**

ETP seabirds

Tamini *et al.* (2019) studied the seabird mortality associated with factory trawl vessels using both bottom and midwater trawls to target hoki (*Macrurus magellanicus*), Southern blue whiting (*Micromesistius australis*) and Patagonian toothfish (*Dissostichus eleginoides*) along the south tip of the Argentine Patagonian Shelf from 2012 to 2017. The study included 650 days, and 19,839 hauls monitored by instructors that recorded the interactions with seabirds and how the measures are functioning. The conclusion was the use of BSLs resulted in a significant decline in the number of collisions with both cables, with a combination of no discarding and BSLs use reducing interactions to zero. **Therefore, the SG60 level is met.**

Seco Pon *et al.* (2024) provide information for an update on the levels of seabird interaction and incidental mortality in commercial fisheries in Argentina, and also allows to define the status of this conservation problem one decade after the

adoption in 2010 of the Action Plan to Reduce Seabird Interaction with Fisheries (PAN AVES) in the Argentine Republic (CFP Resolution N° 15/2010) and to show the degree of implementation of the PAN AVES in general terms and in particular regarding the development of performance indicators for it, and the implementation of existing conservation measures (for example, CFP Resolutions N° 8/2008 and N° 3/2017) and others to be developed and implemented in the future. The main species affected by interaction with fishing vessels (*i.e.* confirmed incidental mortality) include seabirds such as albatrosses and petrels. In fact, black-browed albatross (*Thalassarche melanophris*) (79% of observed deaths), followed by black-headed shearwater (*Ardenna gravis*) (10%), Southern giant petrel (*Macronectes giganteus*) (4%), Cape petrel (*Daption capense*) (4%), Southern royal albatross (*D. epomophora*) (1%) and wandering albatross (*Diomedea exulans*) (0.3%) are the species mainly affected by fishing activities. However, it should also be noted that some species of coastal habits are captured in smaller numbers such as the Kelp gull (*Larus dominicanus*), the Magellan penguin (*Spheniscus magellanicus*) and cormorants belonging to the genus *Phalacrocorax*.

As it was reviewed in the PI 2.3.1, the Argentine red shrimp fishery does not generate unacceptable impacts on seabirds, because it does not induce the occurrence of interactions with the fishing gear and its possible associated physical damage. The fishery has in place handling protocols to return alive seabirds. According to the available information, in recent years (2022-2024), there is no mortality reported in the Argentine red shrimp fishery for seabirds. **Therefore, the SG80 level is met for this group.**

There is no evidence that a strategy/comprehensive strategy is mainly based on information directly about the fishery and/or species involved, and a quantitative analysis supports high confidence that the strategy will work. **Therefore, the SG100 is not met.**

ETP marine mammals

Sea lions that get caught in fishing nets die from drowning. For this reason, quick release protocols and/or not carrying out fishing operations when groups of mammals are sighted, allow reducing their incidental capture, and therefore, mortality rates. In some countries such as Chile, there are protocols for the reduction on incidental catch and handling of sea lions in the trawl fisheries (Res. Ex. N° 3120/2021). In Argentina, Resolution N° 351/1995 establishes in its Article 1° the prohibition of hunting, capture or appropriation and transit in national jurisdiction of all species of cetaceans and pinnipeds. Likewise, the authority instructs recovery establishments for those species that are damaged and cannot be released immediately. **Therefore, the SG60 level is met.**

Rodriguez *et al.* (2023) conducted a study using data obtained from 2014 to 2018, on the impact of various Argentine fisheries on marine mammals. During this period, a total of 452,710 fishing hauls were made in the shrimp fishery, and observations were made in 28,963 (6.4%). The main catch in this fishery was sea lions, with a lower incidence of dolphins and none of whales. Likewise, the largest releases occurred in sea lions, particularly the South American sea lion (*Otaria flavescens*) compared with South American fur seal (*Arctocephalus australis*). In comparative terms, the fishery that contributed the most to overall catches compared with the other fisheries studied, was the shrimp fishery (46.3%). For this reason, the authors indicate the need to implement mitigation measures to gradually reduce the number of animals captured. Likewise, articulate strategies and actions with the National Plan for Marine Mammals to reduce their interaction.

However, there is not an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the species involved. **Therefore, the SG80 level is not met, and a condition must be raised for this group.**

d	Management strategy implementation		
	Guide post	There is some evidence that the measures/strategy is being implemented successfully.	There is clear evidence that the strategy/comprehensive strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a) or (b).
	Met?	CH: No SB: Yes MM: No	CH: No SB: No MM: No
Rationale			

ETP Chondrichthyes

Management strategy for releasing bycatch alive in good condition are in place since 2013. There is no evidence related with the post-capture survival to show that the strategy (*i.e.* return alive individuals to the sea) is implemented successful. **Therefore, the SG80 level is not met, and a condition must be raised for this group.**

ETP seabirds

According to evidence provided in the background, the fishery does not injury ETP seabird population, being evidence that the fishing operations are a practice that there is not a risk to hindering their recovery, due the absence in the last year of directly mortality. **Therefore, the SG80 level is met for this group.**

ETP marine mammals

In the same way with ETP seabirds, information about interaction with marine mammals in the Argentine red shrimp offshore fishery was assessed during 2022. There is no evidence about releasing animals alive in good conditions before fishing practices. So, there are no measures/strategy being implemented yet. **Therefore, the SG80 level is not met, and a condition must be raised for this group.**

e	Review of alternative measures to minimise mortality of ETP species			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate.	There is a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality ETP species, and they are implemented, as appropriate.
	Met?	Yes for all ETP species	No for all ETP species	No for all ETP species
Rationale				

According to rationales provided for SI a) and c), all tasks conducted in the National Action Plan framework are reviewed by stakeholders and entities involved in actions in follow-up meetings. Summarize of progresses and new mitigation needed measure that must be implemented are publicly available in the Ministry of Economy and Federal Fisheries Council websites, respectively. **Therefore, the SG60 level is met.**

In the case of PAN related with chondrichthyans, the fourth follow-up meeting was conducted in October 2021 ([https://www.magyp.gob.ar/sitio/areas/pesca_maritima/plan/PAN-TIBURONES/_archivos/000002_Cuarto%20Taller%20de%20Seguimiento%20del%20Plan%20de%20Acci%C3%B3n%20Nacional%20para%20la%20Conservaci%C3%B3n%20y%20el%20Manejo%20de%20Condrictios%20\(Tiburones,%20rayas%20y%20quimeras\)%20en%20la%20Rep%C3%BAblica%20Argentina%20\(PAN%20Tiburones\).pdf](https://www.magyp.gob.ar/sitio/areas/pesca_maritima/plan/PAN-TIBURONES/_archivos/000002_Cuarto%20Taller%20de%20Seguimiento%20del%20Plan%20de%20Acci%C3%B3n%20Nacional%20para%20la%20Conservaci%C3%B3n%20y%20el%20Manejo%20de%20Condrictios%20(Tiburones,%20rayas%20y%20quimeras)%20en%20la%20Rep%C3%BAblica%20Argentina%20(PAN%20Tiburones).pdf)). Improvements of management measures established by the CFP to reduce unwanted catch of elasmobranchs was addressed in the same year through the Resolution N° 8/2021.

In the case of PAN-seabirds, the follow-up meeting was conducted in June 2019 (https://www.magyp.gob.ar/sitio/areas/pesca_maritima/plan/PAN-AVES/_archivos/200901_Informe%20del%20Taller%20PAN%20Aves%20-%2024%20y%2025%20de%20Junio%20de%202019%20.pdf). As result of this workshop, objectives and milestones of national action plan were re-addressed through the CFP Act N° 20/2020.

Finally, the second meeting to review the progress of action plan for marine mammals was conducted in August 2023. (https://www.magyp.gob.ar/sitio/areas/pesca_maritima/plan/PAN-MAMIFEROS/_archivos/191010_Taller%20de%20Seguimiento%20PAN%20mam%C3%ADferos%202023.pdf).

However, as it is mentioned in the SI d), the Argentine red shrimp offshore fishery has not implemented measures to minimise UoA-related mortality of ETP species. Only mitigation actions are related with the national action plans and its involved tasks, but not properly from the fishery under assessment as required alternative measure. **Therefore, the SG80 level is not met, and a condition must be raised.**

Overall Performance Indicator score	70
Condition number (if relevant)	3

PI 2.3.3 – ETP species information

PI 2.3.3		Relevant information is collected to support the management of UoA impacts on ETP species, including: -Information for the development of the management strategy; -Information to assess the effectiveness of the management strategy; and -Information to determine the outcome status of ETP species		
Scoring Issue		SG 60	SG 80	SG 100
a	Information adequacy for assessment of impacts			
	Guide post	Qualitative information is adequate to estimate the UoA related mortality on ETP species. OR If RBF is used to score PI 2.3.1 for the UoA: Qualitative information is adequate to estimate productivity and susceptibility attributes for ETP species.	Some quantitative information is adequate to assess the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species. OR If RBF is used to score PI 2.3.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for ETP species.	Quantitative information is available to assess with a high degree of certainty the magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status of ETP species.
	Met?	Yes	Yes	No
Rationale				

The main data are obtained by INIDEP OBO Program, dock samplings, INIDEP research surveys, fishing electronic records and NGO research experiences (*i.e.* Albatross Task Force). Results are available in NGO websites and technical scientific reports. As it is established in the CFP Resolution N° 22/2012, it is mandatory have an on-board observer in the red shrimp fishery to obtain relevant data of fishing operation, including interaction with ETP species.

Two INIDEP's reports were prepared as a contribution from the organizations involved in the implementation of the National Action Plan for seabirds and marine mammals. Both reports compile and analyse information on levels of interaction (including incidental mortality) of seabirds and marine mammals in the main fishing fleets of Argentina during the 2017-2021 period, in the case of seabirds; while, 2014-2018 period for marine mammals, from the joint effort of the Biological-Fisheries and Environmental Information Acquisition Program of the National Institute for Fisheries Research and Development (INIDEP) and the Vertebrates Group (Marine and Coastal Research Institute, National University of Mar del Plata-CONICET) (Seco Pon *et al.*, 2024 and Rodriguez *et al.*, 2023).

Moreover, the private monitoring program registered since 2022 fishing season, UoA-related mortality with ETP seabirds and marine mammals, while for Chondrichthyes this quantitative information was obtained since 2017. Also, this program analysed indirect effects of fishing activities with seabirds and marine mammals. **Therefore, the SG60 and SG80 levels are met**, but is not available quantitative information to assess with a high degree of certainty the magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status of ETP species. **Therefore, the SG100 level is not met.**

b	Information adequacy for management strategy			
	Guide post	Information is adequate to support measures to manage the impacts on ETP species.	Information is adequate to measure trends and support a strategy to manage impacts on ETP species.	Information is adequate to support a comprehensive strategy to manage impacts, minimise mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives.
	Met?	Yes	No	No
Rationale				

Information on the fishery's impacts on ETP species is available accurate and verifiable in specific studies (*i.e.* assessment of survival rate, ETP species recording sheets, etc). It is adequate to measures trends and support strategy to manage impacts on ETP species, and it is improved by new records derived from cameras and device trials. As stated above, this information is available by OBOs Program, experts and NGOs, and reported in technical reports and scientific papers.

Therefore, the SG60 level is met.

According to population trend evidence of ETP species directly affected by the UoA under assessment (*i.e.* animals that dead in fishing operation monitored) as South American fur seal (*Arctocephalus australis*) and South American sea lion (*Otaria flavescens*), the colonies or breeding population remain stables or show increase rates (see rationale provided in PI 2.3.1, SI a) and b)). Measures such as the collection of information by private and INIDEP's observers have been implemented within the framework of the National Action Plans (marine mammals, seabirds and chondrichthyans), as well as the release of specimens, when possible. However, as it is mentioned in the PI 2.3.2, SI d), the Argentine red shrimp has not implemented measures to minimise UoA-related mortality (direct and indirect) of ETP species. Only mitigation actions are related with the national action plans and its involved tasks, but not properly from the fishery under assessment as required alternative measure. Therefore, considering information is adequate to support measures to manage impacts on ETP species and not to support a strategy to manage impacts (direct and indirect) from the UoA on ETP species. **Therefore, the SG80 level is not met, and a condition must be raised.**

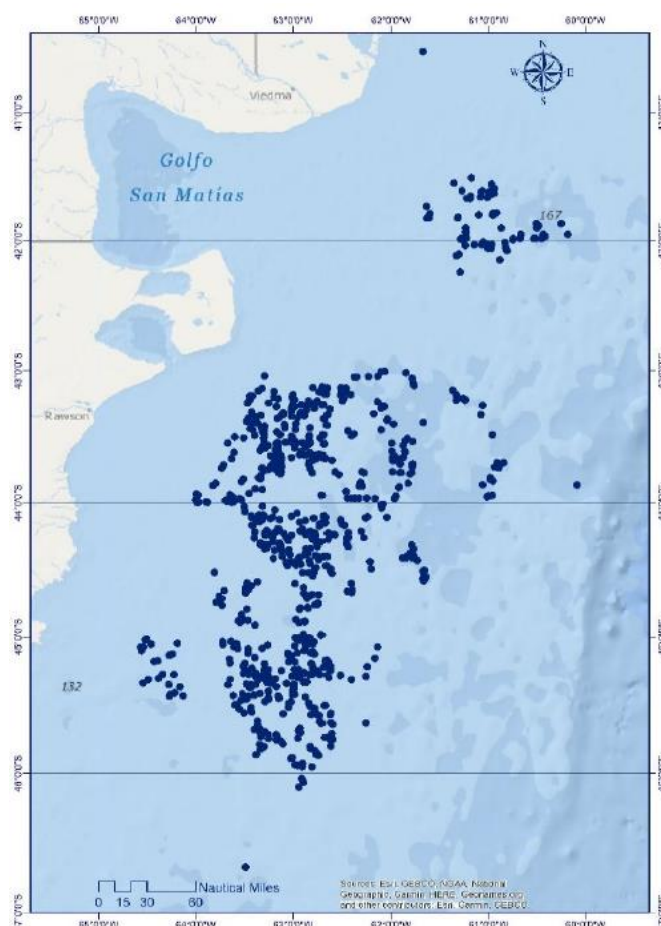
Overall Performance Indicator score	70
Condition number (if relevant)	4

PI 2.4.1 – Habitats outcome

PI 2.4.1		The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates		
Scoring Issue		SG 60	SG 80	SG 100
a	Commonly encountered habitat status			
	Guide post	The UoA is unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	The UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	There is evidence that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.
	Met?	Yes	No	No
Rationale				

Considering the available information (see background) on the type of substrate, geomorphology and biota of the fishery area and the habitat that regularly encounters the gear used by the UoA and the spatial (geographical) overlap of fishing effort with the habitat's range within the management area(s) covered by the governance body relevant to the UoA, only impacted habitat is "commonly encountered habitat" (GSA3.13.3.1). During the Fishery Announcement, OIA decided to score this PI using RBF methodology. However, the available information suggests that this PI could be scored using the Default Assessment Tree.

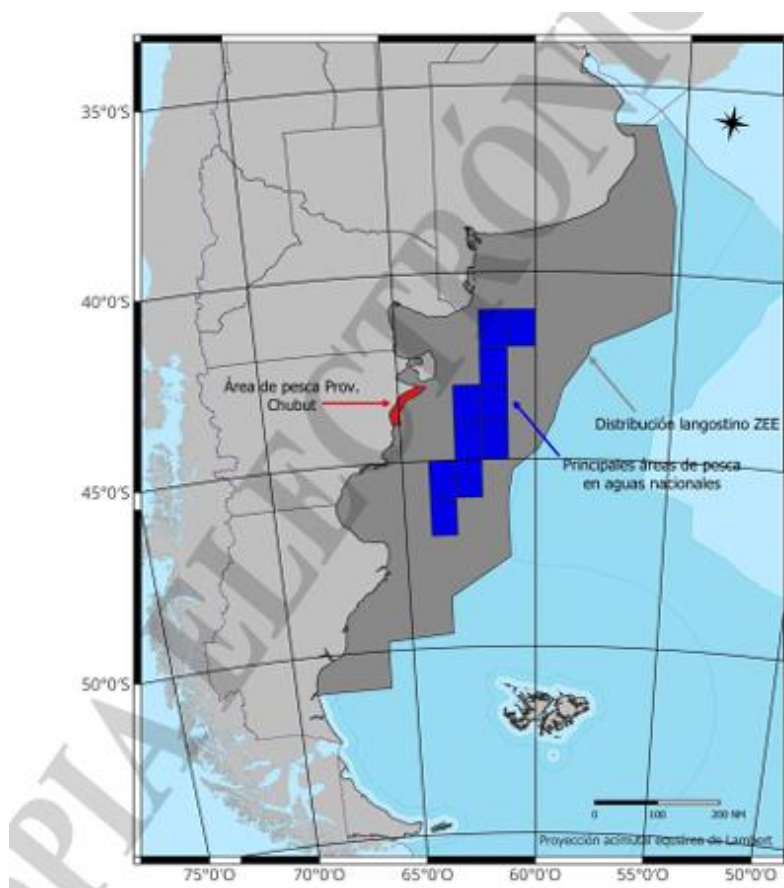
CEDEPESCA (2023) gathered quantitative information to know the impact of Argentine red shrimp fishery under assessment on the habitat, based mainly on data collected by Private Observer Program. The following figure shows the fishing hauls observed by POAB during 2018-2019 and 2022-2024 fishing seasons (Palacios, 2024).



In addition, De La Garza (2025) analysed and mapped the spatial distribution of the areas where more than 2% of shrimp catches have been recorded from 2019 to 2024.

Latitude (South)	Longitude (West)	Tonnes	% Total
46°30'	63°30'	30,790.406	2.60
45°30'	63°30'	57,719.270	4.88
45°30'	62°30'	46,655.165	3.95
44°30'	62°30'	87,926.693	7.44
44°30'	61°30'	71,216.899	6.03
43°30'	65°30'	141,928.613	12.01
43°30'	64°30'	276,337.843	23.38
43°30'	62°30'	133,030.448	11.25
43°30'	61°30'	70,027.620	5.92
42°30'	61°30'	57,392.364	4.86
41°30'	61°30'	59,015.227	4.99
41°30'	60°30'	86,851.576	7.35

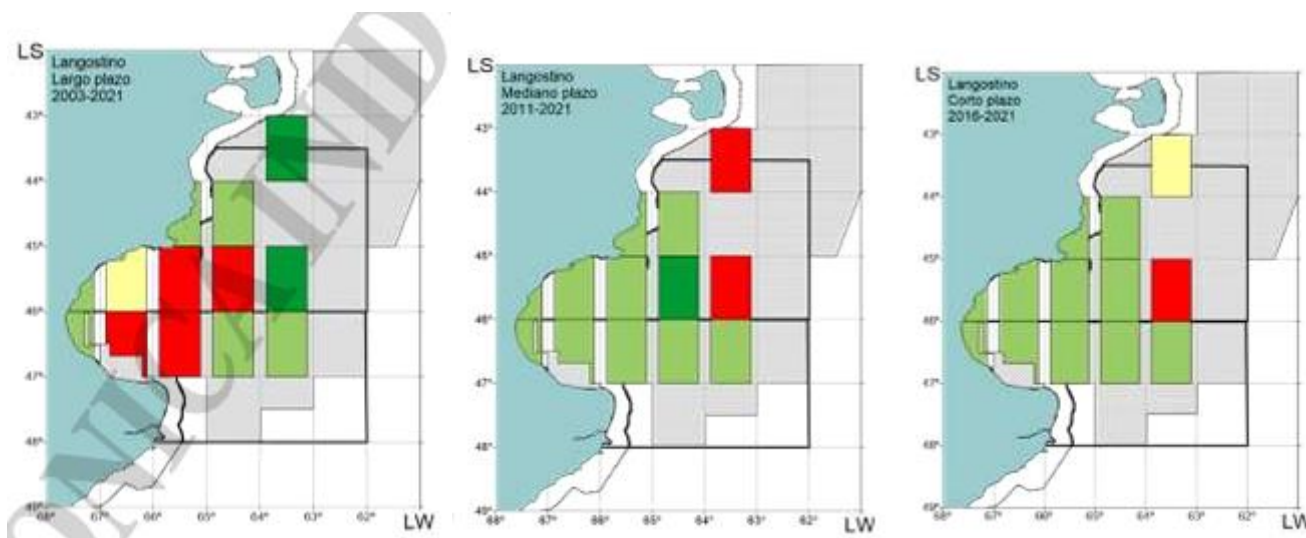
The following Figure shows the main fishing areas for shrimp (*Pleoticus muelleri*) during 2019-2024 period. The fishing area within the Province of Chubut, represented in red, covers 3,624 km². The blue quadrants correspond to areas under national jurisdiction, with a total area of 88,988 km². Considering that the total spatial distribution of shrimp in the Exclusive Economic Zone (EEZ) is 660,466 km², it is observed that almost 95% of the catches come from just 14% of the area where the species is distributed (De La Garza, 2025).



Alemaný *et al.* (2015) analysed a total of 1,706,910 trawling fishing hauls based on satellite monitoring data, obtained during 2006 and 2012. The study area covered the Argentine Exclusive Economic Zone (AEEZ) (35°-55° S, 52°-68° W; 1,100,000 km²), where results show that trawling hotspots are relatively small. The study shows that the area impacted by all the trawling fishery represents less than 7% of the AEEZ's extent. Thus, these findings suggest that over the shelf the magnitude of habitat effects owing to bottom trawling is relatively small.

According Gaitan & Alemany (2024), the distribution of fishing effort by the different fleets operating with bottom trawls presents an irregular pattern, with large sectors with little or no effort and some areas with high effort, although the latter represent less than 5% of the total area of the AEEZ (Alemany *et al.*, 2016). Accordingly, benthic species with broad distribution ranges, such as those recorded as companion fauna of the common hake (*Merluccius hubbsi*) (Gaitan & Souto, 2017), would overlap spatially with bottom trawls only in specific and/or restricted locations within their vast areas of occurrence. In this way, the impact or effect of this disturbance on these species would be minimized. **Then, the SG60 level is met.**

Mauna *et al.* (2024) made comparisons on the spatial distribution of the fishing effort made by the Southern king crab, Southern hake and Argentine red shrimp fisheries, establishing for this a quantitative scale of 1 to 5. For the shrimp fleet, the pattern of potential impact due to fishing disturbance presents notable variations in the different spatial scales considered. The highest values were presented in the San Jorge Gulf and a sector of the northern federal waters (accumulated disturbance in 18 years), this pattern changes in the medium term (accumulated disturbance in 10 years), with only the northern federal waters presenting two sectors with the greatest potential impact, maintaining this pattern in the short term (accumulated disturbance in 5 years). The following figures show the changes in short, medium and long-term for shrimp fishery.



The decrease in fishing effort in the Central Patagonian Area by the shrimp fleet would be due to the reproductive ban in the San Jorge Gulf and secondly, by a change in the distribution of the fleet due to the expansion of the shrimp resource towards areas far from the coast in an east-northeast direction (Fischbach & Bertuche, 2017; Moriondo Danovaro & De la Garza, 2019; Mauna *et al.*, 2024).

Respect to the biota, according Souto & Gaitan (2017), the seabed where common hake is primarily distributed (34° - 47° S), the one that coincides with the area in which the shrimp fishery is carried out in national waters, present several of the VME indicator groups, which showed a wide distribution and high richness in some sectors. This study indicates that this area is still almost completely free of bottom trawling (north of 44° S and east of 62° S). Given the ban on bottom trawling, the absence of the trawling fleet, and the lack of other disturbances, it could act as a control area for comparison with other areas subject to bottom trawling.

Gaitan & Souto (2018) studied the composition and structure of the macroinvertebrate community present in the area (44° - 47° S) in 2018, giving temporal continuity to previous studies (Gaitan *et al.*, 2013, 2014; Souto & Gaitan, 2017). The results indicate that the trends in richness, diversity indices and relative abundance are maintained, with small differences. Likewise, the main invertebrate phyla are maintained: Arthropoda (Crustacea), Echinodermata and Mollusca.

Gaitan (2021), based on sampling carried out in the summer of 2021, compares with the previous year's (2017 and 2018) by Gaitan & Souto (2018), points out that the number of taxa recorded, as well as the average amount per fishing hauls, show similarities in the three years. The phyla most represented in number of species and in the adjacent sector of the external platform and slope also coincide, according to what was observed by Gaitan *et al.* (2014) and Souto & Gaitan (2017). Species associations maintained the spatial distribution pattern and their discriminant components as in previous years, so no significant changes were observed in the benthic community.

Gaitan & Alemany (2024) determined the most ecologically relevant benthic invertebrate species between 34° S and 55° S, characterize their main biological traits, define them by sector, and analyse their spatial overlap with bottom trawl distribution. To this end, 708 bottom trawl fishing hauls from eight INIDEP research campaigns between 2013 and 2022 were analysed, covering the Buenos Aires Coastal Ecosystem (BCE), the Northern Shelf (ZCPAU), the Patagonian Shelf (PP), and the Southern Shelf (SA). A total of 275 benthic invertebrate taxa were recorded as part of the by-product fauna, of which only 34 taxa dominated in terms of the relative importance index (RII > 1%). From these, 26 functional groups were identified, reflecting high functional diversity among the main benthic taxa in the area. The four sectors analysed were characterized by benthic communities with a marked and/or relatively stable structure. In general, the dominant organisms were characterized by specific biological traits, such as globose or oval morphology, medium/large body size, long lifespan, filter-feeding mode, sessile living position, zero mobility, and the ability to multiply the substrate. The overlap in the distribution and abundance of the main species with fishing trawling showed different patterns depending on each taxon.

They identified eleven taxa as dominant (IIR > 1%), in at least two analysed sectors. These include commercially exploited species such as the Southern king crab (*Lithodes santolla*), Patagonian scallop (*Zygochlamys patagonica*), and the shrimp (*Pleoticus muelleri*). Four of them (basket star - *Gorgonocephalus chilensis*, ascidian - *Paramolgula gregaria*, sponges

(*Tedania* sp.), and tunicates Polyclinidae) showed dominant presence in three sectors: Southern shelf (PA); Argentine Uruguayan Common Fishing Zone (ZCPAU); and, Patagonian shelf (PP), being the shrimp distribution. Focusing exclusively on presence data (even without reaching an IIR > 1%), it was observed that 10 of these taxa (except for *P. muelleri*, whose distribution was more limited) expanded their distribution to an additional sector. That is, these 10 taxa were present in at least three of the sectors analysed, highlighting their wide distribution, with a latitudinal range spanning from 34° - 36° S to 54° - 55° S. Density of the dominant species is shown in the Figure 38, background. Although 275 benthic invertebrate taxa were recorded as bycatch in the eight analysed campaigns, only 34 taxa achieved a Relative Importance Index (RII) value above 1% in any of them. This suggests that, although the number of epibenthic invertebrate taxa retained in fishing nets is high, only a small group of species dominates in terms of relative importance in catches. Furthermore, the strong dominance of certain organisms in three of the analysed regions (ECB, PP, and PA), where one or a few species contribute significantly to the total biomass, suggests that these areas possess benthic communities with a distinct and/or relatively stable structure.

In the case of *Tedania* sp., this genus displayed a wide latitudinal range, with presence from 36° to 54° S. Recently, the northern limit of its distribution (coinciding with the border of the Magallanes Province) was validated by Schejter *et al.* (2024). Unlike *P. gregaria*, these sponges are also distributed in some sectors with high fishing intensity, although their highest occurrence frequency and highest densities occurred in the AVPJM. It is important to note that within the AVPJM, there is fishing effort by trawlers fishing for shrimp (*Pleoticus muelleri*) with trawl nets, which was not considered in this study. In recent years, this fleet has operated primarily east of 64° W (De la Garza, 2024), coinciding with the area where *P. gregaria* and *Tedania* sp. have been most frequently found. This spatial overlap, although initially not appearing to affect the distribution and abundance of these species, requires more detailed study to determine its true impact (Gaitan & Alemany, 2024). This study concluded that considering the study area is dominated by relatively vulnerable species, due to their sessile, long-lived, and community-forming nature, this might be expected to lead to ecosystems that are more sensitive to disturbances. However, this would be offset by the wide distribution of these same species, which generally extend across large areas of the Magallanes Province. It also points out that, given the broad spatial scale covered, the patterns described are general, so it would be extremely important to conduct more focused sampling in areas with high bottom trawling intensity to deeper the knowledge into the relationship between fishing and the benthic communities found in these areas. It is also necessary to delve into other biological traits that would allow for a more detailed characterization of the communities. **Therefore, applying a precautionary approach, the SG80 level is not met and a condition must be raised.**

b	VME habitat status			
	Guide post	The UoA is unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	The UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	There is evidence that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.
	Met?	Not scored	Not scored	Not scored
Rationale				

The MSC Fisheries Standard v2.01 - GSA3.13.3.2 states that VMEs have one or more of the following characteristics, as defined in paragraph 42 of the FAO Guidelines:

- Uniqueness or rarity – an area or ecosystem that is unique or that contains rare species whose loss could not be compensated for by similar areas or ecosystems
- Functional significance of the habitat – discrete areas or habitats that are necessary for survival, function, spawning/reproduction, or recovery of fish stocks; for particular life-history stages (e.g., nursery grounds, rearing areas); or for ETP species
- Fragility – an ecosystem that is highly susceptible to degradation by anthropogenic activities
- Life-history traits of component species that make recovery difficult – ecosystems that are characterised by populations or assemblages of species that are slow growing, are slow maturing, have low or unpredictable recruitment, and/or are long lived

-Structural complexity – an ecosystem that is characterised by complex physical structures created by significant concentrations of biotic and abiotic features

The FAO Guidelines' Annex identifies the following species groups, communities, and habitat-forming species that may form VMEs and may be indicative of the occurrence of VMEs:

-Certain cold-water corals and hydroids (e.g., reef builders and coral forest, such as stony corals, alcyonaceans, gorgonians, black corals, and hydrocorals)

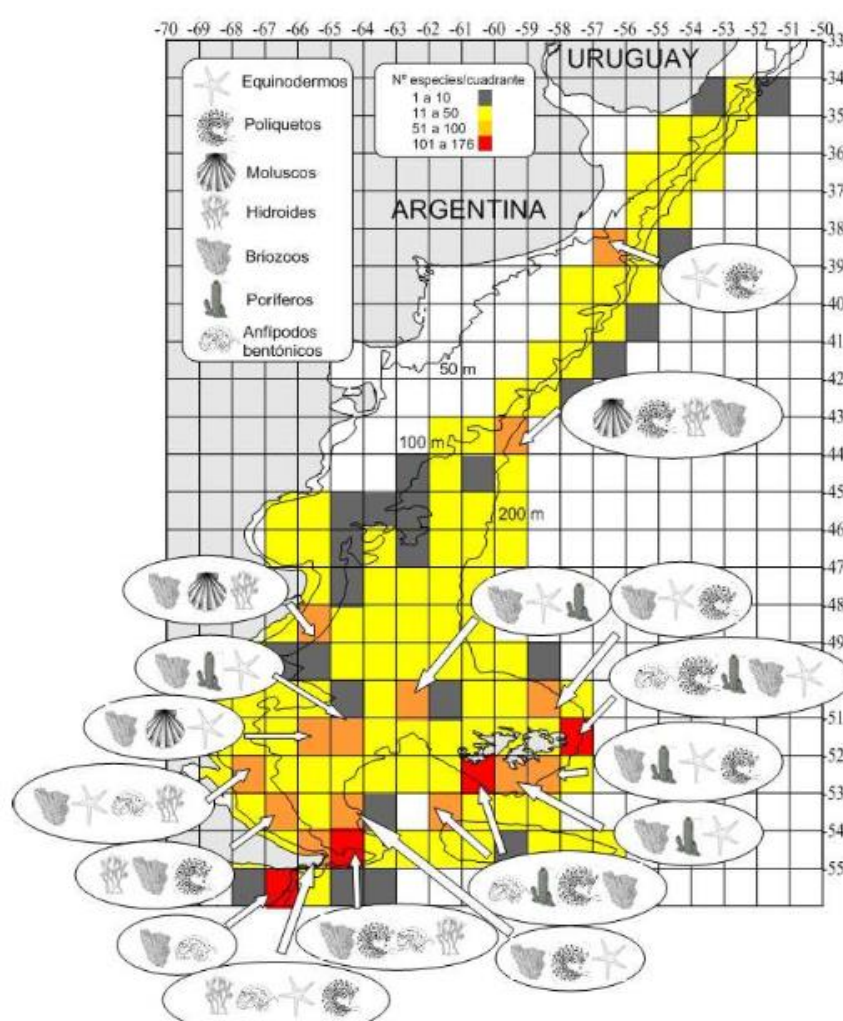
-Some types of sponge-dominated communities

-Communities composed of dense emergent fauna where large sessile protozoans and invertebrates (e.g., hydroids and bryozoans) form an important structural component of habitat

-Seep and vent communities comprised of invertebrate and microbial species found nowhere else (i.e., endemic)

Gaitan *et al.* (2014) elaborated a map that presents main groups of benthic invertebrates associated to the Argentine hoki fishery (*Macruronus magellanicus*) between 34° and 56° S to detect Vulnerable Marine Ecosystem in the fishing area (see below). The invertebrate groups analysed have a level of sensitivity to fishing impacts (i.e. bottom trawl), and due to their ecological role, acquire special relevance. Porifera, bryozoans, hydroids, brachiopods, and echinoderms are considered Indicator Taxes (IT) of Vulnerable Marine Ecosystems (VMEs).

Although the coverage is uneven, in general a greater number of species was evidenced towards the southern sector, mainly above 50° S around the Malvinas Islands (on the 200 m isobaths) and towards the east of Tierra del Fuego (in shallower waters). Among the most abundant species, bryozoans, benthic amphipods, and polychaetes were recorded, followed by porifera, hydroids, echinoderms, molluscs, decapod crustaceans and brachiopods.



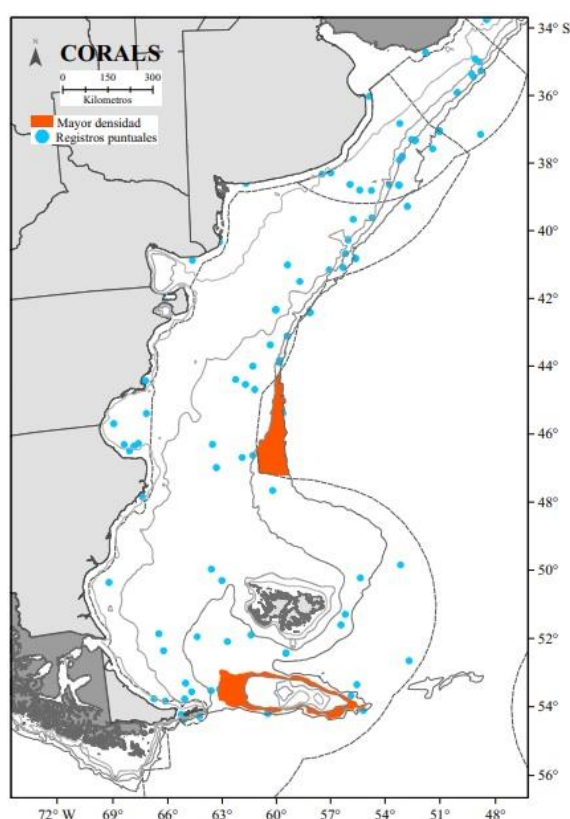
Total number of species per quadrant throughout the analysed area. The composition by representative groups is shown in those quadrants with a total number of species > 50 (Source: Gaitan *et al.*, 2014)

In general, the invertebrate groups classified as IT showed a wide distribution and high richness in some sectors, being important contributors to the benthic community. Likewise, these groups together with other ITs not included in the report by Gaitan *et al.* (2014) (such as, corals - Scleractinia, Gorgonacea and Alcyonacea) were detected at high densities in areas adjacent to the edge of the platform between 41° and 48° S.

According Gaitan (2021), the middle Shelf associated with the 100-meter isobath is dominated by benthic organisms that structure communities, which present an important associated fauna, many of which fall into the category of EMV indicators.

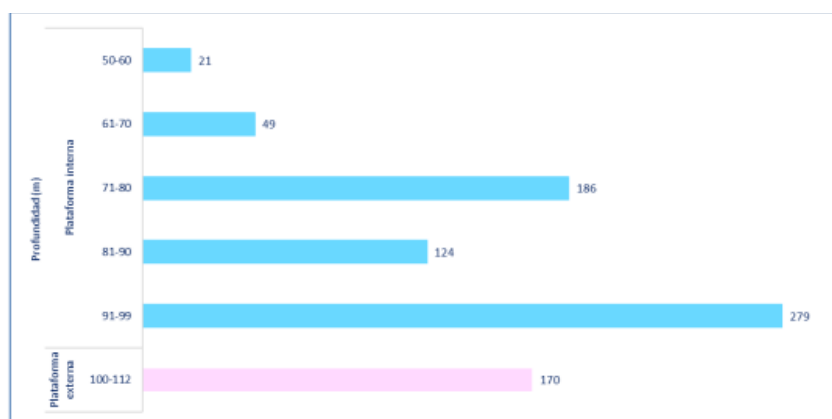
Cañete & Tamini (2021) characterized the existence of Vulnerable Marine Ecosystems (EMV) in the Argentine Sea. Among the VME, the communities known as “animal forests” stand out, and are made up of assemblages of true corals, soft corals and false corals. These species are distributed from depths of 120 m and are more abundant towards the slope.

Allega *et al.* (2020) describe the distribution of the coral-water communities which are typical structuring species allowing refuge and habitat and nurseries zone for several species of both invertebrates and fishes. The true coral *Bathelia candida* is one of the reef-building species and is present between 400 – 1000 m deep in places with strong cold currents.



Geographic distribution of coral species. Orange areas are high densities, and blue point represents occasional records

The depth of the fishing hauls made by the UoA during 2018-2019 and 2022-2024 fishing seasons is shown in the following graph (Palacios, 2024):



Considering Allega *et al.* (2020), Gaitan *et al.* (2014) and Cañete & Tamini (2021) information, and considering that “The CAB shall consider those VMEs and potential VMEs (as defined by the FAO Guidelines; see GSA3.13.3.2) that have been accepted, defined or identified as such by a local, regional, national, or international management authority/governance body”.

The fishing zone would not constitute a VME, according to studies conducted by Gaitan *et al.* (2013, 2014), Gaitan and Alemany (2024), regarding the presence of Indicator Taxes (IT) organisms of Vulnerable Marine Ecosystems (VMEs), and that of Allega *et al.* (2020) and Cañete & Tamini (2021) regarding the distribution of corals in the Argentine Sea. Then in this area, there are not VME or potential VMEs (as defined by the FAO Guidelines; see GSA3.13.3.2), that have been accepted, defined or identified as such by a local, regional, national, or international management authority/governance body. **So, this scoring issue is not scored.**

c	Minor habitat status			There is evidence that the UoA is highly unlikely to reduce structure and function of the minor habitats to a point where there would be serious or irreversible harm.
	Guide post			
	Met?			Not scored
Rationale				

There are no specific studies related to minor habitat. There is no information regarding the existence of habitats other than those indicated in the scoring issues a) and b). However, according to the MSC Interpretation, ‘The teams should list which main or minor components are assessed in each component to make clear what is being scored as main vs minor’. The team focused the use of RBF only on main habitats identified.

Overall Performance Indicator score	60
Condition number (if relevant)	5

PI 2.4.2 – Habitats management strategy

PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a strategy in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.
	Met?	Yes	Yes	No
Rationale				

There are several areas closed for trawl fishing which act as de facto protection of the benthic habitat and the whole ecosystem, as they are enforced using the vessel monitoring system. Fishery management relies on research campaigns that are conducted twice a year by the INIDEP. In addition, real-time monitoring in waters under federal jurisdiction is provided by INIDEP’s On-board Observers Program, which allows for the dynamic opening and closure of the different fishing areas in which the Argentine Sea is divided for statistical and management purposes. The main harvest strategy is set by the Federal Fisheries Council that controls fishing in waters under federal jurisdiction. Currently, fishery management measures at the federal level are to be found in CFP Resolution N° 7/2018, modified by means of the CFP Resolution N° 9/2022. Some measures are:

- Permanent prohibition for any kind of vessel, for trawling fishery in a Patagonian area (SAGPyA Resolution N° 447/1997). Associated with the previous area it was created an additional area for the protection of hake juveniles (CFP Act N° 26/2000). This has permanent and no permanent places in the closed area, covering approximately 200,000 km² (CFP data);

-Areas for the protection of Patagonian toothfish juveniles (CFP Act N° 17/2002 of October 10, 2002); Areas closed for all trawling fisheries (Federal Fisheries Law N° 23,968);

-Closed areas for the protection of cold-water corals at the Burdwood Bank (CFP Act N° 18/2008, the area is delimited by 54°30' S and 60°30' W, 54°30' S and 59°30' W, 54°15' S and 60°30' W, 54°15' S and 59°30' W).

-San Jorge Gulf is closed to fishing operations since 2017 to keep shrimp breeding and reproduction of several species that are present in the Restricted Fishing Effort Zone.

-Federal Fishery Council opens and closes fishing areas relying on advice provided by INIDEP regarding catch length, proportion of impregnated females and the incidental catch of Argentine hake (*Merluccius hubbsi*). The CFP Resolution N° 9/2022 amends Article 17° of Annex I in the CFP Resolution N° 7/2018, the Federal Fisheries Council formalized a harvest control rule for the fishery under federal jurisdiction. Article 17° now explicitly states that fishing areas will be dynamically opened and closed, and that fishing areas will be closed when, according to information provided by INIDEP.

More specifically the CFP Resolutions N° 7/2018 and N° 9/2022 state several measures on the target species and accompanying fauna specially hake (*Merluccius hubbsi*) to protect directly both species and indirectly habitat. The Article 17° establishes that the shrimp (*Pleoticus muelleri*) fishery will be carried out through a dynamic system of opening and closing areas and/or subareas. The area and/or subarea will be closed when, based on information provided by INIDEP, a high presence of females in the reproductive or laying stage is verified, the Catch per Unit of Effort (CPUE) is analysed, and, specifically, the following is observed: a) a ratio of common hake (*Merluccius hubbsi*) to shrimp (*Pleoticus muelleri*) greater than 20% and/or b) a presence of L4 size categories or smaller of shrimp (*Pleoticus muelleri*) in a percentage equal to or greater than 20% during 4 consecutive fishing. Also, the Article 18° mentioned that bottom trawling operations shall be prohibited from 1 October to 30 November each year in the area east of the Interjurisdictional Area of Restricted Effort (AIER) between parallels 43° and 45° S and meridian 63°30' W to protect the reproduction of hake. The Article 22° determines that ice chilling and freezer vessels must have an inspector or on-board observer from the INIDEP.

The partial strategy including spatial restrictions and a limit on fishing effort. Given the known characteristics of the fishery and the habitats found, together with the evidence provided annually through data collected by on-board observers, there is a basis for confidence that the partial strategy will succeed in protecting the habitat from serious or irreversible damage. **Therefore, the SG60 and SG80 levels are met.**

However, there is not a strategy in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats. **Therefore, the SG100 level is not met.**

Management strategy evaluation				
b	Guide post	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/habitats).	There is some objective basis for confidence that the measures/partial strategy will work, based on information directly about the UoA and/or habitats involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or habitats involved.
	Met?	Yes	Yes	No
Rationale				

According to the CFP Resolution N° 7/2018, ice chilling and freezer vessels must have an inspector or observer on-board from the National Institute of Fisheries Research and Development (INIDEP). Other measures or partial strategy are based mainly in the protection of ecologically sensitive areas. These areas are closed to trawling, and the fleet is enforced to use Vessel Monitoring System which is supervised by *Prefectura Naval Argentina* (Naval Authority) and SAGPYA. **Therefore, the SG60 level is met.**

On the other hand, marine fronts influence the organism's distribution and are a physical feature that affects the dynamics of trawling activities (Alemany *et al.*, 2016). Thus, the trawling hotspots represent relatively small areas of similar geographical scale as fronts, that cover an area lesser than 15% of the Patagonian shelf extension (Rivas, 2006).

Thus, protection of ecologically sensitive areas is combined with the preference of the trawl fleet to operate in reduced but highly productive areas, reducing the impact on the benthic habitat.

In general, bycatch of invertebrate species in recent years is less than 1% of the total catch (see Table 14, background).

Then, there is some objective basis for confidence that the measures/partial strategy will work, based on information directly about the UoA and/or habitats involved then, **the SG80 level is met**. There is no testing that supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or habitats involved. **Therefore, the SG100 level is not met**.

c	Management strategy implementation		
	Guide post	There is some quantitative evidence that the measures/partial strategy is being implemented successfully.	There is clear quantitative evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective, as outlined in scoring issue (a).
	Met?	Yes	No
Rationale			

Monitoring of incidental catch has been performed since 2004, when the INIDEP included the by-catch species in the regular records taken by on-board observers. They coordinate their shipment in the coastal fleet to obtain reliable and continuous information (CFP Resolution N° 4/2013). INIDEP instructed at OBO Program (now Acquisition of Biological, Fishing and Environmental Information Program) to carry out actions and methodologies required for proper quantification of bycatch species and implement them during fishing tasks. The CFP requested at SAYDS to sign agreements with research institutions to ensure the analysis data obtained by OBOs (CFP Resolution N° 6/2009).

Likewise, Private Observer Program, provides quantitative information about bycatch species.

The benthic habitat preserved in the un-fished reserved areas, like San Jorge Gulf, would provide a source of recruits for several species of the demersal and benthic habitat, studied frequently by INIDEP.

Then, there is some quantitative evidence that the measures/partial strategy is being implemented successfully. **Therefore, the SG80 level is met**. There is no clear quantitative evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective, as outlined in scoring issue (a) and **the SG100 level is not met**.

d	Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs		
	Guide post	There is qualitative evidence that the UoA complies with its management requirements to protect VMEs.	There is some quantitative evidence that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
	Met?	Yes	No
Rationale			

The Law N° 24,922 established the Federal Fisheries Regime, in accordance with provisions of the Article 17°, fishing activity in all maritime areas under national jurisdiction will be subject to restrictions established by the CFP to avoid excess exploitation and prevent harmful effects on the environment and ecological system. Shrimp fishery and other fisheries, like hake must have an on-board inspector or an observer from INIDEP. The Enforcement Authority may order the boarding of provincial observers, in accordance with the respective provincial authority. Information that is available and used by INIDEP to conduct studies on bottom communities in fishing areas. Likewise, in the case of inspectors, they must ensure that mitigation measures are followed or, failing that, sanction vessels that do not comply. The Law N° 27,037 regulates the National System of Marine Protected Areas and its main objective is to establish restrictions to protect ecosystem, communities or biological or geological elements of the marine environment, including subsoil, seabeds and associated marine columns. Undersecretary of Fisheries and Aquaculture (SSPyA), as Enforcement Authority, has implemented the fishing activities control system ('SICAP') which is integrated by: a) the Satellite Positioning System of the National Fishing Fleet (established by SSPyA Decree N° 2/2003) establishes that all fishing vessels must have their satellite monitoring equipment on-board, in perfect working order. The system must report the position of the ship every hour and b) the control and surveillance activity carried by Argentine Coast Guard (PNA), which have surface units (coastguards) and air units (airplanes and helicopters) which allows to control that the areas closed to fishing are respected through patrols and overflights. This information is complemented with download controls, documentary

information provided by vessels and observers and satellite information, discharge and electronic fishing parts. In the current management framework for all fisheries, CFP regulates access to all resources throughout the year and, along with other measures, prevent the fleet from concentrating in the same fishing areas at the same time, responding to a precautionary approach applied to the fishing grounds and impacting the entire fishery ecosystem.

There is some quantitative evidence that the UoA complies with both its management requirements and protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant in Argentina, management fishery is integrated for all fisheries, including close/protection areas that could be restricted for some specific fishery. Statements are established by management authorities, CFP and CTMFM, and published in their websites. Monitoring control is applied by vessel monitoring system (VMS) using GPS. If a vessel enters in a close area using bottom trawl nets, the management authority requests its return to port and applies respective sanctions. **Therefore, the SG60 and SG80 levels are met.**

However, there is not clear quantitative evidence that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant. **So, the SG100 level is not met.**

Overall Performance Indicator score	80
Condition number (if relevant)	N/A

PI 2.4.3 – Habitats information

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat		
Scoring Issue		SG 60	SG 80	SG 100
a	Information quality			
		The types and distribution of the main habitats are broadly understood .	The nature, distribution and vulnerability of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA.	The distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats.
	Guide post	OR If CSA is used to score PI 2.4.1 for the UoA: Qualitative information is adequate to estimate the types and distribution of the main habitats.	OR If CSA is used to score PI 2.4.1 for the UoA: Some quantitative information is available and is adequate to estimate the types and distribution of the main habitats.	
Met?		Yes	Yes	Yes
Rationale				

The main habitats found in the UoA area is “commonly encountered habitats” (See PI 2.4.1 SI a) and b)). De la Garza (2024) summarized the shrimp fishing statistics for the 2023 season and the geographical origin of the landings, based on data from the fishing reports of the SSPyA, which was validated with the satellite monitoring reports, the SIOP of INIDEP and the Global Fishing Watch website (<https://globalfishingwatch.org>). This source of information allows to visualize the operating area of the fleet in assessment in the general context.

The monitoring of incidental catch has been performed since 2004, when the INIDEP included the bycatch species in the regular records taken by on-board observers. They coordinate their shipment in the coastal fleet to obtain reliable and continuous information (CFP Resolution N° 4/2013). INIDEP instructed at OBO Program (now Acquisition of Biological, Fishing and Environmental Information Program) to carry out actions and methodologies required for proper quantification of bycatch species and implement them during fishing tasks. The CFP requested at SAYDS to sign agreements with research institutions to ensure the analysis data obtained by OBOs (CFP Resolution N° 6/2009). Information on catches, the area of operation for each fishing season, type of sediment and incidental catch, including

those species that make up the habitat of the target species, continues to be collected and analysed through the POAB (Palacios, 2024). **Therefore, the SG60 level is met.**

There is information of INIDEP's shrimp assessment campaigns, including monitoring of benthic fauna associated with the seabeds where this resource is distributed and captured (San Jorge Gulf, the coast of Chubut province and waters under national jurisdiction). These studies allow the detection of changes in the structure of benthic communities, whose species are indicators of the impact of trawl fishing and the state of the benthic ecosystem in general (Souto, 2019). These studies have been carried out since the beginning of the fishery (*e.g.* Roux *et al.*, 1995; Roux & Fernandez, 1997; Roux, 2000, 2008, 2009, 2010, 2011; Gaitan *et al.*, 2013; Souto & Giberto, 2014; Souto, 2018a, 2018b, 2019).

Gaitan (2021) evaluates the structure of the macroinvertebrate communities present in the breeding and reproduction area of common hake between 43° and 47° S in the area adjacent to the Restricted Fishing Effort Zone, observing that the number of taxa, as well as the quantity per set, was like that found by Gaitan & Souto (2018). The species associations maintained the spatial distribution pattern and their discriminant components as in previous years (Gaitan *et al.*, 2014; Gaitan & Souto, 2017). In conclusion, in the period 2017-2021, no major changes are seen in the composition of benthic communities. This study was mainly carried out outside the ZEPR. **Therefore, the SG80 level is met.**

Gaitan & Alemany (2024) determined the most ecologically relevant benthic invertebrate species between 34° S and 55° S, characterize their main biological traits, define them by sector, and analyse their spatial overlap with bottom trawl distribution. To this end, 708 bottom trawl fishing hauls from eight INIDEP research campaigns between 2013 and 2022 were analysed, covering the Buenos Aires Coastal Ecosystem (BCE), the Northern Shelf (ZCPAU), the Patagonian Shelf (PP), and the Southern Shelf (SA). A total of 275 benthic invertebrate taxa were recorded as part of the by-product fauna, of which only 34 taxa dominated in terms of the relative importance index (RII > 1%). From these, 26 functional groups were identified, reflecting high functional diversity among the main benthic taxa in the area. The four sectors analysed were characterized by benthic communities with a marked and/or relatively stable structure. In general, the dominant organisms were characterized by specific biological traits, such as globose or oval morphology, medium/large body size, long lifespan, filter-feeding mode, sessile living position, zero mobility, and the ability to multiply the substrate. The overlap in the distribution and abundance of the main species with fishing trawling showed different patterns depending on each taxon. Then, there is some quantitative information available and adequate to estimate the types and distribution of the main habitats. Therefore, the distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats and **the SG100 level is met.**

Information adequacy for assessment of impacts				
b	Guide post	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear.	Information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.	The physical impacts of the gear on all habitats have been quantified fully.
		OR	OR	
		If CSA is used to score PI 2.4.1 for the UoA: Qualitative information is adequate to estimate the consequence and spatial attributes of the main habitats.	If CSA is used to score PI 2.4.1 for the UoA: Some quantitative information is available and is adequate to estimate the consequence and spatial attributes of the main habitats.	
	Met?	Yes	Yes	No
Rationale				

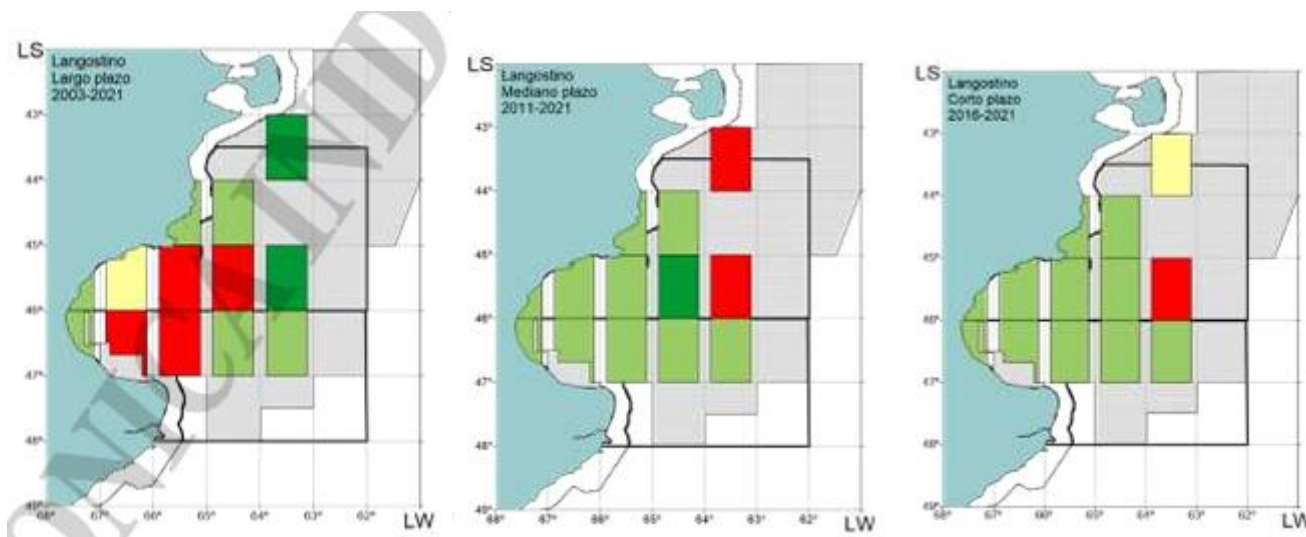
This fishery has been assessed in terms of characteristics and spatial distribution of microbenthic communities since its inception, monitoring is generally carried out in shrimp against research campaigns (Roux *et al.*, 1995; Roux & Fernandez,

1997; Roux, 2000, 2008, 2009, 2010, 2011; Gaitan *et al.*, 2013; Souto & Giberto, 2014; Souto, 2019; among others). So, there is data gathered by Private Observer Program and analysis developed by CEDEPESCA (2023).

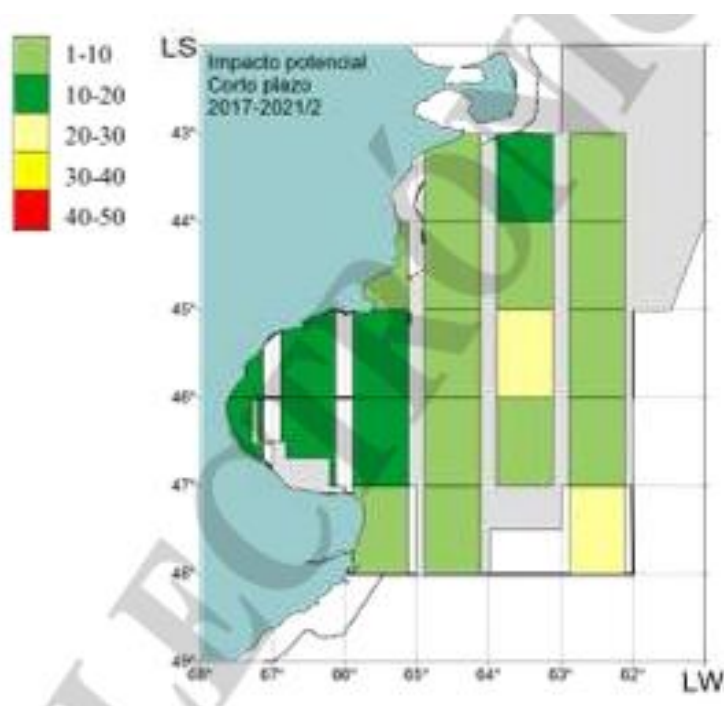
According to Souto (2019), the most frequent taxa remain and in percentages like those found in previous monitoring (Gaitan *et al.*, 2013; Souto *et al.*, 2014; Souto, 2018a and 2018b). The best represented phyla were Arthropoda (Crustacea), Mollusca and Echinodermata, which is why the most represented groups have also been maintained. Which is consistent with the information obtained by the Private Observer Program.

According Alemany *et al.* (2016), areas with high fishing trawl intensity are usually located in the same place year after year. Since fishing events are concentrated, the fishing effort is much higher in these areas, which could have important effects on the ecosystem (Bolam *et al.*, 2014). It is therefore essential to identify and assess the most vulnerable areas, to assess the effects and impacts of trawling (Hiddink *et al.*, 2007).

Mauna *et al.* (2024) made comparisons on the spatial distribution of the fishing effort made by the Southern king crab, Southern hake and shrimp fisheries, establishing for this a quantitative scale of 1 to 5. For the shrimp fleet, the pattern of potential impact due to fishing disturbance presents notable variations in the different spatial scales considered. The highest values were presented in the San Jorge Gulf and a sector of the northern federal waters (accumulated disturbance in 18 years), this pattern changes in the medium term (accumulated disturbance in 10 years), with only the northern federal waters presenting two sectors with the greatest potential impact, maintaining this pattern in the short term (accumulated disturbance in 5 years). The following figures show the changes in short, medium and long-term for shrimp fishery.



By integrating the information and fishing effort of the 3 fisheries (hake, shrimp and crab), accumulated on a relative scale of 1 (minimum) and 50 (maximum), two sectors with the greatest impact in the short term were delimited, CE4563 and 4762, which correspond to the management zones called North Nation and South Nation. The greatest impact on CE4563 is influenced by the disturbance of the shrimp freezing fleet and on 4762 by the hake fleet. The following figure shows the potential impact in short-term.



The decrease in fishing effort in the Central Patagonian Area by the shrimp fleet would be due to the reproductive ban in the San Jorge Gulf and secondly, by a change in the distribution of the fleet due to the expansion of the shrimp resource towards areas far from the coast in an east-northeast direction (Fischbach & Bertuche, 2017; Moriondo Danovaro & De la Garza, 2019; Mauna *et al.*, 2024).

According Gaitan & Alemany (2024), the distribution of fishing effort by the different fleets operating with bottom trawls presents an irregular pattern, with large sectors with little or no effort and some areas with high effort, although the latter represent less than 5% of the total area of the Argentine Exclusive Economic Zone (Alemany *et al.*, 2016). Accordingly, benthic species with broad distribution ranges, such as those recorded as companion fauna of the common hake (*Merluccius hubbsi*) (Gaitan & Souto, 2017), would overlap spatially with bottom trawls only in specific and/or restricted locations within their vast areas of occurrence. In this way, the impact or effect of this disturbance on these species would be minimized.

Then, some quantitative information is available and adequate to estimate the consequence and spatial attributes of the main habitats and **the SG60 and SG80 levels are met.**

c	Monitoring		
	Guide post	Adequate information continues to be collected to detect any increase in risk to the main habitats.	Changes in all habitat distributions over time are measured.
	Met?	Yes	Yes
Rationale			

Main information is collected and provided by the INIDEP On-board Observers Program. Bycatch assessment forms a Private On-board Observer Program (POAB) was launched since 2016. This Program continue collecting data about red shrimp fishery bycatch and other topics related with habitat. Monitoring shrimp assessments campaigns by INIDEP, collecting data of the benthic community continue each year. Then, adequate information continues to be collected to detect any increase in risk to the main habitats.

Overall Performance Indicator score	95
Condition number (if relevant)	N/A

PI 2.5.1 – Ecosystem outcome

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
a	Ecosystem status			
	Guide post	The UoA is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	There is evidence that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
	Met?	Yes	Yes	No
Rationale				

According to the definition provided by the Table SA8, ‘*Serious or irreversible harm to structure and function*’, for the ecosystem component, is the reduction of key features most crucial to maintaining the integrity of its structure and functions and ensuring that ecosystem resilience and productivity is not adversely impacted. This includes, but is not limited to, permanent changes in the biological diversity of the ecological community and the ecosystem’s capacity to deliver ecosystem services.

The results of the 2024 shrimp and hake fishing seasons (as the main primary species in this fishery), in accordance with INIDEP assessment campaigns, confirm that the shrimp and hake populations remain in balance. Continuous monitoring of the fisheries, based on research campaigns, surveys, and information from on-board observers, remains key to decision-making and the sustainability of the resource.

Assessment campaigns conducted by INIDEP scientific vessels, benthic communities associated with bottom trawl fisheries are monitored in the Argentine Exclusive Economic Zone (EEZ) and the Argentine Uruguayan Common Fishing Zone (AUZ). This monitoring covers a large area of the Southwest Atlantic, between 34° S and 55° S, encompassing the Argentine and Magellan biogeographic provinces (Balech & Erlich, 2008). During these campaigns, the epibenthic fauna, which lives on the seafloor and is captured as bycatch is analysed. Among them, macroinvertebrates (>1 mm) and mega invertebrates (>1 cm) are the groups that, due to their size, are most likely to be retained by bottom fishing gear (Gaitan *et al.*, 2013, 2014, 2020; Gaitan & Souto, 2017, 2018; Gaitan & Luz Clara, 2019; Gaitan, 2020). Furthermore, these surveys employ bottom trawls like those used by commercial fishing fleets, allowing for direct comparison of the results obtained. This facilitates the identification of the main benthic fauna species likely to be affected by bottom trawls targeting various fishery resources.

Gaitan & Luz Clara (2019) noted that the most frequent invertebrate taxa remain and in percentages like those found in previous monitoring (Gaitan *et al.*, 2013; Souto *et al.*, 2014; Souto, 2018a, 2018b). The best represented phyla were Arthropoda (Crustacea), Mollusca and Echinodermata, which is why the most represented groups have also been maintained (Souto, 2019). Which is consistent with the information obtained by the Private Observer Program

In the same way, INIDEP research cruises comes from 2017 and 2018 (Souto, 2018a; 2018b; 2019). Souto (2018a; 2018b) found that the best represented phyla were Arthropoda (Subphylum Crustacea), Echinodermata and Mollusca. The shrimp contributed with 86% of the relative biomass, followed by the crustaceans *Munida gregaria*, *Pterigosquilla armata*, the spider crab *Lithodes santolla*, the crustacean *Petrunkevitchi* sp., the cnidarian *Renilla* sp. and poriferans. Clustering analysis and SIMPROF tests indicated the existence of 2 groups of stations according to species composition and contribution to biomass, which were statistically significant. The results show that the benthic communities inside the San Jorge Gulf and the Chubut coastal seabed and waters adjacent to the Gulf remained almost unchanged, in their structure, specific composition and spatial distribution with respect to the 2017 campaign.

During 2019 campaign (Souto, 2019), there were few variations in the values of the indices, parameters and species associations compared to what was observed in 2018. There were also no major changes in the frequency of occurrence of species, with sustained growth of the shrimp *Peisos petrunkevitchi*. In relation to the grouping of species between fishing hauls, 4 groups were identified, two of them inside the San Jorge Gulf, one of them covering the mouth of the Gulf and a last one covering the Rawson coast. The difference between groups is mainly due to the distribution and abundance of the shrimp *Pleoticus muelleri*. It is important to note that in group 2, corresponding to the outermost part of the northern San Jorge Gulf, the presence of *Renilla* sp. stood out. After the shrimp, it was the one that contributed the most

to the internal similarity of the group, with a frequency of occurrence and relative biomass that was important in relation to the rest of the benthic invertebrates.

As a complement to the studies previously mentioned by Gaitan & Alemany (2024), focused on the analysis of functional traits, reveals patterns of dominance and functional diversity among benthic invertebrates from different regions, highlighting the importance of certain taxa and the variety of biological strategies they employ to adapt to their environment. The objectives of this study were to determine the most ecologically relevant benthic invertebrate species between 34° S and 55° S, characterize their main biological traits, define them by sector, and analyse their spatial overlap with the distribution of bottom trawls. To this end, 708 bottom trawl fishing hauls from eight INIDEP research campaigns between 2013 and 2022 were analysed, including the Buenos Aires Coastal Ecosystem (BCE), the Northern Shelf (ZCPAU), the Patagonian Shelf (PP), and the Southern Shelf (SA). A total of 275 benthic invertebrate taxa were recorded as part of the by-catch fauna, of which only 34 taxa dominated in terms of the relative importance index (RII > 1%). From these, 26 functional groups were identified, reflecting high functional diversity among the main benthic taxa in the area. The four sectors analysed were characterized by benthic communities with a marked and/or relatively stable structure. In general, the dominant organisms were characterized by specific biological traits, such as globose or oval morphology, medium/large body size, long lifespan, filter-feeding mode, sessile living position, zero mobility, and the ability to multiply the substrate. The overlap in the distribution and abundance of the main species with fishing trawling showed different patterns depending on the taxon.

Next table show characteristics of the main species that were distributed in at least two of the analysed sectors. PA: Southern Shelf; ZCPAU: Argentine Uruguayan Common Fishing Zone; PP: Patagonian Shelf; ECB: Buenos Aires Coastal Ecosystem. The area where the species was present, although it did not reach an IRI value > 1%, is indicated in parentheses. * Species under commercial exploitation.

Rasgos morfológicos			Rasgos historia de vida	Rasgos comportamentales			
Morfología	Fragilidad	Tamaño corporal	Longevidad	Modo de alimentación	Posición de vida	Movilidad del adulto	Multiplicador de sustrato
Globosa, oval (GO)	Frágil (F)	< 1 cm (P)*	< 2 año (C)	Filtrador/ Suspensívoro (FS)	Sésil (S)	Ninguna (N)	Si (S)
Vermiforme (V)	Intermedia (I)	1-10 cm (M)	2-5 años (M)	Alimentador depósito (AD)	Infaunal (I)*	Leve (L)	No (N)
Irregular (IR)	Robusta (R)	> 10 cm (G)	> 5 años (L)	Depredador (D)	Vida libre (VL)	Alta (A)	
Chata (CH) ¹				Ramoneador/ Herbívoro (RH)	Tubícola (T)		
Delgada (D) ²							
Erecta (E) ³							

1-Dorsoventrally compressed species (e.g., starfish)

2-Laterally compressed species (e.g., shrimp)

3-Species whose height is greater than their projected base (e.g., corals, some sponges)

*Taxa with these traits (size < 1 cm or infaunal) are underrepresented due to the fishing gear used.

Rasgos	Morfológicos			Historia de vida	Comportamentales				Zonas	Rango latitudinal
Taxón	Morfología	Fragilidad	Tamaño corporal	Longevidad	Modo de alimentación	Posición de vida	Movilidad	Multiplicador sustrato		
<i>Gorgonocephalus chilensis</i>	CH	F	G	L	FS	VL	L	N	PA-ZCP-PP	36°S-54°S
<i>Paramolgula gregaria</i>	GO	R	G	M	FS	S	N	S	PA-ZCP-PP	36°S-55°S
<i>Tedania</i> sp.	IR	F	G	L	FS	S	N	S	PA-ZCP-PP	36°S-54°S
Tunicados Polyclinidae	GO	I	M	M	FS	S	N	N	PA-ZCP-PP	35°S-55°S
<i>Chaetopterus antarcticus</i>	V	I	M	C	FS	T	L	S	PP-ZCP-(PA)	35°S-55°S
<i>Metridium senile</i>	GO	I	M	L	D	S	N	N	PP-ZCP-(PA)	35°S-55°S
<i>Polysia opuntia</i>	IR	F	G	M	FS	S	N	N	ECB-PA-(ZCP-PP)	36°S-55°S
<i>Magellania venosa</i>	GO	F	M	L	FS	S	N	S	PP-(ZCP-PA)	36°S-54°S
<i>Lithodes santolla</i> *	GO	R	G	L	D	VL	A	S	PP-PA-(ZCP)	36°S-55°S
<i>Zygochlamys patagonica</i> *	CH	R	M	L	FS	S	L	S	PP-ZCP-(PA)	36°S-55°S
<i>Pleoticus muelleri</i> *	D	I	M	C	D	VL	A	N	PP-ECB	34°S-48°S

Analysing the biological traits of benthic invertebrates is essential for ecosystem-based fisheries management. Traits such as longevity, reproductive modes, and regeneration rates provide key information on a species' ability to recover from disturbances such as fishing trawls (Rijnsdorp *et al.*, 2018; Hiddink *et al.*, 2019). This allows for the identification of species

essential for ecosystem stability, the prediction of community changes, and the identification of which species or functional groups are most vulnerable to fishing activity (Jørgensen *et al.*, 2016; McLaverty *et al.*, 2021).

The results of this work indicate that, although 275 benthic invertebrate taxa were recorded as bycatch in the eight analysed campaigns, only 34 taxa achieved a Relative Importance Index (RII) value greater than 1% in any of them. This suggests that, although the number of epibenthic invertebrate taxa retained in fishing nets is high, only a small group of species dominates in terms of relative importance in catches. Furthermore, the strong dominance of certain organisms in three of the analysed regions (ECB, PP, and PA), where one or a few species contribute significantly to the total biomass, suggests that these areas possess benthic communities with a distinct and/or relatively stable structure.

The species distribution and their relationship to the major biogeographic regions described for the area, it was determined that the ascidian *Paramolgula gregaria*, the basket star *Gorgonocephalus chilensis*, sponges of the genus *Tedania* sp., and tunicates of the family Polyclinidae were dominant in three sectors (PA, ZCPAU, and PP) that are mostly within the boundaries of the Magellan Province. This province encompasses the entire continental shelf between 43° S and 55° S and extends northward along the shelf edge to 35° S-36° S (Balech & Erlich, 2008). The results of this work, in line with recent studies focusing on other marine organisms such as fish (Cousseau *et al.*, 2020), copepods (Acha *et al.*, 2020), and some groups of benthic invertebrates (Bastida *et al.*, 1992), validate the cohesion of this region as a distinct biogeographic unit (Gaitan & Alemany, 2024).

The analysis of the 34 species with the highest Relative Importance Index (RII) identified 26 functional groups, reflecting high functional diversity among the main epibenthic taxa in the area. Although only nine traits were assessed, the inclusion of more traits is likely to further increase this diversity. The low overlap of traits among species suggests that they play complementary roles, which reinforces functional diversity and reduces redundancy (Shojaei *et al.*, 2021). It has been reported that, in areas subject to bottom trawling, benthic organisms with more opportunistic, short-lived, and highly mobile lifestyles, as well as sediment-feeding organisms, are found, while areas undisturbed by fishing are characterized by the presence of more complex and diverse functional traits (free-living scavengers and predators, sessile suspension feeders, and also long-lived burrowing species), with bioturbating and burrowing species predominating (Tsikopoulou *et al.*, 2022). In this context, considering that disturbed systems are characterized by low functional diversity (Micheli & Halpern, 2005), the high level of functional diversity recorded in the present study could indicate that, in principle, the disturbance caused by bottom trawling throughout the area would not be profoundly affecting the studied species. Since the functional traits of benthic species differ between areas with higher trawl intensity than undisturbed ones, the importance of studying them in preserving ecosystem function is highlighted.

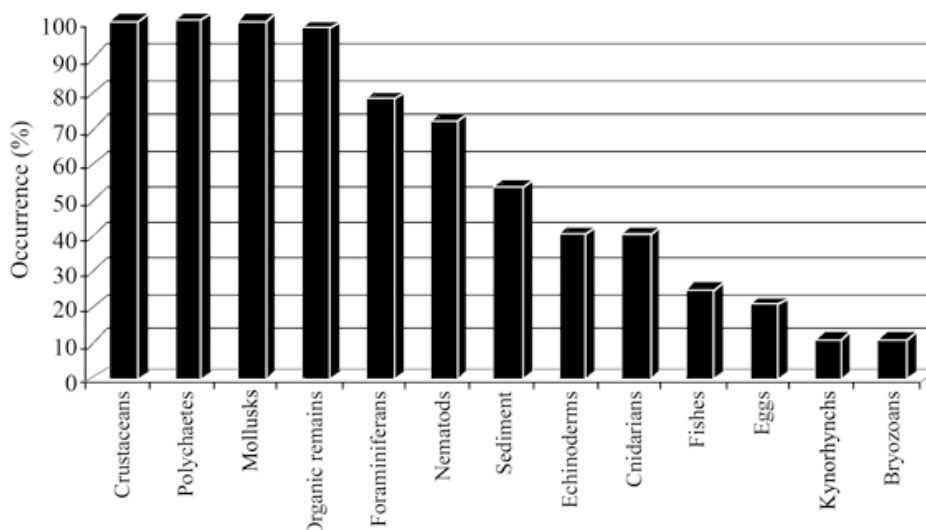
The distribution of fishing effort by the different fleets operating bottom trawls presents an irregular pattern, with large sectors with little or no effort and some areas with high effort, although the latter represent less than 5% of the total area (Alemany *et al.*, 2016). Accordingly, benthic species with broad distribution ranges, such as those recorded as bycatch fauna of the common hake (and others, like shrimp), would overlap spatially with bottom trawls only in specific and/or restricted locations within their vast areas of occurrence. Thus, the impact or effect of this disturbance on these species would be minimized (Gaitan & Alemany, 2024).

Amoroso *et al.* (2018) reported that, mostly, fisheries would not impact large areas but, even though they can trawl over large areas, the greatest impacts are concentrated in small areas well identified (see rationale provided in the PI 2.4.3).

Food ecology studies are essential for understanding the dynamics of marine communities (Heithaus, 2004), as well as the biological interactions and energy flow of an ecosystem (Gulland, 1983; Pauly, 1984; Soares *et al.*, 1992). The food ecology of hake has been extensively studied in recent years through classical stomach content analysis. In summer, the diet includes *Peisos petrunkevitchi* on Escondida Island (Ruiz & Fondacaro, 1997), squid (*Illex argentinus*) and anchovy (*Engraulis anchoita*) in the reproductive region south of the Valdes Peninsula as well as euphausiids and hyperiid amphipods in San Jorge Gulf and adjacent waters (Belleggia *et al.*, 2014). Since 2008, dietary changes have been observed in San Jorge Gulf, with an increase in consumption of the shrimp *Grimothea gregaria* (Belleggia *et al.*, 2017).

The Argentine red shrimp is an ecologically important benthic predator (Roux, 1999). Crustaceans, molluscs, and polychaetes are the main prey items. Feeding behaviour is like other penaeid shrimps from Australia, the Gulf of Carpentaria (Wassenberg & Hill, 1987; 1993), Moreton Bay (Hill & Wassenberg, 1987) and some crangonid species of the Irish Sea (Oh *et al.*, 2001). The diet of *P. muelleri* consisted predominantly of three categories of seabed organisms: 1) demersal (miscidaceans, euphausiids, decapods), 2) epifaunal (amphipods, isopods, cumaceans, gastropods), and 3)

infaunal (bivalves, polychaetas, foraminifera, nematodes). It is concluded that *P. muelleri* is an important predator on benthic organisms. In the next figure are the main food items found in stomachs of *P. muelleri* (Roux *et al.*, 2009).



Souto *et al.* (2024) provided an update on the trophic ecology of *P. muelleri* in the Chubut Province and the Chubut coast, characterizing for the first time the diet of specimens from national waters, expanding our understanding of its diet in other areas of its distribution. The shrimp is a species with a wide geographic distribution, which means it inhabits and interacts with benthic communities characterized by different types of seabed from a sedimentological point of view (Parker *et al.*, 1997; Fernandez *et al.*, 2003) as well as diverse faunal assemblages (Roux *et al.*, 1995; Souto & Giberto, 2014; Gaitan *et al.*, 2013; Gaitan & Souto, 2017; Kaminsky *et al.*, 2018; Suby, 2021). In this sense, it was expected to find differences in the composition and diversity of the diets of specimens from the different sectors considered in this study. The results presented in this work confirm that the diet of the shrimp *Pleoticus muelleri* is varied and like that documented in previous studies (Angelescu & Boschi, 1959; Alberto *et al.*, 1993; Roux & Fernandez, 1997; Roux, 1998, Roux *et al.*, 2004, 2009; Lopez *et al.*, 2023). It had previously been characterized as an omnivorous species (Angelescu & Boschi, 1959; Alberto *et al.*, 1993) like other penaeids (Al-Maslamani *et al.*, 2007). However, the low frequency of algae in the stomachs of the shrimp analysed in the present study highlights a preference for benthic fauna. The results of this work show that, in terms of its diet, it can be classified as an active, generalist predator with sediment-eating habits. It primarily feeds on a wide variety of different prey items, which it voluntarily ingests after actively searching for them. It also passively consumes organic matter and/or small meiofauna organisms found in the sediments. This generalist habit allows the species to adapt to the availability of prey in the environment.

On the other hand, hake (*Merluccius hubbsi*), main species discarded in the red shrimp fishery is predator and prey in the trophic web of the demersal and pelagic community in its distribution area and constitutes one of the key species in the food chains of the Patagonian marine ecosystem. Hake behaves as an opportunistic predator, showing a preference for planktonic crustaceans during the juvenile stage and for numerous other taxa (including a high degree of cannibalism) in the adult stage. The prey that mainly characterizes the diet of hake are the crustaceans, *Munida gregaria* (72.2%) and *Peisos petrunkevitchi* (19.04%), followed by *M. hubbsi* (7.95%) (Alonso, 2017).

Bellegia *et al.* (2024) analysed the diet of common hake (*Merluccius hubbsi*) in two research campaigns carried out in 2024, one in summer (VA-02/24) and the other in winter (VA-08/24), in the northern Patagonian region. Prey frequency was calculated to determine the importance of each food item in both seasons. In summer, 38.63% of stomachs contained prey, predominantly crustaceans, followed by fish and cephalopods. The most important crustaceans were *Euphausia* spp. and *Grimothea gregaria*. The most consumed fish were anchovy (*Engraulis anchoita*), nototenia (*Patagonotothen ramsayi*), and hake (cannibalism). Among cephalopods, the squid *Illex argentinus* was the most frequent prey. In winter, 26.43% of stomachs contained prey, with consumption of crustaceans such as *Euphausia* spp., *G. gregaria*, and amphipods (*Themisto gaudichaudii*) and fish being the most common. The most frequently consumed fish were *P. ramsayi*, followed by cannibalism and anchovy. Seasonal differences in diet suggest changes in prey availability and feeding behavior of hake, with greater consumption of crustaceans and cephalopods in summer and fish (mainly *P. ramsayi*) in winter. Cannibalism and shrimp consumption did not vary between the analysed seasons.

According Funes (2020), applying meta-analysis, integrating all the studies published so far that evaluated changes in the trophic niche of fishes between trawling and non-trawling environments, and applying stable isotope analysis for this estimate, the trophic level of fish does not change between trawled and non-trawled environments by the fishery. In contrast, local study showed trophic niches more higher and isotopic niches wider, and their overlap was lesser in the trawling environment. Diet reconstruction indicated a higher consumption of *Merluccius hubbsi*, the main component of discarding. Then, bottom trawling activity has a small effect on the trophic niche of fish that is not it implies ecologically significant or unidirectional changes. There is no evidence for suppose a decrease in the trophic niche of fish as a result of fishing impacts and the direction the changes may appears to be case-specific.

Chondrichthyans are relevant item due to their role as top predators, with low abundance and highly sensitive species (very low natural mortality rate). However, they represented less than 2% (*i.e.* 1.8% in 2017, 1.1% in 2022), in the fishery under assessment.

In addition, the main management measures are set by the Federal Fisheries Council that control fishing in waters under federal jurisdiction. Currently, fishery management measures at the federal level are to be found in the CFP Resolution N° 7/2018, modified by means of the CFP Resolution N° 9/2022. In the case of chondrichthyans, wider measures have been taken in the context of the Sharks, Rays and Chimaeras (PAN-*Tiburones*). The same in the case of National Action Plan for the Management and Conservation of Seabirds and Marine mammals.

Several no-fishing zones have been instituted in conjunction with Chubut and Santa Cruz to protect certain reproduction and nursery areas. In the mid-1980s, the first regulations on fishery management of Argentine red shrimp were issued, with the aim of preventing shrimp overfishing. Simultaneously, the first closed area aimed to protect the growth of juvenile Argentine red shrimps was put into effect in the area known as Bajo Mazarredo Bay area in the San Jorge Gulf (in the sector of the gulf under jurisdiction of the Province of Santa Cruz) (Boschi, 1989; Roux *et al.*, 2012).

The comprehension of the entire ecosystem functioning requires of a complex and integrative studies, but even when further studies will be required, the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. **Therefore, the SG60 and SG80 levels are met.**

However, there is no evidence that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. **Therefore, the SG100 level is not met.**

Overall Performance Indicator score	80
Condition number (if relevant)	N/A

PI 2.5.2 – Ecosystem management strategy

PI 2.5.2		There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are measures in place, if necessary which take into account the potential impacts of the UoA on key elements of the ecosystem.	There is a partial strategy in place, if necessary, which takes into account available information and is expected to restrain impacts of the UoA on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	There is a strategy that consists of a plan , in place which contains measures to address all main impacts of the UoA on the ecosystem, and at least some of these measures are in place.
	Met?	Yes	Yes	No
Rationale				

There are measures and even a partial strategy in place to ensure that the fishery considering potential impacts of the fishery on key elements of the ecosystem. Several management fishing measures protect chondrichthyans either directly or indirectly in Argentina. Most chondrichthyan catches takes place in what is known as the Argentina Uruguay Common Fishing Zone (AUCFZ) where Total Allowable Catch (TAC), for chondrichthyans was established in 2014 by the Mixed Technical Commission of the Maritime Front (*Comision Tecnica Mixta del Frente Maritimo* - CTMFM).

A management fishing area for chondrichthyans in national waters (>12nm), regulated by the Argentina and Uruguay Common Fishing Zone (AUCFZ) protects temporally demersal and benthic coastal chondrichthyans through the exclusion of bottom trawling activity for 5 months each year from the 1 November to 31 March in a small area (~1,630 nm²) since 2010 (CTMFM Resolution N° 9/2010).

ETP species that interact with red shrimp fishery have requirements for protection or rebuilding provided through national ETP legislation based on international agreements and the respective National Action Plans: PAN-Aves, PAN Marine Mammals, National Action Plan for Sharks, skates, rays and chimaeras (NPOA), Law XVII-N° 62 (ex-Law 4,597). Since 2015, Argentina applied a strategy focuses to protect ETP species, according to several international agreements. The Federal Fishing Law N° 24,922 establishes that fishing operations in Argentine Sea will be subject to restrictions established by the CFP based on the conservation of resources, to avoid over-exploitation, prevent harmful effects on the environment and the unity of the ecological system.

Consequently, INIDEP was instructed to implement actions and methodologies necessary for the adequate quantification of the incidental unwanted of chondrichthyans and seabirds during the fishing tasks of the commercial fleet. Moreover, the POAB was improved in 2020 to increase the observers' identification capabilities and to require the observers to take data regarding both direct and indirect interactions, and not only of observed mortality.

The CFP Resolution N° 7/2018, and its updated version (CFP Resolution N° 9/2022), established management measures of shrimp fishery, ensuring sustainability of red shrimp and hake (*Merluccius hubbsi*) and indirectly could also ensure the sustainability of benthic habitat. Some of them, are the next:

- INIDEP will carry out 3 minimum of research campaigns a year on the target species (shrimp) and its accompanying fauna, mainly hake. If necessary, it may require the participation of the commercial fleet. The first research campaign is conducted in March for the evaluation of remaining reproduction and evaluation of the beginning of the season; another in July for the assessment of pre-recruits and recruits, and the last one, in November for the assessment of the reproductive process and effects of fishing at the end of the season.

- In addition to the campaigns indicated to evaluate the authorization of shrimp fishing, the CFP will request from INIDEP a scientific prospecting plan with commercial vessels to verify the presence of shrimp concentrations, the size structure and the relationship between hake and shrimp up to 20%.

- The shrimp fishery in closed areas will be carried out through a dynamic system of opening and closing of areas and/or subareas, based on the evolution of parameters such as capture of non-commercial sizes, females in reproduction or spawning status and/or bycatch of other species.

- Bottom trawling is prohibited from October 1 to November 30 of each year in the Interjurisdictional Areas of Restricted Effort (*Area Interjurisdiccional de Esfuerzo Pesquero - AIER*) between parallels 43° and 45° S and meridian 63°30' W to protect the reproduction of common hake.

- Bottom trawling addressed to shrimp is prohibited to the east of the limit of the jurisdiction waters of the Province of Rio Negro, up to the meridian 62° W, between parallels 41° and 43° S.

- Both chilling and freezer vessels must have an on-board inspector or an observer from INIDEP. The Enforcement Authority may order the boarding of provincial observers, in accordance with the respective provincial authority. The cost of the on-board inspector or observer will be borne by the ownership.

Bento-pelagic coupling in the Patagonian Shelf Break Front determines the production of food for red shrimp and associated species in the benthic community. Fishing has no effect on the dynamics of this major oceanographic feature. Then, there is a partial strategy in place, if necessary, which considers available information and is expected to restrain impacts of the UoA on the ecosystem to achieve the Ecosystem Outcome 80 level of performance. **Therefore, the SG60 and SG80 levels are met.**

However, there is not a strategy that consists of a plan, in place which contains measures to address all main impacts of the UoA on the ecosystem, and at least some of these measures are in place. **Therefore, the SG100 level is not met.**

Management strategy evaluation				
b	Guide post	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar UoAs/ ecosystems).	There is some objective basis for confidence that the measures/ partial strategy will work, based on some information directly about the UoA and/or the ecosystem involved.	Testing supports high confidence that the partial strategy/ strategy will work, based on information directly about the UoA and/or ecosystem involved.
	Met?	Yes	Yes	No
Rationale				

Areas closing to trawling are online monitored by by Argentine Coast Guard (PNA), the vessels are enforced using the vessel monitoring system and the information is available to Fisheries Authorities. In combination with the fact that the fleet is confined to the Restricted Fishing Effort Zone (ZEPR) and a small portion of the ecosystem is trawled.

Target species in the main fisheries are assessed regularly, and sensitive species like sharks and skate are protected by National Plans and international agreements. All regulation is centralized by Federal Fisheries Council (*Consejo Federal Pesquero* - CFP). **Therefore, the SG60 level is met.**

Chilling and freezer vessels must have an on-board inspector or with an INIDEP observer (Article 22°, CFP Resolution N° 7/2018. Main information is collected and provided by the INIDEP On-board Observers Program. Since 2016, a Private On-board Observer Program (POAB), collect too information of the fishery in assessment.

These aspects are some objective bases for confidence that the measures/partial strategy will work, based on some information directly about the UoA and/or the ecosystem involved. But they are not tested in integrated way to support high confidence that the strategy will work, **then the SG80 level is met.**

However, there is no testing that support with a high confidence that the partial strategy/ strategy will work, based on information directly about the UoA and/or ecosystem involved and **the SG100 level is not met.**

Management strategy implementation				
c	Guide post		There is some evidence that the measures/partial strategy is being implemented successfully .	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a).
	Met?		Yes	No
Rationale				

There is evidence that the management measures, like closing areas, as partial strategy to protect the ecosystem, being implemented successfully. All vessels are forced to use monitoring system; they are monitored by satellite and violations are punished. Both chilling and freezer vessels must have an on-board inspector or an observer from INIDEP. The Enforcement Authority may order the boarding of provincial observers, in accordance with the respective provincial authority.

INIDEP carried out an audit of the Observer Program, between January 1 and December 31, 2019. The report corresponds to INIDEP Executive Report N° 12/2020.

In the case of ETP species, the Enforcement Authority Ministry of Environment and Sustainable Development (*Ministerio de Ambiente y Desarrollo Sostenible* – MArDS), through the Directorate of Fish and Aquatic Resources (*Dirección de Recursos Ictícolas y Acuícolas*) is empowered to proposed additional technical and management measures that could improve the application of the standard related to ETP species.

The incidental catch of fishes and invertebrates in the last 6 years (data collected by the private on-board observer), is very low, with most species with capture less than 0.1% (Table 14, background). In the last one's macroinvertebrate assessment campaigns, the most representative phyla have remained, Echinodermata, Arthropoda (Subphylum Crustacea) and Porifera. As observed in campaigns at the beginning of the fishery (Roux & Fernandez, 1997). **Therefore, the SG80 level is met.**

However, there is no clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a) and **the SG100 level is not met.**

Overall Performance Indicator score	80
Condition number (if relevant)	N/A

PI 2.5.3 – Ecosystem information

PI 2.5.3	There is adequate knowledge of the impacts of the UoA on the ecosystem		
Scoring Issue	SG 60	SG 80	SG 100
a	Information quality		
	Guide post	Information is adequate to identify the key elements of the ecosystem.	Information is adequate to broadly understand the key elements of the ecosystem.
	Met?	Yes	Yes
Rationale			

Information is adequate to broadly understand the key elements of the ecosystem. One of the most recent are those derived from the Pampa Azul which is a national initiative to promote scientific research in key zones of the Argentinean Sea. Several research areas had originally arisen to cover areas of scientific, strategic, and economic interest, in general responding to some more relevant ecosystem service.

Other source of information is derived from the INIDEP Observers Program and Private Observers Program, records enough data on species to detect any relevant variation on the species composition. INIDEP Research surveys allow determining variations on species composition, functional groups, trophic structure and distribution of the community. Benthic communities and sediment structure of the benthos have been studied (Bastida & Urien, 1981; Bastida *et al.*, 1992).

Then, in general, the information allows a broadly understand of the key element of the ecosystem and **the SG60 and SG80 levels are met.**

b	Investigation of UoA impacts			
	Guide post	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, but have not been investigated in detail.	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and some have been investigated in detail.	Main interactions between the UoA and these ecosystem elements can be inferred from existing information, and have been investigated in detail.
	Met?	Yes	Yes	No
Rationale				

Main interactions between the fishery and the ecosystem elements have been investigated. CEDEPESCA and the Hydrobiology Laboratory of the Faculty of Natural Sciences of the National University of Patagonia San Juan Bosco (FCN-UNPSJB) collaborated to implement a private On-board Observer Program as part of the Fishery Improvements Project (PROME).

Into the same Program, during s 2017, 2018, 2019 and 2022, CEDEPESCA and the Hydrobiology Laboratory of the Faculty of Natural Sciences of the National University of Patagonia San Juan Bosco (FCN-UNPSJB), have been collecting and analysing information on red shrimp fishery bycatch.

Fishery management relies on research campaigns that are conducted twice a year by the INIDEP. The Federal Fishery Council opens and closes fishing areas relying on advice provided by INIDEP regarding catch length, proportion of impregnated females and the incidental catch of Argentine hake (*Merluccius hubbsi*). The CFP Resolution N° 9/2022 amends Article 17° of Annex I in the CFP Resolution N° 7/2018, the Federal Fisheries Council formalized a harvest control rule for the fishery under federal jurisdiction. Article 17° now explicitly states that fishing areas will be dynamically opened and closed, and that fishing areas will be closed when, according to information provided by INIDEP, a high level of mature or impregnated females is present in the catch, and the CPUE is analysed, especially when the following is observed: (a) the relation hake/shrimp is larger than 20%, and/or (b) there is presence of Argentine red shrimp of commercial categories L4 or smaller in a percentage larger than or equal to 20% during four consecutive fishing days. This harvest control rule is in line with the preliminary harvest control rule made explicit in CFP Acts N° 19/2019 and N° 19/2020 for the 2019 and

2020 fishing seasons, where the Federal Fishery Council stated that fishing areas shall be closed if the information provided by INIDEP observers signalled that: (a) there is presence of Argentine red shrimp commercial categories L4, L5 and L6 in catches in a proportion equal or greater than 20% for four consecutive days in any area, or (b) the relation hake/shrimp is greater than 0.20 in any area. Furthermore, the monthly CPUE-based reference points and the mature female-based reference points used by INIDEP to provide advice to the Federal Fishery Council are contained in INIDEP's Report (De la Garza & Moriondo Danovaro, 2021). This would work together with the suggested target reference point set by INIDEP at 60% of the average abundance surveyed in March between 2017 and 2021 (Moriondo Danovaro *et al.*, 2022b). **Therefore, the SG60 and SG80 levels are met.**

Therefore, while main impacts and some interactions of the UoA on key ecosystem elements can be inferred from existing information, and some have been investigated in detail; not all main interactions between the UoA and ecosystem elements can be inferred from existing information, nor there is enough evidence to support they have been investigated in detail, **therefore, the SG100 level is not met.**

c	Understanding of component functions			
	Guide post		The main functions of the components (i.e., P1 target species, primary, secondary and ETP species and Habitats) in the ecosystem are known .	The impacts of the UoA on P1 target species, primary, secondary and ETP species and Habitats are identified and the main functions of these components in the ecosystem are understood .
	Met?		Yes	No
Rationale				

The impacts of the fishery on target, Primary, Secondary and ETP species are identified and some impacts of these components in the ecosystem are known and understood.

Main studies related to the ecosystem are focused on frontal system and how they influence diversity, abundance and assemblage structure of fish and shellfish (Bogazzi *et al.*, 2005; Alemany *et al.*, 2009; Mauna *et al.*, 2011; Lucifora *et al.*, 2012).

Prenski & Angelescu (1993) analysed the possible consequences of intensive fishing on different resources, considering the formation of schools and their interspecific competition. Mari & Giussi (2016) studied fish assemblages affected by trawling activities in hoki fishery. Sanchez & Mari (2005) analysed trophic connectivity in fish community including zooplanktonic and benthic composition. The main functions of the Components (*i.e.* P1 target species, primary, secondary and ETP species and habitats), in the ecosystem are known. **Therefore, the SG80 level is met.**

Then, main functions of the components (*i.e.* P1 target species, primary, secondary and ETP species and habitats) in the ecosystem are known and the SG80 level of performance is met. However, the main functions of these components in the ecosystem are not understood, **then, the SG100 level is not met.**

d	Information relevance			
	Guide post		Adequate information is available on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.	Adequate information is available on the impacts of the UoA on the components and elements to allow the main consequences for the ecosystem to be inferred.
	Met?		Yes	No
Rationale				

Sufficient and adequate information is available on the impacts of the fishery on the components in the ecosystem to allow some of the main consequences for the ecosystem to be inferred. The ecological community and ecosystem in which the fishery operates is well known. Since the beginning of the activity, information has been collected from research and commercial trips, including collection of all activity by the commercial fleet, campaigns annual assessment, sampling of benthic fauna by on-board observers and establishment of areas of closures were implemented. Research trips have been periodically performed, the Argentina biogeographic scheme has been detailed, and experiences with the objective to improve efficiency and selectivity have been carried out by fishing companies in association with research institute.

Then, adequate information is available on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred. **Therefore, the SG80 level is met.**

However, there is no adequate information available on the impacts of the UoA on the components and elements to allow the main consequences for the ecosystem to be inferred. **So, the SG100 level is not met.**

e	Monitoring			
	Guide post		Adequate data continue to be collected to detect any increase in risk level.	Information is adequate to support the development of strategies to manage ecosystem impacts.
	Met?		Yes	No
Rationale				

Data are continuously collected to detect any increase in risk level (*e.g.* due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures), although it may not be fully analysed and published, or may not be sufficient. Bycatch is continued to be monitored by the INIDEP OBO Program and POAB. Therefore, while sufficient data continues to be collected to detect any increase in risk, information is still not sufficient to support the development of strategies to manage ecosystem impacts, due it is necessary develop and update studies of the areas affected by fishing, both in calculating the swept area and the benthic structure-fauna impacted and its recovery capacity.

Therefore, adequate data continue to be collected to detect any increase in risk level **and the SG80 level is met.** However, there is no information adequate to support the development of strategies to manage ecosystem impacts and **the SG100 level is not met.**

Overall Performance Indicator score	80
Condition number (if relevant)	N/A

10.3 Principle 3

10.3.1 Principle 3 background

b. Area of operation of the UoA and under which jurisdiction it falls

The shrimp fishery is conducted in a wide distribution of Argentine Sea, being shared by provincial and national water jurisdictions. According the INIDEP Technical Report N° 13/2023 (De la Garza, 2023), landings conducted in the national jurisdiction achieved the 66.81% of total catches for 2021; while 64.3% for 2022. The UoA is addressed exclusively in national waters between 41° and 47° S (Figure 42).

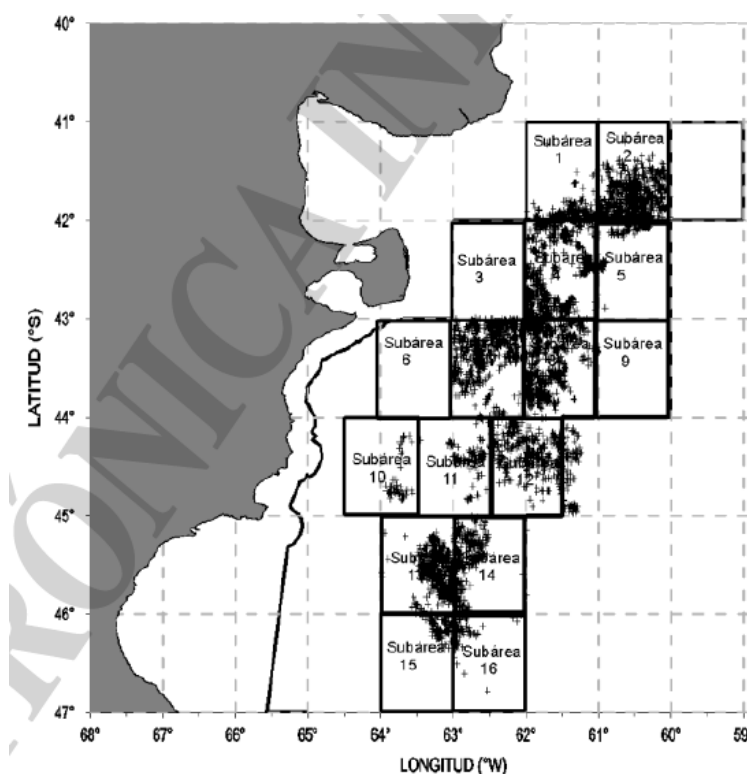


Fig. 42. Distribution area of Argentine shrimp fishery in national waters. (Source: De la Garza, 2023)

c. Data of recognized groups with interests in the UoA

The interest groups that participate in the management process of the Argentine red shrimp fishery at national level in the different stages are the following:

i. Ministry of Economy (ex-Ministry Agriculture, Livestock and Fisheries – ex-Ministerio de Agricultura, Ganadería y Pesca – MAGyP)

As this Ministry is recently modified thought Executive Order N° 451/2022 dated 03/08/2022, MAGyP's functions were delegated to Ministry of Economy. No changes of roles related to fishery sector was reported.

It is the national fishing agency of the Argentine Government, responsible for the implementation of the national fishing legislation and the resolutions issued by Federal Fisheries Council (*Consejo Federal Pesquero* - CFP). According to its Article 1° of Law N° 24,922, its objective is to promote the exercise of maritime fishing activities in pursuit of maximum development compatible with the rational use of marine living resources. It promotes the effective protection of national interests related to fishing operations and promotes the sustainability of these activities, fostering the long-term conservation of populations, favouring the development of environmentally appropriate industrial processes that promote obtaining the maximum added value and the greatest employment of Argentine labour. The fishing activity and the processing of resources are regulated by the Federal Fishing Regime. Their responsibilities and powers are described in the Law N° 24,922.

The current structure of Ministry of Agriculture, Livestock and Fisheries (*Ministerio de Agricultura, Ganadería y Pesca* – MAGyP) was stated by the Article 20° of the Law of Ministries, established by the Executive Order N° 532/2019, which modified Executive Order N° 438/1992 and its amendments. The functions of the MAGyP as the Enforcement Authority, in relation to fishing, are described in the Article 7° of Law N° 24,922.

ii. Secretary of Agriculture, Livestock and Fisheries (*Secretaría de Agricultura, Ganadería y Pesca* - SAGyP)

The Decree of the National Executive Power N° 214/1998 established the Secretary of Agriculture, Livestock and Fisheries (SAGyP) as the Enforcement Authority of Law N° 24,922 (Art. 1°). The Secretary responsible will integrate and presides over the CFP (Art. 2°). The SAGyP functions were assigned to the Ministry of Agriculture, Livestock and Fisheries.

The SAGyP is responsible for conducting and executing the national fisheries policy established by the CFP through the Undersecretary of Fisheries and Aquaculture (SSPyA). The SAGyP controls compliance with the maximum permissible catches (*Captura Máxima Permissible* - CMP) by species, issues catch quotas in accordance with the guidelines defined by the CFP, collects the Single Extraction Rights (*Derechos Unicos de Extracción* - DUE) and catch fees, defines and executes the control system of maritime catches, administers the sanction regimes, verifies the accuracy of the information given to the fishing reports and promotes the consumption of fishery products.

The roles of the Enforcement Authority are defined in the LFP and are as follows:

- Conduct and execute the national fishing policy, regulating the exploitation, surveillance and investigation.
- Conduct and execute the objectives and requirements related to scientific and technical investigations of fishing resources.
- Control the Maximum Permissible Catches (CMP) by species, established by the Federal Fisheries Council (CFP) and issue the annual catch quotas by vessels – species- fishing areas and fleet, as granted by the CFP.
- Issue fishing permits, prior authorization from the CFP.
- Calculate the available surpluses and establish, prior approval of the CFP, the restrictions regarding areas or closed seasons.
- Establish, prior approval of the CFP, the requirements and conditions that vessels and fishing companies must meet to develop fishing activity.
- Establish the methods and techniques of capture, as well as the equipment and fishing gear of prohibited use, with the advice of INIDEP and in accordance with the fishing policy established by the CFP.
- Apply sanctions in accordance with the infractions regime and create a record of offenders of management system, reporting to the CFP.
- Prepare and/or develop fishing statistic systems.
- Intervene in international, bilateral or multilateral negotiations related to the fishing activity in accordance with the national fishing policy.
- Regulate the operation of the Fishing Registry created by the Federal Fishing Law.
- Receive the extraction rights established by the CFP.
- Intervene in the granting of benefits from the sectoral promotion or to be granted to the fishing sector.
- Intervene in investment projects that have or require specific financing from international organizations and/or that have been granted by national government, in accordance with the criteria determined jointly with the CFP.
- Issue authorizations for experimental fishing, prior approval of the CFP.
- Establish and implement the necessary and sufficient control systems to reliably determine the catches in the territorial sea and the Exclusive Economic Zone (EEZ) and landed in authorized Argentinean ports and the compliance and veracity of the catch affidavits.
- Carry out national promotion campaigns for the consumption of living resources from the sea and missions abroad to promote the commercialization of products from the national fishing industry.

-Exercise all powers and attributions conferred to the Enforcement Authority.

iii. Undersecretary of Fisheries and Aquaculture (*Subsecretaria de Pesca y Acuicultura - SSPyA*)

Currently, the Enforcement Authority is delegated to the Undersecretary of Fisheries and Aquaculture (SSPyA), whose organization chart and authorities are available in its website (<https://www.argentina.gob.ar/agricultura/agricultura-ganaderia-y-pesca/subsecretaria-de-pesca-y-acuicultura>). Among the main objectives of the SSPyA are:

-Propose and implement the national fishing policy for the effective protection of national interests related to maritime fishing and the sustainability of fishing activity, seeking the maximum development compatible with the rational use of living marine resources within the framework of Law N° 24,922, its amending and complementary regulations.

-Intervene in all matters related to the well-manage of resources.

-Participate in negotiations on the establishment of fiscal and customs policies and foreign trade related to the fishing sector, in coordination with the relevant agencies.

-Coordinate the work related to fishing records.

-Assist in the granting of the fishing assignment prior approval of the CFP and assist in the approval of the transfer of licenses for fishing vessels.

-Provide, as appropriate, the immediate suspension of fishing permits when the vessel arrives at port and any other necessary measure, when there are an infraction and serious sanction as a result of the infraction of current regulations.

-Propose closed areas, fishing seasons and/or reserves and delimitations of fishing zones based on specific technical reports, prior approval of the CFP.

-Develop requirements and conditions for marine fisheries, including methods of capture and prohibited and permitted techniques with the advice of INIDEP.

-Control the harvest control rule (*i.e.* TAC) and the issuance of annual catch quotas per vessel, prior approval of the CFP.

-Propose measures to regulate harvesting, handling, and monitoring and research activities in areas under national jurisdiction and in waters adjacent to the EEZ.

-Propose and implement measures to regulate the transport of fishery products.

-Review the requirements of fishing and aquaculture policies.

iv. National Directorate of Fisheries Coordination and Inspection (*Dirección Nacional de Coordinación y Fiscalización Pesquera - DNCyFP*)

Its main responsibility is to control and manage fishing activities within the framework of current legislation. Its functions include supervise commercial fishing activities in the national regulated area, fishing gear and methods, maximum catches, landings, satellite monitoring of vessels and traceability of catches. Intervene in the management of authorization requests for experimental fishing projects. Coordinate activities of control and inspection with the Security Forces and the armed forces with jurisdiction in the matter to prevent illegal, unreported and unregulated fishing in accordance with current regulations. Lead the body of inspectors affected by the control of fishing activities.

Four Directorates and two Coordination Units depend on this National Directorate.

v. Directorate of Fisheries Administration (*Dirección de Administración Pesquera*)

Its main responsibility is the fishery management in relation to the System of Individual Transferable Catch Quotas and the authorizations to catch non-quoted species.

Its functions include supervising the use of Individual Transferable Catch Quotas (CITC), catch authorizations and catch quotas by species assigned to each vessel; and carry out the control of compliance with the Maximum Permissible Catches by species, established by the CFP.

vi. Directorate of Planning and Management of Fisheries (*Dirección de Planificación y Gestión de Pesquerías – DPyGP*)

Its responsibility is to integrate scientific and technical information to facilitate decision-making related to fishery management and growth of the sector, implement in the short, medium and long term the development of permanent fishing statistical systems.

Its functions include: coordinating the preparation of periodic and conjuncture reports on fishing and aquaculture at the local and international level and on related economic activities; coordinate the analysis of the information on fishing activities prepared by the DNCyFP and the scientific-technical information provided by the INIDEP, to project measures that facilitate the protection of maritime fishing resources; and, participate in the advisory commissions on the operation of specific fisheries.

The Coordination of Fisheries Management and Promotion of Internal Fish Consumption depend on this Directorate. Among its actions, the following stand out: integrate scientific-technical information that facilitates decision-making for the management, administration and development measures of the sector, to strengthen the sustainability of marine fishing resources and the conservation of their habitats; and, assist in the management planning of the maritime fishing policy and in the evaluation of programs and projects linked to the activity.

The Inland Fisheries Coordination Unit also reports to the DPyGP.

vii. Directorate of Control and Inspection (*Dirección de Control y Fiscalización*)

Its main purpose is to coordinate and supervise the tasks of control and inspection of fishing vessels. Its actions include coordinating the control tasks of fishing activities within the scope of the national jurisdiction; supervise the activities of the fishing districts; and assist the National Directorate in conducting the body of inspectors affected by the control of fishing activities.

viii. Directorate of Fishing Regulations and Registration (*Dirección de Normativa y Registro de la Pesca*)

Its main purpose is to assist and advise the SSPyA in the compatibility, harmonization and application of the regulations that regulate fishing activity and aquaculture. Coordinate the actions of organization and updating of the Fishing Registry created by Law N° 24,922.

Among its actions, the following stand out: manage the information established according to the Federal Fisheries Regime approved by Law N° 24,922 regarding all human or legal persons and/or the entities resulting from their group that intervene in the prospecting, capture, industrialization, trade and/or transport of living marine resources, their products or by-products.

The Coordination Unit for Fishing Permits and Individual Transferable Catch Quotas depends on this Directorate. Among the main actions of this Unit stand out; assist the Directorate in the registration and administration of information related to human or legal persons engaged in fishing in maritime spaces subject to national jurisdiction, ownerships, and vessels with valid fishing permits and authorizations catch. Assist in the registration and issuance of the corresponding certificates, regarding fishing permits, capture authorizations and Individual Transferable Capture Quotas (CITC). Assist in the preparation of draft administrative acts and technical reports on the modification, transfer and termination of Individual Transferable Catch Quotas (CITC).

The Coordination Units that depend on the DNCyFP are:

-Infringements and Sanctions Analysis Coordination Unit. Among its actions, the following stand out: understand the analysis of the actions submitted to its intervention, in order to establish possible infractions of current regulations and propose, if applicable, the opening of the corresponding summary; submit to the National Directorate, the proposals for sanctions for the infractions committed; and, notify the administrators of the alleged infractions attributed to them, receive the statements and discharges in this regard and substantiate the evidence that is necessary.

-“Catch and Export Certification Coordination Unit”, which reports directly to and is also chaired by the National Director of Fisheries Coordination and Control and is responsible for certifying that the catches, both those that correspond to national jurisdiction and to the provincial ones have been carried out in accordance with applicable national laws and regulations, as well as with international management and protection measures. The functions of this “Unit” include developing and executing instruments to prevent, deter and eliminate IUU fishing; verify and certify that all catches, both

in national and provincial jurisdiction, have been carried out in accordance with applicable national laws and regulations, as well as with international management and protection measures. It must also endorse the documents, guarantee their validity and verify the information presented by the fishing operators.

ix. Federal Fisheries Council (*Consejo Federal Pesquero* - CFP)

The Federal Fisheries Law (LFP) assigns the CFP the responsibility of setting the fisheries policy. In general, it holds its plenary meetings every 15 days, and a summary of their results is published on the agency's website (www.cfp.gob.ar) through minutes and resolutions.

The CFP was created by Law N° 24,922 (Federal Maritime Fisheries Regime) enacted in 1998. It is a collegiate body made up of 10 members, of which 5 are elected by each of the provinces with a maritime coastline and the others 5 are elected by the National Executive Power, among whom is the Undersecretary of Fisheries, who holds the Presidency of the CFP, 1 representative of the Ministry of Environment and Sustainable Development, 1 representative of the Ministry of Foreign Affairs, International Trade and Worship, and 2 members who are appointed by the National Executive Power.

Article 9° of Law N° 24,922 establishes the functions of the CFP, among which are:

- Establish the national fishing policy.
- Establish the fisheries research policy.
- Establish the Maximum Permissible Catch (TAC) by species, considering the maximum sustainable yield of each of them, according to data provided by INIDEP. In addition, establish the annual catch quotas by vessel, species, fishing area and type of fleet.
- Approve commercial and experimental fishing permits.
- Set the guidelines for co-participation in the National Fisheries Fund (FO.NA.PE.).
- Establish extraction rights and set fees for the exercise of fishing.
- Regulate the exercise of artisanal fishing by establishing a fishing quota reserve for the different species to be assigned to this sector.
- Establish the issues to be considered by the CFP that require a qualified majority in the vote of its members.
- Dictate its own operating regulations, which must be approved with the affirmative vote of two thirds of its total members.

In addition, Article 17° of Law N° 24,922, establishes that *"fishing in all maritime spaces under Argentine jurisdiction, will be subject to the restrictions established by the CFP based on the conservation of resources, in order to avoid excesses exploitation and prevent harmful effects on the environment and the unity of the ecological system"*.

Honorary Advisory Commission (*Comision Asesora Honoraria*)

According to the Article 10° of Law N° 24,922, an honorary advisory commission was created by the CFP Resolution N° 7/1998. This commission is formed by representative of different business associations and fishery entities, which acts as an advisory body with the aim of issuing its non-binding opinion on the matters consulted. In 2004, the CFP modified the constitution of this commission (CFP Resolution N° 7/2004), creating two subcommittees (with separated stakeholders) to develop a process of debate and issuance of opinion within a framework of sectorial affinity.

All subcommittee' comments/opinions are presented in writing to the Federal Fisheries Council.

x. Other decentralized dependencies of the Ministry of Agriculture, Livestock and Fisheries (*Ministerio de Agricultura, Ganaderia y Pesca*)

National Institute for Fisheries Research and Development (*Instituto Nacional de Investigacion y Desarrollo Pesquero* - INIDEP)

INIDEP's main responsibility is to advise the Federal Fisheries Council (*Consejo Federal Pesquero* - CFP), the Undersecretary of Fisheries and Aquaculture (*Subsecretaria de Pesca y Acuicultura* - SSPyA), the Ministry of Environment and Sustainable Development (*Ministerio de Ambiente y Desarrollo Sostenible* - MAdyDS) and the Ministry of Foreign Affairs, International

Trade and Worship (*Ministerio de Relaciones Exteriores Comercio Internacional y Culto - MRECIyC*) in the rational use of sustainable resources with the aim of preserving the marine ecosystem for future generations.

Among its missions and functions are formulate, execute and control research projects in prospecting, evaluation and development of fisheries, aquaculture technologies, fishing gear, technological processes and fishing economy, according to guidelines and priorities established by the Enforcement Authority.

The objectives, policies and requirements of scientific and technical research related to living marine resources are defined by the CFP, and INIDEP is responsible for planning and executing scientific and technical activities related to the evaluation and conservation of living marine resources. Its responsibility to annually determine the Acceptable Biological Catch (CBA) of marine species is highlighted. Likewise, it collaborates with other national and provincial organisms in fishing dissemination and research tasks.

To carry out its task, INIDEP manages and has fishing research vessels owned by the National State and a qualified team of researchers and assistants.

The results of research work on fishery resources are previously approved by the National Research Directorate of INIDEP, submitted to the Directorate and then made available to the CFP before any use or disclosure thereof. These Reports can be found on the Institute's website (<https://www.inidep.edu.ar/solicitud-de-informes-catalogo.html>).

INIDEP Resolution N° 291/2021 and its Annexes approve the instructions for the preparation of Technical, Research, Advice and Transfer, Campaign and Working Documents Reports and the procedures for their publication in the digital repository of the website.

Companies dedicated to the extraction of living marine resources are obliged to supply all the information required for the research of the resource.

National Service of Health and Food Quality (*Servicio Nacional de Sanidad y Calidad Agroalimentaria - SENASA*)

SENASA is a National Agency that oversees issues related to the health of products of animal and plant origin, for which it carries out tasks of inspection and certification of products and by-products. It also carries out different tasks related to the prevention, control and eradication of animal diseases, placing special emphasis on those that can be transmissible to humans.

The local food regulations include an Argentine Food Code, which complies with the required international standards and SENASA oversees monitoring its compliance.

Everything related to the intervention that SENASA is responsible for in relation to products, by-products and derivatives of products of animal origin is established by the Federal Executive Order N° 4,238/1968 and its amendments. Chapter XXIII of the same is dedicated to fishery products.

In relation to the fishing activity, SENASA controls the work inside the processing plants on land and on-board the vessels when they process and/or store the catches in cold chambers.

Its task also covers the stages of transportation of the landed products processed on-board, as well as the captures of the different fish species that are transferred from the port to processing plants, when it crosses the limits of one or more provinces. It then continues with quality controls in the preparation, fractionation, packaging, storage, transportation and marketing of fish products and by-products made in the processing plants.

Its task also covers the control prior to the export and import of fishery products and by-products.

Ministry of Environment and Sustainable Development (*Ministerio de Ambiente y Desarrollo Sostenible - MAMyDS*)

MAMyDS, in addition to participating in the CFP, oversees issues related to strategic factors for the management of the Argentine marine-coastal zone, such as the defence of sovereignty and the conservation of biodiversity, in coordination with sustainable development of extractive activities.

Among other programs, it executes the Project "Strengthening the management and protection of marine coastal biodiversity in key ecological areas and the application of the ecosystem approach to fishing (EEP)", jointly with the CFP. To this end, it works in partnership with the environmental and fishing areas of all the provinces with a maritime coastline.

It is also in charge of coordinating the development of the National Action Plans (*Planes de Accion Nacional* - PAN), for which it periodically holds workshops in which national and provincial Research Institutes and various NGOs participate.

Among the PANs are the PAN-IUU, aimed at preventing, deterring and eliminating illegal, unreported and unregulated fishing. The PAN-Sharks whose objective is the conservation and management of chondrichthyans (sharks, rays and chimeras). The PAN-Birds, aimed at reducing the interaction of birds with fisheries and the PAN-Marine Turtles, which aims to mitigate the possible effects of fishing on the population of sea turtles.

For its part, Law N° 25,675 (General Environmental Law), whose Enforcement Authority is the MAyDS, establishes the minimum budgets for the achievement of sustainable and adequate management of the environment, the preservation and protection of biological diversity and the implementation of sustainable development. The norm created the Federal Environment Council (*Consejo Federal de Medio Ambiente* - COFEMA) as a permanent body for the agreement and elaboration of a coordinated environmental policy between the 24 member States of the Argentine Republic and the MAyDS.

Ministry of Foreign Affairs, International Trade and Worship (*Ministerio de Relaciones Exteriores Comercio Internacional y Culto* - MRECIyC)

MRECIyC represents the country in international forums and oversees conducting economic negotiations for regional integration processes and bilateral and multilateral economic negotiations. This includes issues related to foreign policy aspects of fisheries and environmental issues related to this activity. It also includes the negotiation, interpretation and application of international instruments that regulate fishing activities and matters related to environmental issues. In addition, it promotes international trade in fishery products.

Argentine Coast Guard (*Prefectura Naval Argentina* - PNA)

The PNA is a security force of the National Executive Power that constitutes the national maritime authority. Based on this, it fulfils maritime navigation security police functions; prevention of public order in maritime and port spaces; environmental protection, judicial police, fisheries auxiliary, customs, immigration and health.

Through training courses that it carries out in various seamanship schools, it oversees enabling seamanship personnel and officers to embark on fishing vessels, who must have an authorized boarding book for this purpose.

Before setting sail, the vessels must have the authorization of the PNA, which includes regular inspections of the vessels to verify their seaworthiness. The role of the PNA is also highlighted in aspects related to the protection of the marine environment and its coasts, which includes the conservation of natural resources and the prevention and fight against water pollution by hydrocarbons and their derivatives, as well as the detection of possible harmful and/or dangerous substances that could come from both vessels and port facilities.

To fulfil its functions, it has coastguards, speedboats and planes that are equipped with advanced technological resources and specially trained personnel. In addition, the PNA works as an auxiliary to the Justice, both Federal and Provincial, developing summary or expert proceedings, when required to investigate possible illegal acts committed on-board fishing vessels or in actions related to maritime fishing, navigation or within port spaces.

d. Details of consultations leading to the formulation of the management plan

In the decision-making process, the Federal Fisheries Council must consult various agencies involved in the management to establish prohibitions or administrative measures, such as: establishment of closures, minimum extraction sizes, setting dimensions and characteristics of fishing gear, granting permits, requiring the use and carrying of devices to minimize incidental catch, forbidden of permanent or temporary catches of species protected by international conventions, among others. The Management System includes consultation processes for decision-making and regularly seeks and accepts the management proposal dealt by the Follow-up and Analysis Commission of Benthic Crustacean Fisheries, technical recommendations from INIDEP and the technical subcommittee. The CFP can consider the requests or proposals, and, in some cases, it responds publicly how it is considered or not through minutes that are available on its website.

The consultation process provides the opportunity for all interested and affected parties to participate and facilitates their effective engagement. Opinions and proposals of Commission are often considered by the CFP before making any decisions on the fishery. Any interested party may request a hearing with the management bodies and is heard prior to deciding.

Explanations are provided for any actions (or inactions) associated with relevant findings and recommendations arising from research, monitoring, evaluation and review activities. These are published in INIDEP Technical Reports, which are sent to the CFP and their receipt is published in records of their meetings.

e. Arrangements for on-going consultations with interest groups

Stakeholders participate through consultations made to the Follow-up and Analysis Commission of Shrimp Fishery, the Advisory Commission of the CFP.

f. Objectives for the fishery

The general objectives of fisheries management are described in the Law N° 24,922 that established the Federal Fisheries Regime, which in its Article 1° sets that Argentina will promote the exercise of maritime fishing in pursuit of the maximum development compatible with the rational use of marine living resources. In addition, it is responsible for the effective protection of national interests related to fishing and to provide the sustainability of fishing activity, promoting the long-term conservation of resources, favouring the development of environmentally appropriate industrial processes that promote the maximum added value and the highest employment of Argentine labour.

The Enforcement Authority may establish the methods and techniques of captures, as well as establish the equipment and fishing gear of prohibited use, with the advice of INIDEP and in accordance with the fishing policy established by the CFP, as well as the application authority may establish closed areas or fishing season as is indicated in the Article 19° of the Law N° 24,922. The information pertinent to the imposition of such restrictions, as well as their lifting, will be widely disseminated and in time communicated to stakeholders and the competent authorities for appropriate control. Likewise, it may establish reserves and delimitation of fishing areas, imposing on permit holders the obligation to supply statistical information on the catches obtained, fishing effort and the position of their vessels.

The CFP will be responsible for establishing the national fishing policy and the maximum allowable catch per species, considering the maximum sustainable yield of each of them, according to technical reports provided by INIDEP. In addition to establishing the annual catch quotas per vessel, species, fishing area and type of fleet.

The concepts of Maximum Sustainable Yield (MSY) and Total Allowable Catch (TAC) are defined by the Executive Order N° 748/1999 in the Articles 8° and 9°, respectively. The MSY is defined as the maximum volume that can be caught annually set by the CFP based on the MSY and economic and social considerations of fishing sector. The TAC may be reviewed based on the conservation of the resource.

In accordance with provisions of the Article 17°, fishing activity in all maritime areas under national jurisdiction will be subject to restrictions established by the CFP to avoid excess exploitation and prevent harmful effects on the environment and ecological system.

Notwithstanding, the general objectives under an ecosystem approach established for the shrimp fishery were agreed upon with INIDEP, industrial chambers and fishing companies within the management plan was submitted to the consideration of the CFP (CFP Act N° 23/2024). This proposal was unanimously approved by the CFP meeting conducted on December 27th, 2024. It established that the general objective is "to establish an institutional framework for the sustainable management of the shrimp fishery, seeking its maximum development compatible with the rational use of the resource, under an ecosystem approach that allows for the continuity of socioeconomic activity over time and the minimization of impacts on the environment, in a space for dialogue between the stakeholders involved".

The following operational objectives were also established:

A. Objectives of the Biological and Ecological Dimension:

- Ensure the sustainability of the shrimp population.
- Mitigate the potential negative impacts of the fishery on the various components of the ecosystem.
- Minimize mortality and discards of non-target species.

B. Objectives of the Economic and Social Dimension:

- Ensure the economic sustainability of the fishery.
- Ensure the maximum employment of labour compatible with the sustainability of the fishery.

C. Objective of the Institutional Dimension:

-Articulate, integrate, and make compatible management measures among the jurisdictions with jurisdiction in the different areas where the fishery operates.

-Guarantee the participation of fishery stakeholders in the design and monitoring of the PMEEP.

The main actions for each objective were defined.

g. An outline of the fleet types or fishing categories participating in the fishery

According to the information provided by the client and described in the Table 5, there are 101 vessels licensed to catch shrimp with a length between 16 and 53.8 m, being at least 68 of them composed by freezer vessels between 25-53.8 m. All of them are authorized to harvest with bottom trawl net including outriggers.

Classification of shrimp fleet for offshore fishery			
Length (m)	Freezers	Chilling	Total
10 – 20	0	6	6
21 – 30	2	20	22
31 – 40	56	7	63
41 – 50	7	0	7
51 – 55	3	0	3
Total	68	33	101

Source: CEDEPESCA



Fig. 43. Shrimp vessel - Arbumasa XV. Bottom trawl net with outriggers (Source: ARBUMASA S.A.)

h. Details of those individuals or groups granted right of access to the fishery and particulars of the nature of these rights

In accordance with requirements of the Article 23° of Law N° 24,922, the exercise of fishing activity must have the authorization granted by the Enforcement Authority, through any of following management acts:

-Fishing license: enables national flag vessels to carry out commercial fishing to extract marine living resources under Argentine jurisdiction.

-High-altitude fishing license enables national flag vessels to carry out commercial fishing on the continental slope outside the EEZ, high seas or with licenses in third country waters.

-Temporary fishing license: they are granted to vessels leased bareboat under conditions and deadlines established by Law. The same treatment is applied to foreign-flagged vessels operating under the exceptional conditions established by Law.

-Fishing authorization: enables the catch of marine living resources in limited quantity for scientific or technical research purposes.

Vessels used in the fishing activity must be recorded in the national registry under the Argentine flag. Fishing licenses are granted by the Enforcement Authority, with prior authorization from Federal Fisheries Council and are established for a period of up to 10 years.

The authorization period for a license may vary, depending on the CFP's decision: i) the percentage of Argentine labour; ii) whether they were built in Argentina; and iii) the age of vessel. They may have an authorization of up to 30 years, if the vessel belongs to a company with processing facilities located in Argentine territory and that continuously process fish products there.

A catch quota will be awarded to all fishing licenses. These quotas are total or partially transferable respecting to conditions established by the CFP. Consequently, the licenses only allow access to the fishing ground, being necessary to have an assigned catch quota to carry out the activity.

The fishing license may only be transferred to another equivalent unit, which does not involve an increase fishing effort. The regulation considers expiry causes under some conditions, such as the seriousness of infractions, registration may be suspended.

i. Description of the measures agreed upon for the regulation of fishing to meet the objectives within a specified period (including general and specific measures, precautionary measures, contingency plans, mechanisms for emergency decisions, etc.)

The Federal Fisheries Regime Law N° 24,922 establishes in the Article 1° that Argentina will promote the exercise of maritime fishing in pursuit of the maximum development compatible with the rational use of living marine resources. It will promote the effective protection of national interests related to fishing and promote the sustainability of fishing activity, fostering the long-term conservation of resources, favouring the development of environmentally appropriate industrial processes, obtaining the maximum added value and the greatest employment of Argentine labour. Establishing the powers of the authority and obligations of fishing management to achieve the objectives of the law.

Likewise, the Executive Order N° 748/1999 regulates the Law N° 24,922 in the application scope: Federal Fisheries Council (CFP), Conservation and Administration of Marine Living Resources; fishing regime; crews; national fishing fund; infringements and sanctions; guarantee; complementary and transitory provisions. Also, Law N° 25,470 of 2001, modifies some aspects of Law N° 24,922, especially regarding the procedure of sanctions and infractions.

Specific regulations of the fishery under assessment

The main management measures for the shrimp fishery are established in the CFP Resolution N° 7/2018 and its updated version (CFP Resolution N° 9/2022), collected by the authority application by the Resolution N° 171/2018 of the Ministry of Agriculture, Livestock and Fisheries. Its main aspects are the following:

-Governments of Chubut and Santa Cruz agree not to allow the catch of shrimp in all San Jorge Gulf area for the current year and for up to a period of 5 years, which was extended until 2028 by the CFP Resolution N° 22/2022. According to state in CFP Act N° 2/2025 and through the Chubut Provincial Note N° 328-2025, the closure of San Jorge Gulf to shrimp harvesting was ratified.

-The CFP will compensate the effects of the provincial commitments to the extent that harvest is not allowed in the San Jorge Gulf, with the allocation to each of the indicated provinces of a social quota of 3,800 t per year, to be used by the chilling vessels of the provinces. Such vessels must land all the shrimp catches in said provinces.

-Vessels that direct their catches to the shrimp must have:

- a) Valid national fishing license to operate in waters under national jurisdiction and provincial fishing permit to operate in waters under jurisdiction of the issuing province.
- b) Capture authorization for shrimp or having received allocation of the quota.
- c) A length of up to 40 m and a maximum main engine power of 2,000 HP.
- d) Shrimp vessels that have a length that exceeds the previous limits will retain the right to fish for shrimp. Notwithstanding this, in the event of transferring or reformulating the respective fishing permit, they may only incorporate a vessel that has a maximum length of 40 m as a replacement.

e) The length to be recorded for the purposes of this standard is that verified by the Argentine Naval Prefecture and consigned as tonnage length by said authority.

-Vessels must operate with poles for shrimp nets, with a minimum mesh size in the codend of 45 mm between opposite nodes (lumen) with stretched and wet mesh. The maximum height of the gates and the maximum vertical opening of the net mouth must not exceed 150 cm.

-The shrimp fishing is enabled between 7:00 and 19:00. The trawling activity may not exceed 1 hour per haul, and the maximum trawling speed is 3.5 knots.

-The fishing vessels will have a maximum operating limit of 72 hours from the effective start of the fishing operations and until their arrival at the Port. If more time is required due to the distance, it must be previously requested.

-The chilling vessels must carry out the treatment of shrimp on-board to maintain the quality and freshness of the product. Catch must place in boxes of up to 17 kg of product. The entire catch must be stowed in the hold before starting the next haul.

-The freezers must have a freezing capacity according to the catch capacity and must classify by size and pack the entire catch of the haul in boxes of up to 2 kg. They will not be able to start a new set until they have all the catch processed. Percentage of tolerance of broken specimens or undersize of 50 units per kg and not higher than 20% of the total processed weight and up to 30% of headless shrimp (tails).

-The capture licenses limited in quantity ("quotas") for the shrimp of the vessels authorized will be modified according to the following detail:

a) When the total catches of the species reach 50% of the catch average of the last 10 years, the catch authorizations for shrimp limited in quantity will increase by 50% for all jurisdictions.

b) When the total catches of the species reach the average catch of the last 10 years, the catch authorizations for shrimp limited in quantity will increase by 100% for all jurisdictions.

c) When the total catches of the species among all jurisdictions reach 150% of the average catch of the last 10 years, the catch authorizations for shrimp limited in quantity will increase by 150% for all jurisdictions.

-The total annual catch authorized for the vessel due to the application of the previous regulation may not exceed 2,000 t of the shrimp, except for vessels that have a Capture Authorization with an upper limit, which will retain the limit of its authorization.

-In case of a reduction in catches equivalent to 50% or more of the average of the last 5 years of catch and given the evidence of a declining trend in the abundance of shrimp, a contingency plan will be applied that the CFP must be defined, considering the parameters of the Federal Fisheries Law.

-Temporarily set the maximum concentration per company or business group in the amount of 18 freezer vessels or 18 chilling vessels authorized to capture shrimp provided that the total number of 26 freezer and chilling vessels is not exceeded in set.

-INIDEP will carry out 3 research campaigns a year on the target species and its accompanying fauna. If necessary, it may require the participation of the commercial fleet. The first research campaign is conducted in March for the evaluation of remaining reproduction and evaluation of the beginning of the season; another in July for the assessment of pre-recruits and recruits, and the last one, in November for the assessment of the reproductive process and effects of fishing at the end of the season.

-In addition to the campaigns indicated to evaluate the authorization of shrimp fishing, the CFP will request from INIDEP a scientific prospecting plan with commercial vessels to verify the presence of shrimp concentrations, the size structure and the relationship between hake and shrimp up to 20%.

-The shrimp fishery in closed areas will be carried out through a dynamic system of opening and closing of areas and/or subareas, based on the evolution of parameters such as capture of non-commercial sizes, females in reproduction or spawning status and/or bycatch of other species.

-Bottom trawling is prohibited from October 1 to November 30 each year in the east area of the Interjurisdictional Areas of Restricted Fishing Effort (*Area Interjurisdiccional de Esfuerzo Pesquero – AIER*), between parallels 43° S and 45° S and east of meridian 63°30' W, in order to protect the reproductive period of common hake.

-Bottom trawling addressed to shrimp is prohibited to the east of the limit of the jurisdiction waters of the Province of Rio Negro, up to the meridian 62° W, between parallels 41° and 43° S.

-Both chilling and freezer vessels must have an on-board inspector or an observer from INIDEP. The Enforcement Authority may order the boarding of provincial observers, in accordance with the respective provincial authority. The cost of the on-board inspector or observer will be borne by the ownership.

C. National regulation of ETP species

The Enforcement Authority Ministry of Environment and Sustainable Development (*Ministerio de Ambiente y Desarrollo Sostenible* – MAYDS), through the Directorate of Fish and Aquatic Resources (*Dirección de Recursos Ictícolas y Acuícolas*) is empowered to proposed additional technical and management measures that could improve the application of the standard related to ETP species.

National Action Plan to reduce the interaction of marine mammals with Argentine Fisheries (PAN-Mamíferos)

Against to Resolution N° 351/1995 of Secretary of Natural Resources and Human Environment, 41 marine mammal species are protected, prohibiting their hunting, catch or appropriation and transit in national jurisdiction. The CFP Resolution N° 11/2015 was approved and established the National Action Plan related to reduce marine mammal interactions in Argentine fisheries. This plan describes the specific objectives and actions regarding to:

- expand, deepen and update the diagnosis of operational interactions of marine mammals with fisheries.
- strengthen national and provincial POBs and field technicians to collect data on interaction and incidental catch of marine mammals
- develop mitigation measures and promote their implementation, prioritizing actions on the most vulnerable marine mammal species.
- promote the implementation of measures already tested in some fisheries and assess their effectiveness.

The National Action Plan for marine mammals (*PAN-Mamífero*) was the result of a participatory process in which the initiatives of public management bodies, scientific sector, academic sector and Non-Governmental Organizations, among others, were articulated, culminating in a workshop held in 2011, under the coordination of Secretary of Environment and Sustainable Development (*Secretaría de Ambiente y Desarrollo Sustentable* - SAyDS) - currently it is updated to Ministry - and the Undersecretary of Fisheries and Aquaculture (*Subsecretaría de Pesca y Acuicultura* - SSPyA).

National Action Plan for the conservation and management of chondrichthyans (PAN-Tiburones)

The Resolution N° 6/2009 of Federal Fisheries Council approved the national action plan for the conservation and management of cartilaginous species (sharks, rays and chimeras). This action plan has as general objective to guarantee its conservation and sustainability based in the Federal Fisheries Regime framework and current international agreements, following the guidelines of FAO Code of Conduct for responsible fisheries and the ecosystem approach to fisheries management.

Other regulations in place are the CFP Resolution N° 4/2013 amended by the Resolution N° 7/2013, state: the prohibition of the target fishing of chondrichthyans and shark finning practices; to return to the sea alive elasmobranch species greater than 160 cm as mandatory; the prohibition the use of hooks to their handling; all dead individuals arrived to the deck must be declared; and establish maximum limits to catch rays, sharks and chimeras.

National Action Plan to reduce the interaction of seabirds with Argentine Fisheries

The CFP Resolution N° 15/2010 was approved, establishing the National Action Plan to reduce the interaction of birds with fishing operations in Argentina. The specific objectives are to:

- collect reliable data to determine nature and extend seabird interaction with fisheries through on-board observers of fishing vessels or other methods.
- minimize injuries and serious injuries of incidental catch by technical advances and the current devices, considering economic implications of mitigation measures adopted.

-train on-board observers and crew personnel. Raise awareness of fishing communities and public about conservation status of seabird.

-Strengthen scientific research ways and the articulation between academia and society.

For Plan preparation, all actions of the CFP since 2001 were considered, fundamentally the document 'Action Plan for the reduction of incidental mortality of birds in fisheries' conducted by National University of Mar del Plata (*Universidad Nacional de Mar del Plata*) and National University of Southern Patagonia (*Universidad Nacional de la Patagonia Austral*). Also, results of different workshops addressed with the participation of academic and scientific entities, government management agencies and non-governmental organizations were included in the proposal National Action Plan.

During June 2019, a new workshop was held to assess of implementation of National Action Plan to review objective progress and to schedule next activities for 2020-2020 period.

National Action Plan to reduce the interaction of sea turtles with Argentine Fisheries

The CFP Resolution N° 14/2018 was approved and established the national program to reduce the interaction of sea turtles with Argentine fisheries. According to the CFP Act N° 31/2018, the general objective is to reduce the impact of fisheries in these species in national waters within ecosystem management framework.

The specific aims are to:

- expand, deepen and update the diagnosis of sea turtle interactions with fisheries.
- reduce the incidental catch of sea turtles by developing mitigation measures and promoting their implementation.
- raise awareness in the community about the importance of sea turtles in the ecosystem and their vulnerability to environmental changes and threats.
- coordinate with institutions/actors for the effective implementation of the program.

In November 2014, a workshop was held to establish national program with the participation of national and provincial government agencies, members of scientific sector and non-governmental organizations. Likewise, it is conformed a Technical Advisory Group to promote the implementation of program tasks.

Protection of Vulnerable Marine Ecosystems (VMEs)

The Law N° 27,037 regulates the National System of Marine Protected Areas and its main objective is to establish restrictions to protect ecosystem, communities or biological or geological elements of the marine environment, including subsoil, seabeds and associated marine columns.

However, no specific regulation established for the protection of vulnerable marine ecosystem was found.

j. Particulars of arrangements and responsibilities for monitoring, control and surveillance and enforcement

Undersecretary of Fisheries and Aquaculture (SSPyA), as Enforcement Authority, has implemented the fishing activities control system ('SICAP') which is integrated by: a) the Satellite Positioning System of the National Fishing Fleet (established by SSPyA Decree N° 2/2003) establishes that all fishing vessels must have their satellite monitoring equipment on-board, in perfect working order. The system must report the position of the ship every hour and b) the control and surveillance activity carried by Argentine Coast Guard (PNA), which have surface units (coastguards) and air units (airplanes and helicopters) which allows to control that the areas closed to fishing are respected through patrols and overflights.

This information is complemented with download controls, documentary information provided by vessels and observers and satellite information, discharge and electronic fishing parts.

All vessels must operate with scientific observer or inspector. The following institutions participate in SICAP system:

- Undersecretary of Fisheries and Aquaculture (SSPyA),
- National Institute for Fisheries Research and Development (INIDEP),
- Argentine Coast Guard (PNA); and,
- National Service of Health and Food Quality (SENASA)

It should be noted that Federal Fisheries Council (CFP) approved the National Action Plan to prevent, discourage and eliminate illegal, unreported and unregulated fishing practices (PAN-IUU) to contribute the measures agreed upon international field according to the CFP Resolution N° 1/2008.

The main management tools and measures for the adequate monitoring of compliance regulations of the fishing activity are the following:

- On-board inspector and/or observer
- Location report through satellite positioning every 15 minutes.
- Carry out extractive activities of shrimp only between 7:00 am and 7:00 pm.
- Have a Capture Control Certificate.
- Have a Legal catch certification according Decree N° 8/2009 of SSPyA.

10.3.2 Principle 3 Performance Indicator scores and rationales

PI 3.1.1 – Legal and/or customary framework

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it:		
		- Is capable of delivering sustainability in the UoA(s); - Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and - Incorporates an appropriate dispute resolution framework		
Scoring Issue		SG 60	SG 80	SG 100
a	Compatibility of laws or standards with effective management			
	Guide post	There is an effective national legal system and a framework for cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and organised and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and binding procedures governing cooperation with other parties which delivers management outcomes consistent with MSC Principles 1 and 2.
	Met?	Yes	Yes	Yes
Rationale				

The Federal Fishing Regime provides the legal framework that allows achieving results consistent with MSC Principles 1 and 2 through Law N° 24,922 and its Executive Order N° 748/1999, fully respecting rights of use of people who depend on fishing for their livelihood and presents an adequate framework to resolve disputes.

There are mandatory procedures raised in the Law that regulate the cooperation between all parties that participate in the management of fisheries and ecosystem. Through the Articles 1° and 17° of Law N° 24,922, these procedures are compatible with MSC Principles 1 and 2.

These procedures are implemented by Undersecretary of Fisheries and Aquaculture (SSPyA), Federal Fisheries Council (CFP), INIDEP, Follow-up and Analysis Commission and the Technical Subcommittee, within their scope of competence.

The Federal Fisheries Regime establishes and defines the functions and responsibilities of each of the bodies that participate in the fishery management, as well as the entities that finance and develop the research necessary to the sustainable management.

Argentina is part of several International Agreements for the management and conservation of fishing, such as:

- United Nations Convention on the Law of the Sea, ratified by Law N° 24,543.
- Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (Compliance Agreement), ratified by Law N° 24,608.
- Convention on International Trade in Endangered Species of Wildlife Fauna and Flora (CITES), ratified by Law N° 22,344.
- Agreement on the Conservation of Albatrosses and Petrels (ACAP).

It has also supported the adoption of non-binding Instruments, such as:

- FAO Code of Conduct for Responsible Fisheries
- FAO IUU on Illegal Fishing
- PAN Sharks (according to FAO's scheme)
- PAN Seabirds (according to FAO's scheme)
- PAN Marine Mammals (according to FAO's scheme)

As there are an effective national legal framework and an effective framework for cooperation, **the SG60 and SG80 levels are met**. Also, there is a legal framework that contains mandatory procedures for cooperation with other parties. **Therefore, the SG100 level is met.**

b	Resolution of disputes			
	Guide post	The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system.	The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the UoA.	The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the context of the fishery and has been tested and proven to be effective .
	Met?	Yes	Yes	No
Rationale				

The national regulation incorporates an adequate system that include administrative and judicial aspects for the adequate solution of conflicts that may arise. The CFP as the management authority acts when a legal dispute arises, at request of one of parties in conflict. Decisions are written in public Acts that guarantee the transparency of the system.

Also, there is a clear procedure established in Law N° 24,922 for the solution of controversies in case of infractions that have been already carried out. According to the Article 54° *bis*, the offender may initiate his defence. However, if the sanction is maintained, the affected party may appeal through to the Enforcement Authority in virtue of the Article 59°. If the sanction is confirmed, it still possible to appeal to the National Chamber in the Federal Capital.

Likewise, Law N° 19,549 and its regulations established by the Executive Order N° 1,759/1972 establish the procedure for citizens to have guarantees that management authority acts in impartial manner, following the guidelines described. This law empowers those affected in its Title IV to judicially challenge administrative acts.

According to above, the management system is subject by law to a transparent mechanism for the resolution of legal disputes which is effective in dealing with most issues and that is appropriate to the context of the UoA. **Therefore, the SG60 and SG80 levels are met**. However, it is unknown if the conflict resolution has been tested and its efficacy demonstrated, and **the SG100 level is not met**.

c	Respect for rights			
	Guide post	The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.
	Met?	Yes	Yes	Yes
Rationale				

Fisheries are developed in a context where rights are well defined against Law N° 24,922, according with each administrative acts that are granted against the Article 23°. These rights are for defined terms depending on the type and they are subject to grounds for ending which are clearly established in the Law. So, the management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.

In addition to the above, the Argentine Constitution, in its Article 75°, paragraph 17, among other matters related to Indigenous Peoples, considers: *"Ensure their participation in the management of their natural resources and other*

interests that affect them. The provinces may exercise these powers concurrently". Furthermore, in accordance with Law 24,071, the Argentine Nation approved International Labour Organization Convention 169 concerning Indigenous and Tribal Peoples in Independent Countries. Likewise, Law 23,302, in its Article 1°, declares of national interest the attention and support of Aboriginal and indigenous communities existing in the country, and their defence and development for their full participation in the socioeconomic and cultural process of the Nation, respecting their own values and modalities. For more information: <https://www.argentina.gob.ar/derechoshumanos/inai/normativa>. **Therefore, all scoring levels are met.**

Overall Performance Indicator score	95
Condition number (if relevant)	N/A

PI 3.1.2 – Consultation, roles and responsibilities

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties		
Scoring Issue		SG 60	SG 80	SG 100
a	Roles and responsibilities			
	Guide post	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood .	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction.
	Met?	Yes	Yes	Yes
Rationale				

Functions, roles and responsibilities of entities and organizations that participate in the management process are expressly established and defined in the current fishing regulation. At national level, functions of Federal Fisheries Council are defined through the Law N° 24,922; while at provincial level, functions are described in laws and regulations established for this purpose.

Functions of Undersecretary of Fisheries and Aquaculture (SSPyA) are expressly defined in the Executive Order N° 1,030/2014; while INIDEP functions are established in Laws N° 24,922 and N° 21,673.

Stakeholders that participate in these instances are defined and their nominations are published in respective website.

Therefore, organizations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction. **So, the UoA meets with all scoring levels of performance, due all roles and responsibilities are well defined and understood for all areas.**

Consultation processes				
b	Guide post	The management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management system.	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information and explains how it is used or not used .
	Met?	Yes	Yes	No
	Rationale			

The management system considers regular consultation procedures expressly established in the Federal Fisheries Regime, for the adoption of management measures, collecting local knowledge of fishery through Provincial Fisheries Councils, Follow-up and Analysis Commission and Technical Subcommittee. Also, the CFP Resolution N° 7/2004 modified the constitution of Honorary Advisory Commission, creating two subcommittees: one of them integrated by trade union

associations and the other one by workers. This separation ensures the process of debate and opinion issuance within a framework of sectorial affinity. All opinions must be presented in writing to the CFP, regarding the issues that are submitted for its consideration. The Follow-up and Analysis Commission, in addition to meeting minutes, presents technical reports to the CFP.

The management system considers as mandatory different types of consultations to organization that participate in the management, depending on the type of measure to be adopted. The system considers the information provided. Furthermore, consultation procedures offer the opportunity and encourage stakeholders to participate effectively through different bodies/entities.

On the other hand, Secretary of Environment Policy, Climate Change, Environment and Sustainable Development regularly organizes workshops, where stakeholders, environmental institutions and NGOs have been able to discuss the impact of fishing activities on seabirds, chondrichthyans, turtles and marine mammals. National Action Plans for these species were established based on the information gathered and workshops carried out. Any information about the management system is open to stakeholders, considering points of view in the decision-making process. In the CFP, representatives of Secretary for the Environment and Sustainable Development provide conclusions of these workshops and approve action plans aimed to mitigate fishery interactions. The CFP's actions include provisions and resolutions that are mandatory for all fishers/fishing companies that operate in Argentine waters.

Therefore, the management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. **Therefore, the SG60 and SG80 levels are met.**

However, it is unknown if there is an established management system that demonstrates consideration of the information and explains how it is used or not used. **Therefore, the SG100 level is not met.**

c	Participation			
	Guide post		The consultation process provides opportunity for all interested and affected parties to be involved.	The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement.
	Met?		Yes	Yes
Rationale				

The consultation process established by Law N° 24,922 and different instances created for this purpose give the opportunity for stakeholders to participate and facilitate effective participation. In several fisheries, commissions for analysis and monitoring have been established. In the case of the fishery under assessment, the Federal Fisheries Council, in the Act N° 23/2003, unanimously decided, among other matters, to establish an Analysis and Monitoring Committee for Argentine shrimp fishery. The objectives of this committee were established as follows: i) to gather all available information regarding the species and its exploitation; ii) to study and provide an opinion on the control and monitoring system for the fishing fleet operating in the area; iii) to analyse the available information and provide an opinion on the advisability of opening or closing fishing zones for exploitation; iv) to analyse the level of compliance with current regulations related to the fishery and suggest measures to optimize them; v) the National Directorate of Fisheries and Aquaculture (DNPYA) will regulate the operation of this committee. Also, the Federal Fisheries Council takes notes of meetings conducted by the follow-up committee according SSP N° 188-2003.

The Analysis and Monitoring Committee which are consulted by the CFP and SSPYA before making any decision on the respective fishery. These commissions are formed by the Enforcement Authority, Ministry of Foreign Affairs and Worship, INIDEP, provinces and fishing companies involved in the fishery. These commissions have an advisory nature and meet at least twice a year, preparing minutes with issues discussed and submitting their conclusions to the CFP.

During the stakeholder meetings conducted in the full assessment framework, the following meeting acts of follow-up committee were provided to OIA: Act N° 8 (May 3, 2023) and their relevant annexes; Act N° 9 (May 17, 2024) and annexes; and the Act N° 10 (August 16, 2024) and annexes.

Additionally, there are technical subcommittees within fisheries analysis and monitoring commissions, where INIDEP, technicians and researchers of different jurisdictions participate.

The Honorary Advisory Subcommittees are also consulted by the CFP and are integrated by trade unions and workers, who must present their opinions in writing to the CFP for its consideration.

The consultation process provides opportunity and encouragement for all interested and affected parties to be involved and facilitates their effective engagement. **Therefore, the SG80 and SG100 levels are met.**

Overall Performance Indicator score	95
Condition number (if relevant)	N/A

PI 3.1.3 – Long term objectives

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Fisheries Standard, and incorporates the precautionary approach		
Scoring Issue		SG 60	SG 80	SG 100
a	Objectives			
	Guide post	Long-term objectives to guide decision-making, consistent with the MSC Fisheries Standard and the precautionary approach, are implicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC Fisheries Standard and the precautionary approach are explicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC Fisheries Standard and the precautionary approach, are explicit within and required by management policy.
	Met?	Yes	Yes	Yes
Rationale				

Argentine fisheries management has a robust legislative base. The clear long-term objective that guides decision-making process is consistent with MSC Principles and Criteria. The precautionary approach is explicit in the Law N° 24,922 and required by management policy.

The Article 1° of Federal Fisheries Law N° 24,922 establishes that Argentina will promote the exercise of maritime fishing in pursuit of the maximum development compatible with the rational use of marine living resources. It will promote the effective protection of national interests related to fishing and will promote the sustainability of fishing activity, fostering the long-term conservation of resources, favouring the development of industrial environmentally appropriate processes that promote the maximum added value and employment of Argentine labour.

Relating to conservation and management of marine resources, the Article 8° of the Executive Order N° 748/1999 defines the Maximum Sustainable Yield (MSY) of a species as the maximum volume that can be caught annually without affecting its conservation. The Total Allowable Catch (TAC) of a species is the maximum volume that can be caught annually set by Federal Fisheries Council based in the MSY and in social-economic considerations. TAC may be reviewed based on the stock status.

The objectives are explicitly stated. **Therefore, the SG60 and SG80 levels are met.**

Clear long-term objectives that guide decision-making, consistent with MSC Fisheries Standard and the precautionary approach, are explicit within and required by management policy. **Therefore, the SG100 level is met.**

Overall Performance Indicator score	100
Condition number (if relevant)	N/A

PI 3.2.1 – Fishery-specific objectives

PI 3.2.1 The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2				
Scoring Issue		SG 60	SG 80	SG 100
a	Objectives			
	Guide post	Objectives , which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are implicit within the fishery-specific management system.	Short and long-term objectives , which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.	Well defined and measurable short and long-term objectives , which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.
	Met?	Yes	Yes	No
Rationale				

The Federal Fisheries Council unanimously approved the specific objectives for the shrimp fishery within the framework of the Fishery Management Plan currently under development through the CFP Act N° 27/2024. The general objective of the shrimp fishery is to 'establish an institutional framework for the sustainable management of the shrimp fishery, seeking its maximum development compatible with the rationale use of the resource through an ecosystem approach that allows the continuity of socioeconomic activity over time and the minimization of impacts on the environment, in a space of dialogue between the actors involved'. In addition, the following operational objectives were established:

-Objectives of biological and ecological dimension: a) ensure the sustainability of the shrimp population; b) mitigate the potential negative impacts of the fishery on the several components of the ecosystem; and c) minimize mortality and discards of non-target species.

-Objectives of economic and social dimension: a) ensure the economic sustainability of the fishery; and b) ensure the greatest employment of labour compatible with the sustainability of the fishery.

-Objective of institutional dimension: a) articulate, integrate and make compatible the management measures between the jurisdictions with competence in the different areas in which the fishery is developed; and b) guarantee the participation of the fishery actors in the design and monitoring of the PMEEP.

Also, the main lines of actions for each objective were established.

Considering the above, it is estimated that there are clear long-term objectives that are explicitly expressed that guide decision-making to achieve the results expressed in Principles 1 and 2 in a manner consistent with the standard. The following measures are established for the fishery (more details are provided in the background): closed period; catch access; limit harvesting; fishing effort monitoring; fishing gear characterization and selectivity; fishing gear selectivity; fishing effort regulation; quality and freshness of products; and research developments that include monitoring of target species and bycatch species. **Therefore, the SG60 and SG80 levels are met.**

However, the fishery's objectives are not measurable. **So, the SG100 level is not met.**

Overall Performance Indicator score	80
Condition number (if relevant)	N/A

PI 3.2.2 – Decision-making processes

PI 3.2.2 The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery				
Scoring Issue		SG 60	SG 80	SG 100
a	Decision-making processes			
	Guide Post	There are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	
	Met?	Yes	Yes	

Rationale

In the adoption of management measures for the shrimp fishery, the precautionary approach is considered, and decisions are based on the best scientific information available. In accordance with the CFP Resolution N° 9/2022, INIDEP is responsible for evaluating the fishery annually through the development of three research campaigns of the different aspects of the situation of the fishery. Also, prior to the start of the season, the CFP requests to INIDEP a survey of the fishery with the participation of commercial vessels, in which it verifies the presence of shrimp concentrations, the size structure and the relationship between hake and shrimp to adopt management measures.

In the decision-making process, the CFP considers the information provided by the Benthic Crustacean Fisheries Monitoring and Analysis Commission, which has an advisory nature and meets at least twice a year and delivers its recommendations in writing. It is important to highlight that the CFP for the establishment of Resolution N° 7/2018, which establishes the regulatory system for the shrimp fishery, developed various workshops both with INIDEP and with the agents that participate in the activity at the Provincial level between 2015 and 2018. **Therefore, the SG60 and SG80 levels are met.**

b	Responsiveness of decision-making processes			
	Guide Post	Decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to all issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
	Met?	Yes	Yes	No
Rationale				

To adopt management measures in this fishery, INIDEP carries out three research campaigns a year addressed to the target species and its accompanying fauna. In March, campaigns are conducted to determine biology aspects of shrimp (*i.e.* remaining reproduction) and the beginning of the fishing season; in July, assessments are addressed to pre-recruits and recruits; and, in November to monitor the reproductive process. In addition, prior to the authorization of shrimp fishing, the Federal Fisheries Council requests to INIDEP to carry out a survey to verify the presence and concentrations of shrimp, the size structure and the relationship between the presence of hake and shrimp, including relevant information for making the decision on whether to open shrimp harvesting zones or subzones. In addition and considering that hake is also distributed within the shrimp fishing area, the Ministry of Agriculture, Livestock, Fisheries and Food, through Resolution N° 265 of 2000, established a permanent closed area for trawling for the protection of juvenile hake populations. This was ratified, among other measures for the hake fishery according to the CFP Resolutions N° 26/2009 and N° 9/2014.

Argentina has established the National Plan for the Conservation and Management of Chondrichthyans; the National Plan to reduce the interaction with Marine Mammals and the National Plan to reduce the interaction with Seabirds. However, there is not enough information to evaluate the interaction of the fishery under assessment.

Consistent with the above, the team estimates that the decision-making processes respond to the serious and other important issues of the fishery, identified in the investigations and monitoring. **Therefore, the SG60 and SG80 levels are met.**

Although, there are measures to reduce the interaction of the fishery with chondrichthyans, seabirds and marine mammals, there is not enough information to know if these are being implemented successfully. **Therefore, the SG100 level is not met.**

c	Use of precautionary approach			
	Guide Post		Decision-making processes use the precautionary approach and are based on best available information.	
	Met?		Yes	
Rationale				

The Law N° 25,675 that establishes the Environmental Policy was promulgated in November 2002. In its Article 1° states the minimum budgets for achieving sustainable and adequate management of the environment, preservation and biological diversity and the implementation of sustainable development. Also, in the Article 3° indicates the scope of its application in the entire territory of the Nation. Meanwhile, in its Article 4°, various principles are established that must be complied precautionary approach, indicating that *"when there is a danger of serious or irreversible damage, the absence of information or scientific certainty should not be used as a reason to postpone the adoption of cost-effective measures to prevent environmental degradation"*, and the sustainable criteria, indicating that *"economic and social development and the use of natural resources should be carried out through appropriate management of the environment, in such a way that it does not compromise the possibilities of present and future generations"*.

Furthermore, when the presence of shrimp sizes L4, L5, and L6 in a catch exceeding 20% in a zone or subzone for 4 consecutive days is verified, the zone or subzone is closed (CFP Act N° 19/2019). In addition to the above, INIDEP analyses the shrimp fishing zone access, verifying the presence of shrimp sizes L1 to L3 at 80% or more and the ratio of hake to shrimp at up to 20% (CFP Resolution N° 9/2022). **Therefore, the SG80 level is met.**

d	Accountability and transparency of management system and decision-making process			
	Guide Post	Some information on the fishery's performance and management action is generally available on request to stakeholders.	Information on the fishery's performance and management action is available on request , and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	Formal reporting to all interested stakeholders provides comprehensive information on the fishery's performance and management actions and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
	Met?	Yes	Yes	Yes
Rationale				

The information on the performance of the fishery and management measures, including the decisions of the consultation processes, are available to interested parties and the public on the website of the Federal Fisheries Council through the Acts and Resolutions. For example, the main regulations for the Argentine red shrimp fishery (*Pleoticus muelleri*) are contained in the CFP Resolution N° 7/2018 ([https://cfp.gob.ar/resoluciones/Resolucion%207%20\(17-05-18\)%20Medidas%20de%20administracion%20langostino.pdf](https://cfp.gob.ar/resoluciones/Resolucion%207%20(17-05-18)%20Medidas%20de%20administracion%20langostino.pdf)) and its main modifications in the CFP Resolution N° 9/2022 ([https://cfp.gob.ar/resoluciones/Resolucion%209%20\(9-06-22\)%20Modificacion%20medidas%20manejo%20langostino.pdf](https://cfp.gob.ar/resoluciones/Resolucion%209%20(9-06-22)%20Modificacion%20medidas%20manejo%20langostino.pdf)).

The Undersecretary of Fisheries and Aquaculture periodically publish on its website the landings made by the shrimp fleet (https://www.magyp.gob.ar/sitio/areas/pesca_maritima/desembarques/) according to volumes, species and fleet; and, the INIDEP publishes the results of the investigations carried out on its website.

In accordance with the established procedures and through the Analysis and Follow-up Commission, the interested and affected parties participate and become aware of the steps that the authority is carrying out and, in those instances, as well as in the CFP, they can present the different problems that their judgment could be generated within the fishery. A comprehensive information is provided to all interested stakeholders on the fishery's performance and management actions. The following acts from CFP are provided as evidence:

-The CFP Act N° 5/2024 provides a summary of the discussions held during the first meeting of the follow-up commission of the Argentine red shrimp fishery. The meeting covered general aspects of the fishery and its management measures, the trend in landings from 2021 to 2023, preliminary data for 2024, and an analysis of international trade in shrimp products and their export destinations. Also, INIDEP presented the results of its spring 2023 and autumn 2024 assessment

surveys, confirming that the San Jorge Gulf remains the main spawning and recruitment area. Information on incidental catches of Argentine red shrimp in the hake fishery and incidental catches of hake in the under-assessment fishery was presented for 2023. The results of selectivity experiences conducted on-board the commercial fleet during 2022 and 2023 were also presented (<https://cfp.gob.ar/actas/ACTA%20CFP%205-2024.pdf>).

-The CFP Act N° 12/2024 describes a INIDEP's technical report detailing the incidental catch of hake by the Argentine shrimp fishing fleet between March 27 and July 28, 2024, including information on the total catch and noting that the hake bycatch was 8% lower than in the same period of 2023. The report also provides information on the size of the shrimp caught in different areas, emphasizing that in no area did the percentage of juvenile shrimp caught exceed the established 20% limit (<https://cfp.gob.ar/actas/ACTA%20CFP%2012-2024.pdf>).

-The CFP Act N° 14/2024 records the second meeting of the follow-up commission of the Argentine red shrimp fishery, which included data on the trend in landings and exports as of August 13, 2024. Preliminary results from the July survey of pre-recruit and juveniles of shrimp were also presented, indicating recruitment levels similar to those of 2021. Additionally, preliminary results from a size-structured assessment model were presented, showing that a significant portion of the spawning stock is protected by the established spatial restrictions. (<https://cfp.gob.ar/actas/ACTA%20CFP%2014-2024.pdf>).

Consistent with the foregoing, **all scoring levels are met.**

e	Approach to disputes			
	Guide post	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or fishery acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
	Met?	Yes	Yes	No
Rationale				

The management system between federal and provincial levels of the shrimp fishery acts in a manner to avoid legal disputes and promptly implement judicial decisions arising from legal challenges. To minimize legal disputes, any decision by the administration that affects the rights of third parties requires control and a legal opinion before being sanctioned. The Argentine National Constitution establishes that judicial decisions are binding for any authority of the administrative system and must be implemented immediately.

Considering the characteristics and functions of the Federal Fisheries Council, in addition to being the main regulator of fishing activity, it constitutes an instance that allows preventing disputes or conflicts between users and the regulator, through the analysis and response to the requests of the administered. As an example, in the CFP Act N° 3/2021 notes, regarding the harvesting of shrimp in national waters, Fisheries Chamber 'CAPECA' requested that the suspension of dispatch for shrimp fishing be lifted, which the CFP is acknowledge and it is unanimously adopted to carry out a shrimp survey in waters under national jurisdiction in accordance with the guidelines established therein. Subsequently, in the CFP Act N° 6/2021, a note from CAPIP requesting the lifting of the suspension of dispatch for shrimp fishing is acknowledged. In the CFP Act N° 7 of 2021, considering what was stated in the previous acts, regarding shrimp prospecting, after consulting with INIDEP, it was unanimously resolved to modify the decision, providing that the area to be prospected be divided into two sub-areas that will be prospected consecutively for three days each (see more details: <https://cfp.gob.ar/actas/ACTA%20CFP%203-2021.pdf>).

It is important to mention that the minutes of the Commission for Analysis and Monitoring of the Shrimp Fishery are reported to the CFP, where representatives of the Undersecretariat of Fisheries, the Federal Fisheries Council, INIDEP and various representatives of the fishing sector participate. In this commission, the situation and problems that the shrimp fishery may present are analysed, which is brought to the consideration of the CFP. Therefore, the team considered that **the SG60 and SG80 levels are met.**

However, **the SG100 level is not met**, due it is unknown if the management system acts proactively to avoid them.

Overall Performance Indicator score	85
Condition number (if relevant)	N/A

PI 3.2.3 – Compliance and enforcement

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with		
Scoring Issue		SG 60	SG 80	SG 100
a	MCS implementation			
	Guide post	Monitoring, control and surveillance mechanisms exist, and are implemented in the fishery and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A comprehensive monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	Yes	Yes	No
Rationale				

There is a comprehensive monitoring, control and surveillance system, which has demonstrated its ability to apply strategic measures or management standards in the shrimp fishery.

The monitoring, control and surveillance system applied to the fishery called SICAP (Integrated Control System of Fishing Activities) aims to ensure the application and compliance with the management measures applicable to the fishery.

This system includes the requirement of a satellite positioning system on-board each ship, an on-board inspector, a scientific observer, air and maritime surveillance exercised by the Argentine Naval Prefecture, Navy and Air Force, to control illegal fishing, monitoring of 100% of landings, requirement to provide catch and effort information, coverage of scientific observation on-board in all vessels with protocols to monitor fishing operations. Ownerships must deliver a Landing Control Certificate in accordance with requirements stated in the Decree N° 174/2015, modified by Decree N° 78/2016 of the Undersecretary of Fisheries and Aquaculture, which incorporates this requirement into the shrimp fishery.

On the website of the Secretary of Agriculture, Livestock and Fisheries, it is available the information on the satellite positioning system of the fleet as well as on the landings reported in accordance with established procedures (https://www.magyp.gob.ar/sitio/areas/pesca_maritima/monitoreo/). For more detail of compliance, see the SI c) of PI 3.2.3, where it is provided a quantitative breakdown of the non-compliance incidents detected in the Argentine red shrimp fishery during the last 3 years, which were identified through the Monitoring Control and Surveillance System in place.

Therefore, the SG60 and SG80 levels are met.

However, there is no background to estimate that the applied system is exhaustive. **Therefore, the SG100 level is not met.**

b	Sanctions			
	Guide post	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.
	Met?	Yes	Yes	No
Rationale				

Sanctions for non-compliance with regulations established for the Argentine red shrimp fishery are described in the Article 51° of Federal Fisheries Regime, modified by Law N° 25,470 and includes the following types of sanctions depending on severity of non-compliance: warning, fines in money, suspension of registration, cancellation of registration, confiscation of fishing gear and equipment, confiscation of catch obtained in an illicit way and confiscation of vessel.

According to the Article 7° of Federal Fisheries Regime, the knowledge and established of sanctions correspond to the Enforcement Authority. However, this authority can delegate its powers to Undersecretary of Fisheries and Aquaculture according to the Article 1° of Law N° 25,470.

The procedure to substantiate the application of sanctions is established in the Article 54°*bis* of the Federal Fisheries Regime.

In addition to the sanctions for non-compliance established in Law N° 24,922, the CFP Resolution N° 7/2018, which establishes the management measures for the shrimp fishery, states in its Art. 23°, specific sanctions for the management measures such as: lack of storage in drawers in the hold, navigation with product on deck; excessive dragging speed, operation in a closed area not authorized for fishing, or fishing at prohibited hours; excess of more than 20% in the summer of the average per plastic bins of product.

According to the information provided in the following scoring aspect 3.2.3 – SI c), it can be observed that although there are non-compliances detected by the authority, the complement of said percentage of non-compliances, it is highly likely that a significant part of them correspond to compliances. **Therefore, the SG60 and SG80 levels are met.**

The definition of other requirements and conditions for the shrimp fishery are defined in the Resolution N° 171 of 2018 of the Ministry of Agriculture and Fisheries, and Decree N° 66 of 2011 of the National Directorate of Fisheries Coordination and Inspection

However, it is unknown if these sanctions are applied consistently and have demonstrated a deterrent effect. **Therefore, the SG100 level is not met.**

c	Compliance			
	Guide post	Fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.	Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	There is a high degree of confidence that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.
	Met?	Yes	No	No
Rationale				

According to the information provided by the Coordination of Analysis of Infractions and Sanctions of Ministry of Economy, the fishery under assessment has 253 non-compliances recorded during January 1st, 2021 and October 14th, 2023, being the most frequent sanctions related to fishing landing declaration. The fishers did not comply with the requirement to landing reports shall not are above 12% of fishing part declaration. This incompliance represents 29.2% of reported sanctions. Other relevant non-compliances are related to the on-board quality product, transportation bulk or boxes and freezing equipment. The total number of non-compliances for the period are presented below:

Non-compliances					
Requirement	Category	2021	2022	2023*	Total
DNCP Disp. N° 66/2011, Art. 1°	Landing reports above 12% of fishing declaration	2	10	62	74
CFP Res. N° 7/2018, Art. 19°	Trawling activities in prohibited zones	3	0	0	3
SAGPyA Res. N° 171/2018, Art. 8°, i)	Inadequate treatment to the catch on-board chilling vessels	0	9	54	63
SAGPyA Res. N° 171/2018, Art. 8°, a)	Bulk fishing	13	14	3	30
SAGPyA Res. N° 171/2018, Art. 1°, g)	Fishing activities in prohibited hours	9	14	13	36
SAGPyA Res. N° 171/2018, Art. 8°, h)	Fishing trips above 72 hours	8	13	7	28
SAGPyA Res. N° 171/2018, Art. 1°, j)	Inadequate freezing equipment	0	15	4	19
Total		35	75	143	253

(*) information provided until 14 October 2023.

According to the information related to fishing trips conducted by freezers and chilling vessels delivered by the Fisheries Planning Directorate of the Ministry of Economy to CEDEPESCA, if it is considered that the freezer vessels (68) carry out on average of the order of 10 trips per fishing season and the total non-compliance reported corresponds to 3 fishing seasons, in that period they would have made 2,040 fishing trips; while chilling vessels (33) make an average of the order of 14 trips per fishing season 1,386 fishing trips were made, it is clear that in total in the period 2021 to 2023, around

3,426 fishing trips were made by the entire shrimp fleet authorized to develop extractive activities in the area under analysis, which implies that non-compliance has been made in 7.38% of fishing trips.

So, in general terms, it can be established that although there are non-compliances, the team estimates that the fishers comply with the management system, **therefore the SG60 level is met.**

However, there is not sufficient evidence to demonstrate that the fishers comply with the SG80 level, and a condition must be raised, due the non-compliances that occur are directly related to measures established for the optimal use of the captured resources and their safety, a situation that must be improved.

d	Systematic non-compliance		
	Guide post		There is no evidence of systematic non-compliance.
	Met?		No
Rationale			

The intent of this SI is that there is simultaneously adequate evidence to assess the compliance of the fishery and no evidence of infringements that occur regularly. According to the types of non-compliances detected in the Argentine red shrimp offshore fishery detailed in the SI c), the team noted that there is enough evidence of systematic non-compliance during 2021-2023 period. Also, sanctions in the fishery increased in the last 3 years. **Therefore, the SG80 level is not met, and a condition must be raised.**

Overall Performance Indicator score	70
Condition number (if relevant)	6

PI 3.2.4 – Monitoring and management performance evaluation

PI 3.2.4		There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives There is effective and timely review of the fishery-specific management system		
Scoring Issue		SG 60	SG 80	SG 100
a	Evaluation coverage			
	Guide post	There are mechanisms in place to evaluate some parts of the fishery-specific management system.	There are mechanisms in place to evaluate key parts of the fishery-specific management system.	There are mechanisms in place to evaluate all parts of the fishery-specific management system.
	Met?	Yes	Yes	No
Rationale				

The fisheries management system has a permanent mechanism to review the evolution of the fisheries and incorporate corrective actions if necessary. The Federal Fisheries Council (CFP) annually reviews the management measures applicable to the fishery and makes modifications to the management regulations, when appropriate, considering the recommendations provided by INIDEP through technical reports and the concerns of industrialists through the Monitoring and Analysis Commission, a body in which representatives of the Province of Chubut participate, and the Honorary Advisory Commission in which worker associations and unions participate. Below are the links to the Resolutions N° 7/2018; N° 4/2019 and N° 9/2022 of the Federal Fisheries Council, in which management measures are established and modified with the participation of INIDEP reports for different management measures applicable to the Argentine red shrimp fishery, in said minutes the information provided by both INIDEP and the Analysis and Monitoring Commission of the shrimp fishery, considered for the adoption or modification of the management measures, is established in a transparent manner. For example: [https://cfp.gob.ar/resoluciones/Resolucion%207%20\(17-05-18\)%20Medidas%20de%20administracion%20langostino.pdf](https://cfp.gob.ar/resoluciones/Resolucion%207%20(17-05-18)%20Medidas%20de%20administracion%20langostino.pdf); [https://cfp.gob.ar/resoluciones/Resolucion%204%20\(23-05-19\)%20modif.%20art.%208%20Res%207-2018%20cajones%20langostino.pdf](https://cfp.gob.ar/resoluciones/Resolucion%204%20(23-05-19)%20modif.%20art.%208%20Res%207-2018%20cajones%20langostino.pdf); [https://cfp.gob.ar/resoluciones/Resolucion%209%20\(9-06-22\)%20Modificacion%20medidas%20manejo%20langostino.pdf](https://cfp.gob.ar/resoluciones/Resolucion%209%20(9-06-22)%20Modificacion%20medidas%20manejo%20langostino.pdf)

Regarding the INIDEP management system, the research that supports the fishing measures is the subject of an internal review carried out by the working group, head of the program, and then by the National Research Directorate. The Directorate of the Institute proceeds to approve it or not, and the report is delivered to the CFP and Undersecretary of Fisheries of the Nation. In some cases, the CFP asks INIDEP, when necessary, to complement or evaluate some aspect of the information presented.

The assessment of the fishing stock is subject to the same procedure. Likewise, during 2015 to 2018, at the initiative of the CFP, various workshops were held at the Federal and Provincial level to review the management measures applicable to the fishery. The CFP publishes on its website all the minutes of its meetings and the technical reports considered, as well as the decisions adopted by resolution (<https://cfp.gob.ar/actas/ANEXO%20I%20-%20ACTA%20CFP%20N%2012-2018.pdf>).

The information on the landings as well as the updated location of the vessels according to the satellite positioning system are published on the website of the Ministry of Agriculture, Livestock and Fisheries (MAGyP) for the knowledge of all interested parties.

Considering the reviewed evidence, it is estimated that all interest groups can evaluate the fundamental parts of the specific management system of the shrimp fishery. Therefore, there are mechanisms to evaluate the key parts of the specific management system of the fishery, and **the SG60 and SG80 levels are met**.

However, as the mechanisms to evaluate aspects of control and compliance are unknown, **the SG100 level is not met**.

b	Internal and/or external review			
	Guide post	The fishery-specific management system is subject to occasional internal review.	The fishery-specific management system is subject to regular internal and occasional external review.	The fishery-specific management system is subject to regular internal and external review.
	Met?	Yes	Yes	No
Rationale				

The Federal Fisheries Council periodically reviews the management system applied to fisheries. In the case of the shrimp fishery, in CFP Act N° 15/2022, it is noted that an extensive review of the management measures established for the shrimp fishery has been carried out, according to the information provided in meetings and workshops, on important issues as the contingency plan established in Art. 13° of the CFP Resolution N° 7/2018 that would be applied in the event of a hypothetical significant decline in abundance. Consensus was also reached to review various articles, which materialized through the CFP Resolution N° 9/2022.

The following internal audits were conducted to Ministry of Agriculture, Livestock and Fisheries, and the National Institute for Fisheries Research and Development (INIDEP):

-Audit Report N° 12/2020, focused on the Observer Program conducted on January 1 and December 31, 2019. The report corresponds to INIDEP Executive Report N° 12/2020. For more detail: https://www.argentina.gob.ar/sites/default/files/2021/07/12-2020_observadores_a_bordo_-_if-2020-43624606-apn-uaiinidep.pdf

-Audit Report N° 23/2020, focused on the integration and interaction with the National Fisheries Policy Enforcement Authority, 3rd quarter 2020. For more detail: https://www.argentina.gob.ar/sites/default/files/2021/07/23-20_integracion_aappn_3o_trim_2020.pdf

Likewise, there are two management system review bodies, i) The National Audit Office (AGN), a constitutional body whose objective is to verify accounting, legal and management compliance with its audit reports that include comments, conclusions and recommendations, advises the legislature in the exercise of National Public Administration and the situation of public finances, and ii) The General Comptroller's Office (*Sindicatura General de la Nación* - SIGEN), which corresponds to the governing body of the internal control system that coordinates the activities tending to ensure that the management of the national public sector achieves the objectives of the government.

Audits conducted by the General Comptroller's Office (SIGEN):

Note: The full audit reports are not available, but the SIGEN website (<https://www.sigen.gob.ar/ArchivoWeb/Buscador.aspx>) has a search tool that allows to find information about completed audits and provides a summary of each one.

-To the Secretariat of Agriculture, Livestock and Fisheries, SAGyP, whose objective was to verify the tasks of inspection of fishing activities within the scope of national jurisdiction, carried out by the National Directorate of Control and Inspection (DNCyFP of the Undersecretariat of Fisheries and Aquaculture) during 2021.

-Evaluations of the internal operations of the Secretariat of Agriculture, Livestock and Fisheries and the National Institute for Fisheries Development (INIDEP) were conducted during 2022, in accordance with the annual work plan and the basic control objectives established by SIGEN.

Other audits held by the General Audit Office of the Nation:

-Management by the Undersecretariat of Fisheries and Aquaculture and INIDEP to ensure the sustainable exploitation of the hake resource, and the role of the Argentine Naval Prefecture's fisheries patrol force. For more detail: <https://www.agn.gob.ar/sites/default/files/informes/2023-191-Informe.pdf> and <https://www.agn.gob.ar/sites/default/files/informes/2023-191-Resolucion.pdf>

-Information Technology Applications for Controlling the Maximum Allowable Catch by Species, Fishing Quotas, Issuance of Fishing Permits, and Closed Fishing Zones. Undersecretariat of Aquatic Resources and Fisheries, Secretariat of Agriculture, Livestock and Fisheries, Ministry of Economy. For more detail: <https://www.agn.gob.ar/sites/default/files/informes/2024-146-Informe.pdf>

-Management of the Fisheries Policy for the Argentine red shrimp (*Pleoticus muelleri*). Environmental Management Audit Report. For more detail: <https://www.agn.gob.ar/sites/default/files/informes/2022-042-Informe.pdf>

Consistent with the above, the specific management system of the fishery is subject to regular internal and occasional external reviews. **Therefore, the SG60 and SG80 levels are met.** As it is unknown if there are evaluations periodic external, **the SG100 level is not met.**

Overall Performance Indicator score	80
Condition number (if relevant)	N/A

11 Appendices.

11.1 Assessment information

11.1.1 Previous assessments

In 2015, a pre-assessment process was conducted by Bureau Veritas against MSC the MSC Fisheries Certification Requirements and Guidance v2.0. The gap analysis indicated that 4 performances indicators in the principles 2 and 3 (PIs 2.4.2, 2.4.3, 2.5.3 and 3.2.4) obtained a draft scoring range below SG60. Also, several performance indicators of Principle 2 were ranged as 60-79. Resulting of this preliminary assessment, the fishery failed the MSC Fishery Standard that mean had not successfully passed the certification process.

To improve these results, the Argentine onshore red shrimp – bottom trawl was subject of a FIP process. This FIP being implemented by Achernar, Arbumasa, Argenova, Buena Proa / Oceanic Seafood, Cabo Virgenes, Conarpesa, Grupo San Isidro, Direct Source, Estrella Patagonica, Food Partners Patagonia, Frigorifico del Sudeste, Iberconsa, Maritime Products International, Newsan, Panapesca USA, Pesquera Deseado, Pesquera Santa Cruz, Pesquera Veraz, Red Chambers Argentina and Wanchese Argentina as FIP Partners, with the technical support from CEDEPESCA. The FIP aims to attain a certifiable status for the fishery against the MSC Standard. The FIP had set the following specific objectives:

- Continue to promote the adoption of a contingency plan as established in Article 13° of the CFP Resolution N° 7/2018 (Management Plan), based on abundance reference points, and monitor the implementation of fishery's management plan.

- Continue to promote the adoption, in the management measures for this fishery, of explicit short- and long-term specific objectives for the fishery management, which explicitly include care for other ecosystem components.

- Follow up discussions concerning selectivity devices in the context of Bycatch Commission created by the CFP to reduce the fishery interaction with non-target species and protected, threatened or endangered species.

- Cooperate with INIDEP in carrying out an experience with a video camera on the fishing gear to be able to observe the different species behaviour and contribute to design an ecologically and economically efficient selectivity system.

- Promote the regular functioning of red shrimp fishery Follow-up Commission as an appropriate forum for proposing management measures and for self-evaluation of management and research systems.

- Promote the implementation of a peer review of the fishery assessment methodology.

- Encourage the use of protocols used by the INIDEP Observer Program to include the collection of data necessary to comply with the MSC Standard.

- Recommend to INIDEP to carry out studies that allow updating the information about the composition of the bottoms on which the fishery operates and the associated benthic communities and collect and analyse information that allows identifying the benthic communities present around operation of the fishery and to in turn know your recovery rate.

- Promote the participation of captains and crew in in the FIP development.

The target end of FIP process was December 2024.

11.2 Evaluation processes and techniques

11.2.1 Site visits

The Announcement Comment Draft Report (ACDR) was prepared as a desk-review based on public technical/scientific available information and input provided by the client group and CEDEPESCA.

During the site visit, the team will:

- conduct in-person/remote interviews to make sure that the team is aware of any concern or information that participants may have.

- allow private interviews with the team for participants who request one.

-use any information provided in private in conformity with confidentiality requirements described in section 4.3 of MSC FCP v2.3.

-apply the gathering information to conduct RBF methodology for relevant PIs.

Details of people interviewed, including local residents and representatives of stakeholder organisations are provided below.

The Client and Peer Review Draft Report (CPRDR) is a result of stakeholder interviews in-person / remotely and additional reports received during and after the site visit. The site visit was held on Capital Federal and Mar del Plata (Province of Buenos Aires), between 25th and 28th March 2025. Stakeholders were informed 60 days before the site visit and given the opportunity to provide information in advance. The following table provide a summary of entities that the team spoke during the on-site visit:

25 March 2025	26 March 2025	27 March 2025	28 March 2025
Client group and CEDEPESCA IN-PERSON	National Patagonian Center (<i>Centro Nacional Patagonico</i> – CENPAT) REMOTE	Shrimp Fishery Program and INIDEP's extension on Puerto Madryn (<i>Instituto Nacional de Investigacion y Desarrollo Pesquero</i> - INIDEP) IN-PERSON	Visit to freezer and chilling vessels by team members in Mar del Plata's Port IN-PERSON
Argentine Chamber of Fishing Vessel and Freezer Owners (<i>Camara de Armadores de Pesqueros y Congeladores de la Argentina</i> - CAPECA) and Argentine Patagonian Chamber of Fishing Industries (<i>Camara Argentina Patagonica de Industrias Pesqueras</i> - CAPIP) IN-PERSON	Private On-board Observer Program and CEDEPESCA REMOTE	Argentine hake Fishery Program (<i>Instituto Nacional de Investigacion y Desarrollo Pesquero</i> - INIDEP) IN-PERSON	Captains, Crew, Agents and Manual off-loading IN-PERSON
Undersecretary of Fisheries and Aquaculture (<i>Subsecretaria de Pesca y Acuicultura</i> - SSPyA) IN-PERSON	Federal Fisheries Council (<i>Consejo Federal Pesquero</i> – CFP) IN-PERSON	Marine Mammal and Seabird Research Groups of Marine and Coastal Research Institute (<i>Instituto de Investigacion Marina y Costera</i> – IIMyC-CONICET) IN-PERSON	Hydrobiology Research Institute of National University of Patagonia San Juan Bosco – UNPSJB REMOTE
Directorate of Fisheries Control and Inspection (<i>Direccion de Control y Fiscalizacion Pesquera</i> – DCyFP) IN-PERSON		Directorate of Planning and Management of Fisheries (<i>Direccion de Planificacion y Gestion de Pesqueras</i> – DPyGP) REMOTE	

11.2.2 Stakeholder participation

There was no stakeholder participation during the ACDR stage.

During 60 days prior to the site activities, all stakeholders were informed of the visit and the opportunity to provide advance information to the team members or to meet with them during the site visit in-person or remotely. In the fishery announcement, OIA established that only accepts stakeholder input as public record if submitted using the 'MSC Template for Stakeholder Input into Fishery Assessments' or if raised at the site visit. Stakeholders may raise issues with the team in confidence to be considered at the site visit, but any confidential information cannot be used in scoring unless in compliance with confidentiality requirements. OIA will inform to stakeholders that they must provide objective evidence and references in support of any claims or any claimed errors of fact. No written comments regarding to the Argentine red shrimp offshore fishery were received during the meetings (see section 11.4 Stakeholder input).

All the team will be present during all meetings scheduled. The following table summarizes topics discussed with each stakeholder during the different meetings:



Participants	Summary of meetings
<i>Opening meeting with Client Group, CEDEPESCA and Representatives of the fisheries chambers (CAPECA and CAPIP) 25 March 2025</i> -Nelson Jaime, Commercial Manager for IBERCONSA GROUP -Carlos Molina, General Manager for Food Partners Patagonia S.A. -Federico Alvarez, Manager for Achernar S.A.S. -Dario Baroli, External Assessor for Continental Armadores de Pesca S.A. -Maria Lujan Galvan, Manager for Moscuza e Hijos S.A. -Gustavo Casanova, CEO for Arbumasa S.A. -Pablo Milletari, Lawyer for Argenova S.A. -Ernesto Goldeman, CEDEPESCA, Executive Director -Elba Brunetti, CEDEPESCA, Director -Gabriela Mclean, CEDEPESCA, Deputy Executive Director -Agustin De la Fuente, President for CAPIP -Eduardo Boieo, President for CAPECA -Alejandro Costa, Management Assistant for CAPECA -Pedro Landa, Fishery Team Leader -Pedro De Carli, Fishery Team Member (P1) -Denise Bore, Fishery Team Member (P2) -Edith Saa Collantes, Fishery Team Member (P3) -Karelys Ruiz, MSC Program Assistant for OIA	A brief presentation was given outlining the purpose of the site visit, the composition of the evaluation team, and the preliminary score for each indicator. Additionally, the indicators to which the RBF methodology would be applied were identified. Regarding the preliminary results for Principle 1, it was stated that the sub-component with the greatest impact on the shrimp fishery is the size of the population. Furthermore, it was noted that the "density-dependence" productivity attribute received the highest score (high risk = 3) because there was insufficient information available to assess the Allee effect on the shrimp population. Based on fishing effort data from 2005, the resource was able to recover, demonstrating that there is no cascading effect when the population density is low. Regarding the most recent fishing season, the stakeholder group stated that the size of the shrimp improved, with greater abundance and a larger average commercial size observed. Additionally, they indicated that in areas where smaller shrimp sizes had previously been recorded, larger sizes were observed during the last season. It was reported that in the hake fishery, shrimp are caught as bycatch. Therefore, it is requested that this component be included in the RBF assessment as a fourth factor affecting the shrimp stock, even though its volume is already included in the national fisheries landing statistics. On some occasions, the bycatch volume is high, making it difficult to determine whether the fleet (both freezer and chilling vessels) targeted shrimp or hake. Work is underway to improve this data collection to allow for this differentiation. It is worth noting that the latest INIDEP Technical Report N° 6/2025 shows a 25.39% increase in biomass compared to 2023. Regarding Principle 2, the team states that for indicator 2.2.1 (impact on bycatch species), only the bird species that typically interact with the fishery during the discarding of unwanted catch were assessed. According to information provided by independent observers from CEDEPESCA, there was no direct impact on birds; that is, no mortality was recorded due to the fishing gear, entanglement, or other factors. However, they explain that a risk assessment was used for this evaluation because the population status or biological limits of these species are unknown. It was noted that the black-headed gull is the most common species along the coast, with a widespread population. However, in the fisheries within national waters, the dominant species is the black-browed albatross (<i>Thalassarche melanophris</i>), which, being a protected species, has been included in the ETP species list for the assessment process. Regarding indicator 2.4.1, on the status of the habitat, there is no recent information available on the recovery of species impacted by the bottom trawling fishery. Due to the lack of updated information, the team decided to apply spatial impact analysis to assess the status of the habitat affected by the fishery. In this regard, the assessment team emphasized the need to gather more information during the site visit regarding the benthic communities, particularly concerning the regeneration of the seabed biota.



	Regarding the environmental impact, the team inquired whether the trawl net touches the seabed (potentially disturbing it). The client group explained that the net operates above the seabed, and that the trawl doors, which are in constant contact with the seabed, would have a greater impact. The team also discussed alternative measures and the use of deterrent lines (scarelines). The client group indicated that deterrent lines are not used when targeting shrimp, unlike in the hake fishery, where they are used by freezer vessels. Regarding Principle 3, the team proposed establishing two conditions. The first would relate to indicator 3.2.1, where the specific objectives of the fishery are not explicitly stated. The client group indicated that the Federal Fisheries Council had recently established the objectives through a resolution and mentioned that the Monitoring Committee is currently working on developing a management plan for the fishery. The second condition would relate to fleet compliance. It was noted that there is no evidence of penalties imposed between October 2023 and December 2024. The client group stated that there are no violations for carrying boxes weighing more than 17 kg, as this is standard practice.
<i>Meeting with Undersecretary of Fisheries and Aquaculture (Subsecretaria de Pesca y Acuicultura - SSPyA) 25 March 2025</i>	During the meeting, the team inquired about the bycatch of hake shrimp in the common hake fishery, given that its value exceeds 20% of the total catch, and whether this percentage is included in the landing statistics. The authority indicated that the hake shrimp population is growing in the northern area where the hake fishing fleet operates, which explains why shrimp are frequently caught as bycatch. However, regulations stipulate that vessels are only allowed to land 20% of their total catch as shrimp bycatch. The volume of hake shrimp landed as incidental catch has increased, due to the growing biomass of the resource resulting from the management measures implemented, exceeding historical levels. Considering this, the team asked whether vessels are exceeding the permitted 20% limit for shrimp bycatch. The Secretary stated that this limit should not be exceeded, but if it is, the National Institute for Fisheries Research and Development (INIDEP) must intervene, recommending either closure of the fishing area or termination of the fishing season.
-Dr. Juan Lopez Cazorla, Head of Undersecretary -Dr. Arturo Idoyaga Molina, National Director of Directorate of Fisheries Control and Inspection -Pedro Landa, Fishery Team Leader -Pedro De Carli, Fishery Team Member (P1) -Denise Bore, Fishery Team Member (P2) -Edith Saa Collantes, Fishery Team Member (P3) -Karelys Ruiz, MSC Program Assistant for OIA	The team pointed out the lack of evidence regarding the effectiveness of the bird-scaring lines, which the CFP has mandated for all bottom trawlers engaged in freezing operations. It was noted that if there are records of interactions with birds, the CFP may review the measure and enforce its use. The Secretary mentioned that sometimes measures are implemented, and vessel owners then request exemptions, which must be supported by evidence, such as data from onboard observers. If the data is valid, the exemption is granted. Regarding best practices onboard, the discussion focused on how crew members should handle the release of live birds, mammals, and sharks. The authority stated that crew members must be trained to ensure the proper handling of these non-target species. Regarding the specific objectives of the fishery, it was mentioned that the stakeholder group had indicated that these objectives had been clearly defined and outlined. Furthermore, it was stated that work is underway to develop the management plan based on these guidelines.



	Inquiries were made regarding non-compliance issues, noting that there had been an increase in violations between 2021 and 2023, and the authority was requested to share the penalties imposed in 2024. It was also mentioned that different fishing practices had been observed during the last two management periods. To maintain the quality of fresh shrimp, a standard weight of 17 kg per crate was established. Regarding cooperation with other institutions, it was highlighted that the FAO provided tablets to improve the work of the inspectors, enhancing control and enforcement in fisheries management. Currently, work is underway to implement their use. A report will be generated, including photos and videos of the fish species, as well as the inspector's geolocation data. Finally, the Secretary emphasized that more observers will be hired and that they will receive training not only on the fish species themselves, but also on the ecosystem. He also mentioned that peer review processes are being implemented during his tenure.
<i>Meeting with the Directorate of Fisheries Control and Inspection (Direccion de Control y Fiscalizacion Pesquera – DCyFP) 25 March 2025</i>	The team inquired about the control of the use of bird-scaring lines. While there have been no reported mortalities of the main target species, there have been reports of deaths among protected species, such as the black-browed albatross and Magellan penguin. The agency stated that inspectors are on-board the vessels to monitor the use of the bird-scaring lines. However, there is no precise data on which species of birds have been sighted, or which ones have died. It was emphasized that freezer trawlers and fresh fish trawlers are required to use these lines, and that disciplinary actions have been taken regarding this requirement. The team also inquired about the issue of lost fishing gear and the phenomenon of ghost fishing. The agency explained that the nets are generally recovered, and that they are marked and identified with a unique code for each company, which allows them to determine which company lost the gear. Regarding discards, it was stated that they are zero (0), and if any discards occur on-board the vessel, the inspector will issue a report, which will subsequently lead to a violation being recorded. Regarding Principle 3, the violations that occurred in recent years were detailed, showing a slight increase from 2021 to October 2023. These penalties were associated with the improper handling of shrimp on-board, trawling in closed areas, overfishing, fishing during prohibited hours, and exceeding the 72-hour limit for holding live shrimp at sea. The enforcement team also mentioned that the frequency of monitoring and inspections has increased. This resulted in improved conditions for the delivery of fresh shrimp to port starting in 2022, and by 2023, a structured and coordinated system was in place. The team emphasized the need for information regarding non-compliance cases in 2023 and 2024. Additionally, regarding the non-compliance reports provided by the client group, there is no information available on which of these cases resulted in penalties. The control system is implemented at all unloading points, meaning that all authorized ports have weighing scales. Furthermore, it was noted that while it is possible for the weight of the crates to exceed
-Cecilia Moreno, Director -Juan Pablo Scuto, Administrative -Maria Belen Moreno, Technical Assessor -Fernando Moffori, Technical Assessor -Maria Isabel Molina, Responsible -Pedro Landa, Fishery Team Leader -Pedro De Carli, Fishery Team Member (P1) -Denise Bore, Fishery Team Member (P2) -Edith Saa Collantes, Fishery Team Member (P3) -Karelys Ruiz, MSC Program Assistant for OIA	



	the permitted 17kg, this generally only occurs at the beginning of the season, and once penalties are imposed, the ship owners usually adjust the weight accordingly. Finally, it was mentioned that there may be landings of hake bycatch (specifically, juvenile hake) during March and April outside the closed area for juvenile hake, by vessels that operate in the hake fishery.
<i>Meeting with the National Patagonian Centre (CENPAT)</i> 26 March 2025	It was reviewed with the expert the marine mammal species involved in the fishery under assessment. It was clarified that there are no updated studies related with indirect effect of Argentine red shrimp fishery with this group. However, there are frequent campaigns to address the population status in coastal areas.
-Dra Silvana Dans, CENPAT's researcher -Pedro Landa, Fishery Team Leader -Pedro De Carli, Fishery Team Member (P1) -Denise Bore, Fishery Team Member (P2) -Edith Saa Collantes, Fishery Team Member (P3) -Karelys Ruiz, MSC Program Assistant for OIA	
<i>Meeting with Private On-board Observer Program and CEDEPESCA</i> 26 March 2025	Previously to start with the monitoring on-board, all observers involved was trained by expert according to correctly apply a protocol and identify species that are incidental catches by the fishery under assessment. Quantitative information is recorded in forms. This information is contracted with INIDEP's on-board observer program to have similar results. After each fishing season, POAB provides a monitoring reports with information collected.
-Biol. Mayra Palacios, POAB Coordinator, CEDEPESCA -Jose Antillanca, On-board Observer -Marcos Ferrero, On-board Observer -Pedro Landa, Fishery Team Leader -Pedro De Carli, Fishery Team Member (P1) -Denise Bore, Fishery Team Member (P2) -Edith Saa Collantes, Fishery Team Member (P3) -Karelys Ruiz, MSC Program Assistant for OIA	
<i>Meeting with the Federal Fisheries Council (CFP)</i> 26 March 2025	Inquiries were made regarding the status of the ban on trawling in the San Jorge Gulf, and whether it is still in effect. One of the representatives from the Province of Santa Cruz stated that a permanent fishing ban has been in place in the Mazarredo area (southern part of the San Jorge Gulf) since the 1980s, on the Santa Cruz side of the coastline, because that area was identified as a shrimp breeding ground. The province operates with a system of rotating fishing closures, allowing fishing activities in areas that are otherwise closed. Based on the volume of catches, the authorities decide whether to open or close specific fishing zones. In the case of shrimp, there is a non-fishing agreement between
-Vet. Juan Antonio Lopez Cazorla, Head of Undersecretary of Fisheries and Aquaculture	



-Dr. Julia Mantinian, Representative of the Chief of Staff of Ministers -Eng. Ricardo Ancell Patterson, Representative of the Province of Santa Cruz -Dr. Arturo Idoyaga Molina, National Director of Directorate of Fisheries Control and Inspection -Lic. Paola Gucioni, Representative of the Ministry of Foreign Affairs, International Trade and Worship -Lic. Carla Estefania Seain, Representative of the Province of Buenos Aires -Dr. Carlos Damian Liberman, Representative of the Province of Buenos Aires -Eng. Gustavo Ernesto Martinez, Representative of the Province of Santa Cruz -Tec. Fernando Carlos Marcos, Representative of the Province of Santa Cruz -Dr. Sergio Edgardo Paleo, Representative of the Province of Rio Negro -Dr. Javier Rodriguez, Representative of the Province of Buenos Aires -Lic. Karina Daniela Fernandez, Representative of Province of Tierra del Fuego, Antarctica and South Atlantic Islands. -Lic. Karina Sola Torino, CFP's Institutional Coordinator. -Dr. Alejo Toranzo, CFP's Legal Assessor -Pedro Landa, Fishery Team Leader -Pedro De Carli, Fishery Team Member (P1) -Denise Bore, Fishery Team Member (P2) -Edith Saa Collantes, Fishery Team Member (P3) -Karelys Ruiz, MSC Program Assistant for OIA	the Provinces of Chubut and Santa Cruz to allow juvenile shrimp to grow to a larger size, and to allow for greater harvests of commercially sized shrimp outside of provincial waters. In line with the recent establishment of specific objectives for the shrimp fishery, the CFP stated that these objectives are clearly outlined in Resolution N° 27/2024, which is available on the Council's website. The CFP reiterated its request to the regulatory authority to provide information on any non-compliance cases that occurred between October 2023 and December 2024, as the Council's records only contain information up to 2023. The CFP explained that the increase in penalties is due to the product's sanitary conditions, and therefore, it suggests that companies should implement improvements to their quality control systems to reduce such violations.



<i>Meeting with Shrimp Fishery Program and INIDEP's extension on Puerto Madryn (Instituto Nacional de Investigacion y Desarrollo Pesquero - INIDEP)</i> 27 March 2025	Regarding indicator 1.1.1, it was stated that, given the lack of evidence regarding density-dependent effects on resource productivity, it was initially assigned a high-risk rating, since the Allee effect in this population has not been demonstrated. In this context, INIDEP researchers stated that, although a specific model is lacking, the historical series of catch data (and abundance estimates) shows that the population can recover, as occurred in 2005 when catches were 7,500 tons, increasing to 42,000 tons the following year. This recovery may have been due to the fact that the recruitment cohort was not heavily fished, and therefore, the population was able to recover and maintain its numbers. It was emphasized that the shrimp is a highly productive resource, because even at low densities, it has shown the ability to recover; therefore, they do not agree with the high-risk rating assigned to a resource of this type. Fisheries reports indicate that rapid recovery occurs when appropriate management measures are in place. Regarding the resource's distribution area, it was stated that it is much larger than previously indicated, and that the overlap area can vary because the distribution of the species is not consistent from year to year. In other words, the species may concentrate in one area and not be present in others, which could be related to areas that are surveyed but ultimately not opened for fishing. They emphasized that both the inshore and offshore fisheries have a very large buffer zone, and that this zone is not open for exploitation. On the other hand, the researchers are evaluating the possibility of including shrimp catches as bycatch in the hake fishery. Additionally, they were asked if they were aware of any other fishery that had shrimp as bycatch, to which they replied that there is an area north of 41°S where the hake fishing fleet has a limit on shrimp bycatch (20%), representing a small volume, and that this is included in the total catch and statistical data. During the discussion, the researchers emphasized that there are no studies on the selectivity of the fishing gear with respect to the juvenile portion of the population, but the issue of selectivity in the fishery was addressed. They clarified that these two concepts are not equivalent, since a fishing gear may not be selective in technical terms, but management measures—such as rotating fishing closures and spatial or temporal restrictions—limit access to the juvenile portion of the stock, thus creating operational selectivity at the fishery level. During the 2024 fishing season in national waters, only 5.7% of the catch consisted of juveniles. When asked whether this approach had been considered in the presented analysis, the evaluation team responded that they would consider incorporating it, although they clarified that this aspect is already addressed by another indicator currently in use. In this case, the analysis focused exclusively on the selectivity of the fishing gear itself. In summary, it was emphasized that, while selective fishing gear alone has not proven to be sufficiently effective, management based on spatial selectivity—through measures such as mobile closures—has shown good results in terms of protecting juvenile fish. Similarly, researchers from INIDEP stressed that, although the selectivity devices currently in use do not address the current status of the resource, the use of effective management measures limits the capture of hake, the main bycatch species.



	Regarding post-capture mortality, it was stated that there is no fishing-related mortality that could affect the population under the current management scheme and measures, highlighting the importance of resource conservation and the establishment of the buffer zone. Finally in relation with fishing control measures, since there are two distinct jurisdictions—the national government and the Province of Chubut—while a national fishing control measure can be proposed and adopted by the Federal Fisheries Council, it cannot be imposed on Chubut, as the province may have its own fishing control regulations, but the overall effect must be the same.
<i>Meeting with Argentine hake Fishery Program (Instituto Nacional de Investigacion y Desarrollo Pesquero - INIDEP) 27 March 2025</i> -Lic. Gabriela Irusta, Head of Argentine hake fishery Program. -Lic. Maria Fernanda Villarino, Scientific Researcher -Lic. Betina Santos, Scientific Researcher -Jorge Colonello, Head of Chondrichthyan Fisheries Program -Lic. Jose Luis Flaminio, Head of On-board Observer Program -Martin Bertello, Chief of Operations -Pedro Landa, Fishery Team Leader -Pedro De Carli, Fishery Team Member (P1) -Denise Bore, Fishery Team Member (P2) -Edith Saa Collantes, Fishery Team Member (P3) -Karelys Ruiz, MSC Program Assistant for OIA	INIDEP's researchers pointed out that the fishing unit seeking certification operates primarily within the Permanent Hake Juvenile Closed Area (AVPJM), which serves to concentrate and protect juvenile and adult hake during their breeding season, and is considered one of the most important management tools for the hake fishery. Each year, the biologically acceptable catch (BAC) limit for hake south of 41°S is determined based on a projected amount of hake bycatch that should not be exceeded in the shrimp fishery south of 41°S. In this way, the bycatch level associated with the BAC for hake is the one that allows for the achievement of the resource recovery objectives. Additionally, the researchers indicate that there is a high level of observer coverage on the hake fishing fleet, but not all data on bycatch species is being digitized. The collected data is currently being organized and categorized. Despite this, it was noted that, according to the available information, the amount of bycatch is low, except for hake. Regarding seabirds observed during fishing operations, no incidents of entanglement in fishing gear or mortalities were reported. However, the importance of knowing the presence of seabirds when vessels are operating was emphasized, noting that the most common species are the black-browed albatross and the storm petrel, and occasionally the sooty shearwater, the tern, and the black-backed gull when closer to the coast. Studies have been conducted, and devices have been used to improve the selectivity of the fishing gear for hake, but these are not currently implemented because, given the current status of the resource, they would not be effective. Furthermore, the fishing sub-areas within the AVPJM are opened or closed depending on the value of the ratio between hake and shrimp catches (M/L). This value must not exceed 0.20. On the other hand, INIDEP researchers inquired about the management approach for king crab as a secondary species, given that a king crab breeding area overlaps with the high-yield area of the Patagonian red shrimp fishery in Central Patagonia, although it is acknowledged that the amount of king crab caught is very low. The team responded that king crab was considered a minor species because its bycatch volume does not exceed 5%. Additionally, the researchers from INIDEP raised the question of why the hake was not considered an ETP species, given that, although Argentina does not have a list of ETPs, the management plans indicate that it is a species that needs protection and for which a recovery plan exists. In response to this inquiry, the assessment team explained that to be considered an ETP, a species must meet the criteria established by the MSC, either through national legislation or by being listed in an international agreement that provides protection.

	Regarding the impact of the fishery on the seabed, INIDEP emphasized that it is not possible to compare the effect before and after fishing operations, but a comparison can be made between fishing and non-fishing areas. They also indicated that they are working on a survey or monitoring plan for the area where the inshore fishing fleet operates, as requested in the inshore shrimp fishery action plan. It was stated that spatial overlap refers to the extent to which the assessment area overlaps with the habitat. In this assessment, a value of less than 30% was considered. In response, INIDEP (National Institute for Fisheries Research and Development) indicated that the entire fishing operation area impacts the seabed. The characteristics of the seabed are much broader than the spatial distribution of where the fishing fleet operates. However, if all the bottom trawling fisheries in the area that operate on the same seabed are considered together, the overlap exceeds 30%. Despite the impact of bottom trawling, it can be concluded that the seabed is in a healthy condition. Regarding the situation described under Principle 3 concerning the increase in non-compliance in 2023, it was explained that this could be due to increased enforcement efforts, with more inspectors present in port during unloading operations.
<i>Meeting with the Seabird and Marine Mammals Groups of IIMyC-CONICET (National University of Mar del Plata)</i> 27 March 2025	Interactions between seabirds and the shrimp fishery are very low in terms of incidental mortality. Among the main associated seabird species, it was noted that the laughing gull may occur in federal waters, as it is a more coastal species, but it has few interactions with the fishery, and no incidental mortality has been recorded. Likewise, the scores of the other main associated seabird species evaluated under the RBF risk assessment were analysed. It was pointed out that the sooty shearwater is an abundant species in national waters, with a high association with the fishery. Due to its small size, it cannot consume whole shrimp, so it focuses its attention on processing vessels that discard the viscera. In the case of the black-browed albatross, it is the species most affected by fishing activities and is protected by federal law. The storm petrel is a small species that cannot fly long distances, and its sightings increase during bad weather, as it is often carried by strong winds. The black-headed petrel is considered a species that could potentially suffer mortality in pelagic fisheries, while the South American tern is unlikely to interact with fishing operations. Regarding marine mammals, it was noted that the shrimp fishery has the greatest impact on sea lions. While the catch per unit effort is low, it still results in a considerable number of deaths, but this does not affect the population status, as the sea lion population is stable. Among the observations, it was highlighted that in the shrimp fishery in national waters, there is a higher probability of encountering two-hued sea lions, whereas in coastal waters, the most common species are <i>Otaria flavescens</i>.
-Dr. Juan Pablo Seco Pon, Researcher of Vertebrate Group, IIMyC-CONICET (UNMdP). -Dr. Diego Rodriguez, Director of the Marine Mammal Biology, Ecology and Conservation Group of IIMyC-CONICET (UNMdP) -Pedro Landa, Fishery Team Leader -Pedro De Carli, Fishery Team Member (P1) -Denise Bore, Fishery Team Member (P2) -Edith Saa Collantes, Fishery Team Member (P3) -Karelys Ruiz, MSC Program Assistant for OIA	



	The need to work on standardizing protocols was emphasized, to ensure consistent data collection methods and to understand how the data from the Private On-board Observer Program was gathered and how representative it is. Regarding whether any mitigation measures have been implemented, it was stated that none currently exist, adding that they are not considered necessary at this time. However, it is important to have an estimate of the number of sea lions caught. The researchers from IIMYC stated that the protocols used are included as an appendix in the new reports being generated.
<i>Meeting with the Directorate of Planning and Management of Fisheries</i> <i>27 March 2025</i> -Lic. Gabriela Navarro, Head of Directorate of Planning and Management of Fisheries, Subsecretary of Aquatic Resources and Fisheries, Secretary of Bioeconomy. -Pedro Landa, Fishery Team Leader -Pedro De Carli, Fishery Team Member (P1) -Denise Bore, Fishery Team Member (P2) -Edith Saa Collantes, Fishery Team Member (P3) -Karelys Ruiz, MSC Program Assistant for OIA	The evaluation team inquired whether the provinces were required to adhere to the measures established by the national government. It was explained that there is no mandate requiring the provinces and the national government to standardize or harmonize their regulations, as each province has sovereignty over its own waters. However, regarding preventative measures, the goal is to ensure they are similar to effectively protect the resource. While the provinces are part of the Federal Fisheries Council (CFP), the measures established are intended for national jurisdiction, and the affected provinces are invited to adopt them. Provinces may adopt more stringent measures, but never less restrictive ones. Currently, the Province of Chubut is developing its own management plan, which is expected to be harmonized with the national plan for federal waters. This plan must include protective measures during the breeding and reproduction season of the species. The team inquired about the protection period in the San Jorge Gulf, to which it was explained that if the area were to be reopened for fishing, it would be necessary to demonstrate that it is not a critical breeding and nursery area. Furthermore, it was stated that vessels wishing to operate in national waters must have a permit (or authorization from the CFP), which regulates how the fleet targeting that specific species must operate. In the case of shrimp, since it is a fishery not subject to quotas, vessels with general fishing access can catch shrimp. However, the authority has not issued any new permits, thus limiting fishing effort. What is permitted, however, is the transfer of permits between vessels or the modification of existing fishing plans. It was noted that the purpose of establishing the bycatch committee is to reduce the number of hake caught as bycatch, by encouraging fishing vessel owners to develop selectivity/escape devices and/or modify their fishing gear. To date, the trials have yielded results with varying degrees of effectiveness, so companies are encouraged to continue working to reduce the percentage of hake caught as bycatch. Tests have been conducted using different types of mesh panels and by altering operational procedures (speed), but these tests were carried out outside of the fishing season, and further testing is planned for different periods, particularly during the fishing season.



<i>Meeting with Captains, Crew, Agents and Manual off-loading. 28 March 2025</i>	The team inquired about the fishermen's perception of the resource's status, to which the captains responded that the resource is recovering, thanks to the management measures implemented year after year. If a high percentage of fish below the legal-size limit is detected, INIDEP (the National Institute for Fisheries Research and Development) is notified so that fishing closures can be established to protect juvenile fish. Therefore, despite the large number of vessels targeting this resource, the biomass remains stable due to the implemented fishing closures during the spawning and breeding season. It is recognized that research surveys are essential for establishing management measures for the resource. To this end, the companies register their vessels with INIDEP, which then assigns specific areas for conducting research surveys. The captains have managed to conduct fishing operations more efficiently, resulting in cleaner catches with fish of a suitable commercial size. This is driven by market considerations (<i>i.e.</i> larger fish fetch a higher price). Therefore, the goal is to achieve a higher concentration of fish and larger sizes, resulting in cleaner catches that can be processed quickly on-board. The captains identify hake as the most common bycatch species, occurring in greater abundance in certain areas. If the volume of hake exceeds 20% of the total catch, the vessels relocate and report this to INIDEP (the Argentine National Institute for Fisheries Research and Development) so that the area can be closed to fishing. Regarding the presence of elasmobranchs (sharks and rays), their occurrence is very infrequent. In the case of rays, they are rarely encountered, and those that are caught are always released back into the sea alive. They are handled according to the management plan. Related to the use of deterrent lines, studies were conducted, but it was determined that they are not necessary. This is due to the low frequency of interactions with these fish, and in the case of marine mammals, their use is only warranted in rare instances when the mammals are perceived to be under attack by orcas.
<i>Meeting with Hydrobiology Research Institute of National University of Patagonia San Juan Bosco – UNPSJB 28 March 2025</i>	Together with the researchers, the issue of hake as a bycatch species in the shrimp fishery was discussed. It was noted that although the percentage of hake in the bycatch is less than 5%, the volume in tons is significant. Regarding violations, it was suggested that the increase in non-compliance is most likely due to an increase in the number of vessels operating in the fishery or a change in enforcement practices.
-Dra. Maria Eva Gongora, Scientific Researcher -Dr. Nelson D. Bovcon, Scientific Researcher	



-Pedro Landa, Fishery Team Leader -Pedro De Carli, Fishery Team Member (P1) -Denise Bore, Fishery Team Member (P2) -Edith Saa Collantes, Fishery Team Member (P3) -Karelys Ruiz, MSC Program Assistant for OIA	
<i>Closing meeting with Client Group 1 April 2025</i>	
-Nelson Jaime, Commercial Manager for IBERCONSA GROUP -Carlos Molina, General Manager for Food Partners Patagonia S.A. -Federico Alvarez, Manager for Achernar S.A.S. -Dario Baroli, External Assessor for Continental Armadores de Pesca S.A. -Maria Lujan Galvan, Manager for Moscuza e Hijos S.A. -Gustavo Casanova, CEO for Arbumasa S.A. -Pablo Milletari, Lawyer for Argenova S.A. -Ernesto Goldeman, CEDEPESCA, Executive Director -Elba Brunetti, CEDEPESCA, Director -Gabriela Mclean, CEDEPESCA, Deputy Executive Director -Agustin De la Fuente, President for CAPIP -Eduardo Boieo, President for CAPECA -Alejandro Costa, Management Assistant for CAPECA -Pedro Landa, Fishery Team Leader -Pedro De Carli, Fishery Team Member (P1) -Denise Bore, Fishery Team Member (P2) -Edith Saa Collantes, Fishery Team Member (P3) -Karelys Ruiz, MSC Program Assistant for OIA	Regarding Principle 1, a hake fishery was identified that targets hake but also catches shrimp as incidental bycatch. This fishery operates north of the hake juvenile protection area. Although the fishery is geographically restricted, the actual amount of bycatch is unclear, even though landings are recorded in the statistics. This should be included in the assessment of the fishery's impact on the target species population, as the MSC standard requires consideration of all removals, both targeted catch and bycatch. INIDEP (National Institute for Fisheries Research and Development) made an observation regarding the overlap of the shrimp fishery area in national waters, suggesting that it was larger than indicated. The relevant information was requested to be incorporated into the assessment process, specifically the actual fishing area within national waters, to allow for an evaluation based on the average of the last 5 years, rather than the total overlapping area. Additionally, INIDEP indicated that it would provide information on density-dependent effects, which is the final criterion evaluated under the susceptibility assessment. This information could have a positive impact, potentially reducing the overall risk score. Regarding Principle 2, an agreement was reached with INIDEP to provide data from observers regarding incidental catch records, to complement the species classification based on observations made by private observers. With respect to habitat and ecosystem, an agreement was reached with INIDEP to provide information from more recent studies comparing the impact of the fishery in open and closed areas. Information from the landing declarations of the fishing vessels was requested to review the hake catch data. It was emphasized that it is important to have information from the client group regarding the intended use of the incidental catch. Otherwise, it will be necessary to review the mitigation measures that have been revised and implemented in the last 5 years to reduce incidental catch. The client group indicated that the current mitigation measure that is known to be effective in reducing bycatch is the one that allows a maximum of 20% bycatch of hake. Finally, regarding Principle 3, it was noted that the explicit objectives of the fishery were established in the CFP Resolution N° 27/2024. Regarding any instances of non-compliance, information was requested from the National Fisheries Enforcement Directorate regarding any violations that occurred during 2023-2024.

According to the MSC Fisheries Certification Process v2.3 – 7.15.1.1, the team shall only use information that was available on or before the last day of the site visit. If the CAB and any participant at the site visit agree in writing that information will be available after site visit, the CAB shall accept this information up to 30 days after the last day of the site visit. Therefore, the following information was provided immediately or within the 30 days after site visit as it was agreed between OIA and stakeholders via email:

-Undersecretary of Fisheries and Aquaculture: updating protocol to control/monitor landings in enable ports using tablet devices.

-Directorate of Fisheries Control and Inspection: a copy of last sanctions conducted by management authority to client group from October 2023 to December 2024 and updating information of satellite monitoring addressed on the shrimp fleet.

-Private On-board Observer Program: Last monitoring information on-board fishing vessel for 2023 and 2024 fishing seasons (unwanted catches).

-INIDEP's researcher groups: Last research technical reports related with Argentine red shrimp fishery and Argentine hake as bycatch.

-Directorate of Planning and Management of Fisheries: Updating fisheries statistical reports and maps of fishing efforts since last 5 years.

-Seabird Group of Marine and Coastal Research Institute (*Instituto de Investigacion Marina y Costera* – IIMyC-CONICET): publicly information related to distribution of seabirds scored as secondary species and seabird's classification (common name and scientific name).

-Marine Mammal Group of Marine and Coastal Research Institute (*Instituto de Investigacion Marina y Costera* – IIMyC-CONICET): publicly reports related to the stock status of *Otaria flavescens* and its distribution in the Argentine Sea.

11.2.3 Evaluation techniques

As it is mentioned above, the Announcement Comment Draft Report was based on a desk-review study with information from the client on request and the Client Document Checklist provided on 11th October 2023.

Information on the assessment process was made publicly available through www.msc.org and OIA press at given stages of the assessment. OIA published the respective announcement, including the Use of the RBF consultation along with the ACDR and the timeline for the assessment on 15th January 2025. These were published on the MSC website and followed by stakeholder notifications by direct emails on 15th January 2025.

In addition to that, all relevant stakeholders identified at the beginning of the assessment were reached through direct emails and given a possibility to monitor the assessment process and provide feedback to the team. Relevant main stakeholders were interviewed between 25th and 28th March 2025 as outlined in section **11.2.1 Site visits**. Information gathered is presented in this report and in the enclosed scoring tables. No written stakeholder input was submitted during the site visit. Also, information gathered during the site visits formed the main basis of the stakeholder consultancy for this assessment.

The default assessment tree from Annex SA of the MSC Fisheries Standard v2.01, without any modifications, was used for this assessment. During the ACDR preparation stage, the team reviewed the clause 7.7.3 and Table 3 of FCPv2.3 to determine the use of RBF. The ACDR contains a preliminary RBF exercise for each performance indicator that were performed with available quali and quantitative information that allow to score consequence, productivity and susceptibility attributes. Prior to the site visit, these draft results were provided to all interested parties via email that confirmed its participation in the site visit scheduled. Also, OIA prepared a RBF guidance explaining qualitative and semi-quantitative analysis. This information was discussed with each stakeholder during meetings held in the site visit to gather data and to seek expert opinions. The team used the input from stakeholders to assist in the identification of species that are affected by the UoA and to score the susceptibility attributes within the PSA. No stakeholder comments were received on its use. A summary of the information obtained from the stakeholder meetings including the range of opinions and the full list of activities and components that have been discussed or evaluated in the assessment, regardless of the final risk-based outcome is provided in the section **11.2.2 Stakeholder participation**.

All information provided was reviewed by the team and scoring was finally agreed by email exchange. Each scoring issue was scored and then averaged to principle scores.

After all relevant information was compiled and analysed, the team scored the UoA against the Performance Indicator Scoring Guideposts (PISGs) in the final tree. The team discussed evidence together, weighed up the balance of evidence and used their judgement to agree on a final score following MSC FCPv2.3 process and based on consensus.

Individual Performance indicators were scored. Scores for individual PIs were assigned in increments of five points. Any divisions of less than five points were justified in the relevant scoring table. Scores for each of the three Principles were reported to the nearest one decimal.

Some scoring issues do not have a scoring guidepost at each of the 60, 80 and 100 levels. The scoring issues and scoring guideposts are cumulative; this means that a PI is scored first at the SG60 levels. If not all the SG scoring issues meet the 60 requirements, the fishery fails, and no further scoring occurs. If all the SG60 scoring issues are met, the fishery meets the 60 level, and the scoring moves to SG80 scoring issues. If no scoring issues meet the requirements at the SG80 level, the fishery receives a score of 60. As the fishery meets increasing numbers of SG80 scoring issues, the score increases above 60 in proportion to the number of scoring issues met; PI scoring occurs at 5-point intervals. If the fishery meets half the scoring issues at the 80 level, the PI would score 70; if it meets a quarter, then it would score 65; and it would score 75 by meeting three-quarters of the scoring issues. If the fishery meets all the SG80 scoring issues, the scoring moves to the SG100 level. Scoring at the SG100 level follows the same pattern as for SG80.

The final scores are based on group consensus within the team. During the scoring process, the team discussed the information available for evaluating PIs with the intention to develop a broad opinion of performance of the fishery against each PI thus assuring that the team was aware of the issues for each PI. Subsequently, the team member responsible for each principle discussed the relevant scoring tables and provided provisional scores. The assessment team members reviewed the rationales and scores, and recommended modifications as necessary, including possible changes in scores. PI scores were entered into MSC's Fishery Assessment Scoring Worksheet to arrive at Principle-level scores.

The team recommends certification where the weighted average score is 80 or more for all the three Principles and where all individual scoring issues are met at the SG60 level.

Conditions are set where the fishery fails to achieve a score of 80 to any Performance Indicators. Conditions with milestones are set to result in improved performance to at least the SG80 level within a period set by the assessment team. The client is required to provide a client action plan to be accepted by the assessment team. The client action plan shall detail:

- how conditions and milestones will be addressed
- who will address the conditions
- the specified time- period within which the conditions and milestones will be addressed
- how the action(s) is expected to improve the performance of the UoA
- how the CAB will assess outcomes and milestones in each subsequent surveillance or assessment
- how progress to meeting conditions will be shown to CABs.

Principle scores result from averaging the scores within each component, and then from averaging the component scores within each Principle. If a principle averages less than 80, the fishery fails.

11.2.4 Peer Review reports

Peer Review A

i. General comments

Fishery	Assessment Start Year	Peer Reviewer (A/B/C)	Question	Yes/No	Peer Reviewer Justification (as given at initial Peer Review stage).	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	PR A	Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	Yes	Based on the detailed review of the justification and scores across several Performance Indicators (PIs) in the assessment report of the Argentine red shrimp offshore fishery, the scoring is generally consistent with the MSC Fisheries Standard, particularly at the SG60 and SG80 levels. The rationales reference appropriate legal, institutional, and scientific frameworks, and most assessments align with the evidence presented. However, there are areas where the evidence is insufficiently detailed to fully support higher scores (especially SG100), or where justifications would benefit from stronger quantitative evidence to reinforce the scoring.	The team reviewed the rationales commented by the peer reviewers, improving the justifications including additional evidence required.
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	PR A	Are the condition(s) raised appropriately written to clearly identify relevant scoring issues and scoring elements and define any milestones, consistent with the MSC process requirements? [Reference: FCP v3.0 Section 7.16]	Yes	The conditions raised in the draft assessment report of the Argentine red shrimp offshore bottom trawl fishery are appropriate and aligned with MSC FCP v3.0 Section 7.16, as they identify the relevant scoring issues and justify why SG80 was not met. Each condition is tied to relevant Performance Indicators, with milestones set for the first surveillance audit in 2026, ensuring measurable progress. These conditions outline expected improvements, providing a structured pathway to meet MSC standards more fully.	Thank you. No response is needed.



ii. PI comments (Standard v2.0)

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	PR comment code	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	1.1.1	No comments (scoring agreed)	The RBF was used to score PI 1.1.1	NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	1.1.2	NA (PI not scored)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	1.2.1	Score reduction expected to <80, condition needed	Sl.a. The justification provided by the CAB for scoring PI 1.2.1 at SG80 is insufficient, as the harvest strategy lacks clearly defined stock management objectives, formal harvest control rules (HCRs), and documented evidence of effectiveness. While various measures are in place, such as effort controls and spatial-temporal closures, there is no formal evaluation demonstrating that these measures are achieving the goal of maintaining the stock above the point of recruitment impairment or at levels consistent with MSY. Furthermore, the use of the RBF for PI 1.1.1 implies uncertainty about stock status, which contradicts the claim that the harvest strategy is effective and responsive. Therefore, a condition should be established to ensure that the harvest strategy is explicitly defined, formally evaluated, and aligned with the stock management objectives.	Thank you. It has been considered for the rationale. The three operational reference points currently used only constitute precautionary values and have not been validated against biological reference points. This has been addressed further in the rationale.	No score change, additional evidence presented
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl	2025	Argentine red shrimp	Bottom trawl	PR A	1.2.2	Minor score reduction expected	Sl.b. The justification provided for scoring PI 1.2.2 at SG100 states that there is evidence that the harvest strategy are robust to the main uncertainties. However, the evidence presented lacks sufficient empirical	Thank you. The observation has been taken into consideration	Minor reduction made



fishery in federal waters		(Pleoticus muelleri)					validation or simulation to demonstrate that these measures are effective in achieving the desired outcomes across the full range of potential stock conditions. Moreover, the absence of a quantitative stock assessment or clear performance against reference points weakens the claim that the strategy is robust to the main uncertainties. Therefore, while the strategy may be precautionary and incorporate basic controls, the justification for achieving SG100 under PI 1.2.2b is weak and should instead be scored at SG80.	and incorporated into the rationale.	
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	1.2.3	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	1.2.4	Score reduction expected to <80, condition needed	SlA, SlB. It is unclear why the Risk-Based Framework (RBF) was applied to score PI 1.1.1, given that the fishery is managed using a harvest strategy that includes explicit reference points and proxy indicators. These include: a CPUE limit to prevent overfishing, measures to restrict the catch of juveniles to avoid growth overfishing, and controls on the catch of mature and impregnated females to prevent recruitment overfishing. According to PI 1.2.1, this harvest strategy is deemed responsive to the state of the stock and designed to achieve the stock management objectives reflected in PI 1.1.1 at the SG80 level. These measures could serve as valid proxy indicators under SA2.2.3.1 of the MSC Fisheries Standard v2.01, which allows for scoring stock status using proxies when quantitative assessments are unavailable but scientifically supported reference points exist. Therefore, the decision to bypass the default assessment tree in favor of the RBF requires a clearer and more robust justification. In the absence of such explanation, the use of the RBF appears inconsistent with the available management tools and MSC guidance, potentially leading	The rationale for the use of the RBF under PI 1.1.1 has been expanded.	No change made



							to a misalignment between the scoring methodology and the actual management regime of the fishery.		
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.1.1	Minor score reduction expected	Sla. The justification for awarding SG100 to PI 2.1.1 for Argentine hake is not fully supported. While the stock is currently above the point of recruitment impairment (PRI), with stable spawning biomass and an increasing proportion of large spawners, the available evidence does not demonstrate with high certainty that the stock is fluctuating around a level consistent with MSY. The reference points used, such as a reproductive biomass of $\geq 600,000$ t and $\geq 18\%$ large spawners, are not clearly linked to MSY-based targets, and the stock assessment does not disaggregate the specific impact of the UoA, whose bycatch accounts for up to 41,000 t annually. Additionally, external fishing pressures from foreign fleets introduce further uncertainty. Therefore, while SG80 is justified, the criteria for SG100 are not met.	As it is stated in the clause GSA2.2.3 <i>“Determination of status with respect to PRI and BMSY. The wording of PI 1.1.1 requires scoring against the conceptual levels PRI and MSY. Such levels may or may not be used as explicit reference points in a fishery. There may be situations where well-managed stocks do not have target reference points or do not have limit reference points, or their values are not consistent with the conceptual levels of PRI or MSY. The stock will still need to be assessed in terms of the overall outcome objectives”</i>. It is valid for 2.1.1. The rationale was improved to address the SG100 level for the main primary species identified.	No score change, additional evidence presented
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.1.2	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)

fishery in federal waters									
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.1.3	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.2.1	NA (PI not scored)	The RBF was used to score PI 2.2.1	NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.2.2	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.2.3	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.3.1	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.3.2	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)



Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.3.3	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.4.1	NA (PI not scored)	The RBF was used to score PI 2.4.1	NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.4.2	Minor change suggested to increase clarity	Sld. Describe the quantitative evidence that supports that the UoA complies with both its management requirements and the protection measures afforded to VMEs by other MSC UoAs and non-MSC fisheries.	It was included in the rationale all sources of quantitative evidence that supports all fisheries in Argentina (MSC UoAs and non-MSC fisheries) complies in the management requirements and protection measures of VME areas.	No score change, additional evidence presented
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.4.3	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.5.1	Score reduction expected to <80, condition needed	The justification for PI 2.5.1 (Ecosystem Outcome) indicates that the ecosystem is likely not undergoing serious or irreversible harm from the UoA. However, the justification to support a score of SG80 rests on indirect and somewhat qualitative information, rather than robust quantitative evidence. The assessment references ecosystem models and monitoring programs (e.g., INIDEP studies and shrimp-hake interactions), but does not present concrete metrics demonstrating ecosystem stability or recovery. Furthermore, while bycatch of	The score of 80 is based on solid quantitative information regarding the status of primary species (Biological Reference Points and TACs), secondary species information and TBAs (catch data obtained by scientific observers), as	No score change, change to rationale



						several species is acknowledged, and some mitigation measures are in place (e.g., area closures), there is limited assessment of cumulative or long-term impacts of the bottom trawl fishery on the broader ecosystem, especially in terms of trophic interactions and habitat dependency. Therefore, while the score of 80 is defensible under a precautionary interpretation, stronger ecosystem-level evidence and more explicit linkages between fishery impacts and ecological indicators would be needed to robustly support the SG80 level without conditions. A precautionary condition may be warranted to improve ecosystem impact evaluations and monitoring.	well as information from INIDEP surveys and studies on these species. It also includes quantitative information obtained, processed, and analyzed by INIDEP on benthic communities. Detailed fishing footprint data are available, including spatial effort distribution by depth and season All quantitative information considered is based on multi-year series, much of it more than five years long. A recent study (2024) on the benthic communities that structure the impacted habitat has been added to the rationale (Gaitan & Souto, 2024). This information had been incorporated into the background, and in PI 2.4.3, but not into the rationale, and has therefore been incorporated and detailed in the latter to better justify the established score. New information has also been incorporated, available during the on-site visit, which	



								complements the information provided on hake and shrimp trophic interactions.	
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.5.2	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.5.3	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	3.1.1	Minor score reduction expected	Slc. The justification and score for PI 3.1.1 (Legal and/or customary framework) is grounded in the existence of a comprehensive legal and institutional framework. This framework secures legal rights of access and use, mandates the implementation of management measures, and aligns with Argentina's obligations under relevant international instruments. The assessment appropriately awards a score of SG80, as the legal and administrative structures are clearly defined, operational, and provide a sound basis for long-term, sustainable fisheries governance. However, while the system is functionally robust, it lacks explicit provisions for recognizing customary rights or formalized co-management arrangements. To justify a score at the SG100 level, the assessment must demonstrate the existence of mechanisms that explicitly recognize and protect the legal or customary rights of people who depend on fishing for food and livelihoods. This includes a formal commitment, either through legislation, regulation, or policy, that ensures these rights are exercised in a manner consistent with the objectives of MSC Principles 1 and 2, particularly with respect to	According to the cultural characteristics of the Argentine people, indigenous peoples and their communities are not traditionally associated with the sea and therefore do not depend on it for their food, as indicated in the link included in the justification. Argentina has a significant number of laws that recognize and protect indigenous peoples and their communities, particularly those associated with land, including provisions in the Constitution, as well as decrees, resolutions,	No change made

							sustainable use, equitable access, and effective stakeholder participation.	provincial constitutions, and international agreements. Consequently, since there are no indigenous communities that depend on the sea for their food, there are also no specific mechanisms to recognize and protect their rights in this regard. For these reasons, no reduction in the score is deemed necessary.	
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	3.1.2	Minor score reduction expected	Slc. While the assessment meets the SG80 criteria, it may fall short of the SG100 level due to the limited evidence of formal, ongoing mechanisms for fully inclusive, transparent, and systematic stakeholder engagement, especially beyond industry stakeholders (e.g., broader civil society or Indigenous/local communities if relevant). For a score of SG100, the justification should demonstrate that consultations actively involve all relevant stakeholders in a structured, formalized manner that clearly influences decision-making processes. Without this evidence, the SG100 score is not fully supported.	The justification was revised to include evidence of the formal and ongoing mechanisms that are used in the fisheries management process. Therefore, no reduction in the score is considered necessary.	No score change, additional evidence presented
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	3.1.3	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	3.2.1	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)



fishery in federal waters									
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	3.2.2	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	3.2.3	Change to rationale or evidence expected, not to scoring	Sla. The Argentine red shrimp offshore fishery operates under a legal framework that includes well-established monitoring, control, and surveillance (MCS) mechanisms. However, to robustly support a score of SG80, it is necessary to provide quantitative evidence demonstrating the ability to enforce relevant management measures, strategies and/or rules. Without such quantitative indicators, the confidence in meeting the SG80 intent may be undermined. Therefore, it is recommended that quantitative enforcement data be provided to strengthen this scoring justification.	The quantification and examples of non-compliance, along with their corresponding penalties, have been provided in the rationale of scoring issue c) of PI 3.2.3. Therefore, there is no change to the scoring; this is simply a clarification based on the information previously provided.	No change made
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	3.2.4	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)

iii. RBF comments (v2.0)

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	RBF scoring	RBF information	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code
Argentine red shrimp (Pleoticus)	2025	Argentine red shrimp	Bottom trawl	PR A	1.1.1 (RBF)	Scoring implications unknown	Scoring implications unknown	It is unclear why the Risk-Based Framework (RBF) was applied to score PI 1.1.1, given that the fishery is managed using a harvest strategy that includes explicit	The rationale for the use of the RBF under PI 1.1.1 was expanded.	No score change, additional



muelleri) offshore bottom trawl fishery in federal waters		(Pleoticus muelleri)						reference points and proxy indicators. These include: a CPUE limit to prevent overfishing, measures to restrict the catch of juveniles to avoid growth overfishing, and controls on the catch of mature and impregnated females to prevent recruitment overfishing. According to PI 1.2.1, this harvest strategy is deemed responsive to the state of the stock and designed to achieve the stock management objectives reflected in PI 1.1.1 at the SG80 level. These measures could serve as valid proxy indicators under SA2.2.3.1 of the MSC Fisheries Standard v2.01, which allows for scoring stock status using proxies when quantitative assessments are unavailable but scientifically supported reference points exist. Therefore, the decision to bypass the default assessment tree in favor of the RBF requires a clearer and more robust justification. In the absence of such explanation, the use of the RBF appears inconsistent with the available management tools and MSC guidance, potentially leading to a misalignment between the scoring methodology and the actual management regime of the fishery.		evidence presented
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.1.1 (RBF)	NA (PI not scored)	NA (PI not scored)	The RBF was not used to score PI 2.1.1	NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.2.1 (RBF)	No comments (scoring agreed)	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)

fishery in federal waters										
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.3.1 (RBF)	NA (PI not scored)	NA (PI not scored)	The RBF was not used to score PI 2.3.1	NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.4.1 (RBF)	No comments (scoring agreed)	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.5.1 (RBF)	NA (PI not scored)	NA (PI not scored)	The RBF was not used to score PI 2.5.1	NA (No response needed)	NA (No response needed)

iv. Condition comments

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	Condition number	Condition Code Is the condition fully and clearly defined?	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code
Argentine red shrimp (Pleoticus muelleri)	2025	Argentine red shrimp	Bottom trawl	PR A	1.2.2	1	Yes	Condition agreed	NA (No response needed)	NA (No response needed)

offshore bottom trawl fishery in federal waters		(Pleoticus muelleri)								
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.3.1	2	Yes	Condition agreed	NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.3.2	3	Yes	Condition agreed	NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.3.3	4	Yes	Condition agreed	NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	2.4.1	5	Yes	Condition agreed	NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	Argentine red shrimp (Pleoticus muelleri)	Bottom trawl	PR A	3.2.3	6	Yes	Condition agreed	NA (No response needed)	NA (No response needed)

Peer Review B

i. General comments

Fishery	Assessment Start Year	Peer Reviewer (A/B/C)	Question	Yes/No	Peer Reviewer Justification (as given at initial Peer Review stage).	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	PR B	Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	No	In my view, the scoring is not fully consistent with the MSC standard in relation to the use of the Risk-Based Framework (RBF) under PI 1.1.1 and PI 2.4.1. In both cases, the assessment report presents sufficient empirical and spatial data that could support application of the default assessment tree. The decision to apply the RBF appears to underutilize available evidence, which may affect the robustness of the scoring. That said, the report overall is well-written, detailed, and informative, with strong references and clear presentation of data. The assessment team has compiled a valuable body of information, but the interpretation and application of the MSC framework in these specific cases warrant reconsideration.	Thank you for this feedback. The rationale for the use of the RBF in the PI 1.1.1 has been expanded. The application of the RBF was not changed. In the case of PI 2.4.1, the team agreed with the PR comments described below) and decided to score this PI using the default assessment tree.
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	PR B	Are the condition(s) raised appropriately written to clearly identify relevant scoring issues and scoring elements and define any milestones, consistent with the MSC process requirements? [Reference: FCP v3.0 Section 7.16]	No	Partially Met as in the Peer Reviewer's opinion, although I agree with the rationale for raising the condition, based on my experience, closing a condition related to Harvest Control Rules (PI 1.2.2) within a 5-year timeframe is challenging. Therefore, they suggest this may qualify as an exceptional circumstance. Further detail and recommendations are provided under the Condition tab	The management is based on technical measures such as size limits, gear restrictions, closed seasons and closed areas. There are advances to define target and limit reference points based on the monitoring (<i>i.e.</i> survey campaigns) conducted in a relatively long period of time (more than 10 years), but there is not defined a stock assessment yet. Nevertheless, the team changed the milestones to ensure the progress of condition according publication times and decision process of the management authority.



Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	PR B	Optional: General comments (continued)	NA	Traceability - table 10. While the fishery describes adequate traceability from vessel to landing, frozen-at-sea product presents a high risk of product mixing between MSC and non-MSC sources. There is no onboard Chain of Custody (CoC) in place, and once product is frozen and boxed, post-processing verification is no longer feasible. We recommend that frozen-at-sea vessels be required to obtain onboard CoC certification to ensure traceability integrity and prevent potential mislabelling or mixing of certified and non-certified shrimp	The freezing fleet only operates in national jurisdiction waters. This fleet does not fishing license to catch in other area as coastal. All shrimp harvested is under assessment. Also, the transshipment practices are not allowed in Argentina to transfer frozen-at-sea products. Therefore, the chain of custody for freezing vessels starts when there is change of product ownership or in land facilities.
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	PR B	Optional: General comments (continued)	NA	Section 9.6 Eligibility of IPI. The text still make reference to the ACDR stage and no further information post site visit is mentioned.	The information related with IPI was updated. It is confirmed that the Argentine shrimp fishery is not subject of IPI's definition.
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	PR B	Optional: General comments (continued)	NA	Figure 6 of the background. The figure does not have the source, it is mentioned in the text but likely good to add it in the foot too.	The Figure 6 was produced by the team using data available in the references related. The source of information used to present the figure was included.
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	PR B	Optional: General comments (continued)	NA	Principle 1 in general. In my view, there are inconsistencies in the scoring across Principle 1, which raise concerns about internal coherence and justification: The harvest strategy (PI 1.2.1) is scored at SG90, suggesting a highly effective, well-defined, and responsive system. At the same time, the harvest control rules (PI 1.2.2) are considered weak and not fully justified, resulting in a score below SG80 and a condition being raised. Monitoring and assessment (PI 1.2.3 and 1.2.4) are scored highly, implying that sufficient and reliable data exist to support stock management. 1.2.4 as default scoring fro applying RBF.	The available information has not been validated. The reference point values applied in the HCRs have been established as precautionary but have not been validated against stock abundance levels. The rationale for the use of the RBF under PI 1.1.1 has been expanded. The score has not been modified.



					Yet, paradoxically, the fishery is also described as data-deficient, and the RBF is used for PI 1.1.1 (stock status). This combination of scores suggests a lack of alignment in how the fishery's data availability, management responsiveness, and risk are interpreted. If monitoring and strategies are deemed robust (as implied by scores ≥ 80), further, management is considered highly adaptive (as in the SG90 for 1.2.1), then it is difficult to justify triggering the RBF for stock status assessment. I recommend that the assessment team re-examine the coherence between these PIs, and clarify whether the fishery should be treated as data-rich (which would imply default tree scoring) or data-limited (justifying the RBF) — but not both simultaneously.	
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	PR B	Optional: General comments (continued)	NA	Principle 2 -10.2.1 background. When describing the private observer program, I find the report lacks a summary of key aspects such as its coverage and consistency. Although the program is reportedly in place since 2016, it appears that some of the data used in the assessment are only from 2022, which raises concerns about how representative or comprehensive the monitoring really is. A concise overview of the program's coverage across years, vessels, and trips would help clarify its reliability and role in supporting the scoring of Principle 2 PIs.	The report includes POAB coverage and consistency. Number of fishing hauls and trips covered since 2017 to 2024 fishing season. Tables 14 and 16 show bycatch data collected and in addition to information from INIDEP, used to assess this fishery in P2.
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	PR B	Optional: General comments (continued)	NA	Comments Principle 2 - Table 14. My understanding is that observer data on seabirds and marine mammals began to be reported in 2022. However, the corresponding table does not appear to include records beyond that year. Could the assessment team please clarify whether such interactions have been recorded systematically from 2022 onward, and if not, explain any gaps in the data? Some	During 2018 and 2019 fishing seasons, POAB only monitored direct impacts of the UoA-related mortality of individuals. In 2022, the Private On-board Observer Program (POAB) improved the gathering collection data methodology to record the indirect interactions of seabirds and marine mammals. During 2023 fishing season,



					data are included in the ETPs section but it would be good to included them in the table 14 if they were taken in the same program.	direct and indirect interactions between the fishery and seabirds, and marine mammal species were recorded in 42% of the fishing hauls. In 2024 fishing season, direct and indirect interactions with seabirds, and marine mammals were recorded in 37% of the fishing hauls. Table 14 includes data recorded in 2022, 2023 and 2024 fishing seasons.
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	PR B	Optional: General comments (continued)	NA	Comments Principle 2 table 14 and 16. Likely a summary of all scoring would be good related to those two tables even though there is a table for scoring elements.	Tables 14 and 16 show the classification of species that appear during (seabirds and marine mammals), and in shrimp catches, and therefore cannot be summarized.
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	PR B	Optional: General comments (continued)	NA	Principle 2 table 18. The habitats scoring elements are not included in this table neither the ecosystems.	The Table 18 was amended including habitats and ecosystem scoring elements.
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	PR B	Optional: General comments (continued)	NA	Principle 3 figure 43. The figure needs the source.	It was included the source of the picture.
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	PR B	Optional: General comments (continued)	NA	From pg 176 - pg 186. The participant's summary is in Spanish.	The participant's summary was translated in English.



ii. PI comments (Standard v2.0)

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	PR comment code	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	1.1.1	Scoring implications unknown	RBF for 1.1.1. While the use of the Outcome PSA under the Risk-Based Framework (RBF) for PI 1.1.1 is technically allowable, it is worth noting that the fishery collects consistent and long-term CPUE data, along with biological indicators such as size composition and reproductive status. Although the fishery does not have formal biological reference points or a stock assessment model, the availability of CPUE trends and empirical biomass indicators suggests that the default assessment tree could have been applied under SA2.2.3 given the availability of: Consistent CPUE data across years, Size and maturity structure from both surveys and observers, Operational thresholds used by INIDEP to inform management (even if informal), The assessment team might consider whether the default tree with empirical evidence (rather than RBF) would have been a more appropriate or informative pathway for scoring PI 1.1.1.	As it has been mentioned, the available information has not been validated. The reference point values applied in the HCRs have been established as precautionary but have not been validated against stock abundance levels. The rationale for the use of the RBF under PI 1.1.1 has been expanded.	No score change, additional evidence presented
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major	Bottom trawl (outriggers trawlers and shrimpers)	PR B	1.1.2	NA (PI not scored)		NA (No response needed)	NA (No response needed)



		Fishing Area 41							
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	1.2.1	Scoring implications unknown	PI 1.2.1 a) The use of the RBF for PI 1.1.1 seems inconsistent with the evidence presented in Table PI 1.2.1, which lists three operational reference points currently used in management. While these may not be formal biological reference points (e.g., BMSY or FMSY), they do serve as empirical indicators tied to biological performance, which are acceptable under the default assessment tree in Annex SA. If these thresholds are used to trigger management decisions, they can be interpreted as proxy reference points and should support a default tree evaluation with empirical evidence rather than defaulting to the RBF. By applying the RBF, the assessment may be: Overlooking usable empirical data already integrated into management, and Reducing transparency and clarity in how stock status is interpreted. This inconsistency warrants clarification from the assessment team, particularly regarding: Why these thresholds were not considered sufficient to apply the default scoring tree while are enough to justify harvest strategies. Whether a score based on empirical indicators would have yielded a different (better or worse) result.	The three operational reference points currently used only constitute precautionary reference values and have not been validated against biological reference points. In this regard, the rationale supporting the score has been expanded.	No score change, additional evidence presented
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major	Bottom trawl (outriggers trawlers and shrimpers)	PR B	1.2.2	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)

		Fishing Area 41							
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	1.2.3	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	1.2.4	Scoring implications unknown	RBF applied for 1.1.1 impacting also 1.2.4. The justification for using the RBF under PI 1.1.1 appears inconsistent with the data-rich nature of this fishery. While formal reference points are lacking, empirical indicators (CPUE, maturity, juvenile ratios) are regularly monitored and actively used in management. MSC guidance states that RBF is for use where direct stock status measures are unavailable, yet this UoA has sufficient data to be evaluated under the default tree using empirical evidence (Annex PF). Applying the RBF here misses an opportunity to integrate meaningful information and possibly undervalues the actual performance of the fishery's monitoring and adaptive controls.	The justification for using the RBF has already been expanded. The CPUE empirical indicators do not allow its use as proxy to be evaluated under the default tree, since they lack support from biological reference points that would allow their analysis.	No change made
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in	Bottom trawl (outriggers trawlers and shrimpers)	PR B	1.2.4	Scoring implications unknown	If the data are considered insufficient to score stock status using the default tree, then they are unlikely to meet the MSC SG80 requirement of being "appropriate and adequate to support the harvest control rule." Moreover, the HCRs (PI 1.2.2) themselves were considered weak and not fully justified, which further undermines the case for scoring 1.2.4 above SG60.	Thank you. The use of the RBF has been justified since neither biological reference points, nor proxies with biological reference values are available. For the same reason, PI	No change made

		FAO Major Fishing Area 41						1.2.2 has not been awarded a score above SG80, since there are no PRI or MSY values available on which to assess the performance of the HCRs.	
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.1.1	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.1.2	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.1.3	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)



		trawl in FAO Major Fishing Area 41							
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.2.1	Change to rationale or evidence expected, not to scoring	PI 2.2.1 a) While the assessment team concludes that the fishery has a negligible impact on secondary species, the scoring under PI 2.2.1 appears to rely primarily on observer data from 2022, with no indication of whether similar data exist for subsequent years. The PR also notes that some Chilean fisheries interacting with the same secondary species and have assessed these species as main and out-of-scope (seabirds) with RBF to assess outcomes. It may be worth reviewing whether a similar approach should be considered here for consistency and precaution.	The PI 2.2.1 a) score is based mainly on the application of RBF to the main secondary species (seabirds). Observer data include data 2022,2023 and 2024 (see Table 16, background). In the case of other secondary species, information includes several years as 2017, 2018, 2019, 2022, 2023 and 2024 (see Table 14, background).	No change made
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.2.2	Scoring implications unknown	PI 2.2.2 e) The report acknowledges the presence of main secondary species—such as seabirds—which should trigger consideration under this subclause. In line with MSC guidance, measures to manage and reduce impacts on main secondary species should be evaluated under 2.2.2e. Omitting this evaluation overlooks a critical component of how the fishery is minimizing risk to secondary species.	As it was detailed in the rationale the guidance GSA3.5.3 allows teams to indicate that the unwanted catch is negligible and use their discretion as to whether the ‘alternative measures’ scoring issue should be scored. There is evidence that the fishery rarely impacts on secondary species bycatch and no observed and unobserved mortality related with seabirds was reported. Also, the	No score change, additional evidence presented

								SG60 and SG80 levels are directly addressed with main secondary species identified (i.e. seabirds). Therefore, the team decided to not score this scoring issue.	
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.2.3	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.3.1	Change to rationale or evidence expected, not to scoring	PI2.3.1 c Although I agree with the scoring of indirect effects on seabirds below SG80, I found the report lacking more detailed information on potential cryptic mortality of seabirds—for example, collisions with cables or during net hauling operations. Including such information would not only strengthen the justification for not reaching SG80, but also provide a clearer picture of the potential risks to seabirds in this fishery and how they are being (or could be) managed.	Table 16 in the background shows indirect interactions and seabirds' mortality during the last three years (2022, 2023 and 2024). In the case of indirect interactions, on-board observers indicated that during observations, the animals did not have direct contact or suffer any damage during the fishing operation. Seabirds were near the vessel (e.g. swimming or flying), perched on the ship or feeding on the	No change made



								catch. Most of them during discarding.	
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.3.2	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.3.3	Scoring implications unknown	Although I agree with the scoring of PI 2.3.3 (ETP Species Information), the questions how reliance on data from only one year (2022) may affect the robustness of the scoring. A single year of observer records, without evidence of continued or consistent monitoring, may not be sufficient to fully characterize the frequency or severity of ETP interactions, especially for low-probability but high-consequence events. It would be useful for the assessment team to clarify how this limited temporal dataset satisfies MSC's expectations for information quality and consistency at the assigned scoring level.	Table 16 in the background shows indirect interactions and seabirds' mortality during the last three years (2022,2023 and 2024). In the case of indirect interactions, private on-board observers indicated that during observations, the animals did not have direct contact or suffer any damage during the fishing operation. Seabirds were near the vessel (e.g. swimming or flying), perched on the ship or feeding on the catch. Most of them during discarding. In addition to the information from INIDEP (Seco Pon et. al., 2023),	No change made

								observers (also noted in the background) in period (2017-2021), records of interaction with seabirds analysed, from a total of 77 fishing trips on freshwater trawlers, 71 freezer trawlers, 7 longliners, one longliner and one jigger, which coincides with the results obtained by private observers.	
Argentine red shrimp (<i>Pleoticus muelleri</i>) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (<i>Pleoticus muelleri</i>) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.4.1	Scoring implications unknown	PI 2.4.1 a) I do not agree with the use of the Risk-Based Framework (RBF) for habitats. The same 2022 observer program data is considered valid to support scoring for several indicators (e.g., bycatch, ETP species), yet it is deemed insufficient when it comes to habitats. In my view, this is inconsistent. Given the available information—such as fishing effort distribution, gear type, and observed interactions along with seafloor information—it should be possible to apply the default assessment tree for PI 2.4.1. I recommend revisiting this scoring approach and considering the use of the default tree rather than RBF, especially if similar data is accepted as adequate elsewhere in the assessment.	The team agrees with PR observation and according to the clause GS3.13.1.1 "<i>The default assessment tree requires knowledge of the likelihood that the UoA does not cause serious or irreversible harm to the habitat, meaning that the following questions must be answered:</i> • <i>What habitats are encountered by the UoA?</i> • <i>What are the impacts of the gear(s) on those habitats? "</i> Questions are answered by available information	No score change, change to rationale



								and the RBF was not used to score this PI.	
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.4.2	Scoring implications unknown	I recommend the assessment team revisit the rationale for applying the Risk-Based Framework (RBF) under PI 2.4.1, particularly in light of how observer program data from 2022 is used to support scoring for PI 2.4.2 (Habitats Management Strategy). If these same data are considered sufficient to evaluate the effectiveness of habitat management measures under PI 2.4.2, it raises questions about why they are not also deemed adequate for applying the default scoring tree in PI 2.4.1. This discrepancy suggests a potential inconsistency in how the evidence is being interpreted and weighted across related PIs. In addition, clarifying this rationale on 2.4.2 would help ensure that management strategies are assessed on a consistent and transparent basis.	The team agrees with the PR comments. The PI 2.4.1 was scored using the Default Assessment Tree including evidence provided in the PI 2.4.2. Also, additional evidence to reinforce the rationale provided for this PI was included.	No score change, change to rationale
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.4.3	Scoring implications unknown	PI 2.4.3 demonstrates that detailed fishing footprint data are available, including spatial effort distribution by depth and season. This level of granularity suggests a robust understanding of fishery-habitat interactions. Since this information was deemed adequate for scoring under PI 2.4.3 (Information), I recommend that the assessment team revisit the rationale as RBF has been used and it affects this rationale too showing discrepancies between PIs. Rather than defaulting to the RBF due to presumed data deficiency, the presence of spatially explicit interaction data could justify use of the default outcome tree for PI 2.4.1. A consistent interpretation of data adequacy across the habitat-related PIs would improve the transparency and internal coherence of the assessment.	The team agrees with the PR comments. The PI 2.4.1 was scored using the Default Assessment Tree including evidence provided in the PI 2.4.3. Also, additional evidence to reinforce the rationale provided for this PI was included.	No score change, change to rationale

Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.5.1	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.5.2	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.5.3	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom	2025	UoA1 - Argentine red shrimp	Bottom trawl (outriggers)	PR B	3.1.1	No comments		NA (No response needed)	NA (No response needed)

trawl fishery in federal waters		(Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	trawlers and shrimpers)			(scoring agreed)			
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	3.1.2	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	3.1.3	Minor score reduction expected	I do not agree with the SG100 score assigned to PI 3.1.3. While the report presents several strategic and legal frameworks at national and provincial levels, these are mostly general management goals and not explicitly tied to long-term sustainability objectives for this specific fishery or ecosystem outcomes. The scoring table refers to documents such as the Federal Fisheries Law and Management Plans, but does not clearly demonstrate that long-term objectives are operationalized and consistently reflected in the implementation of management measures for this UoA. Additionally, while the existence of overarching policy instruments (e.g. CFP resolutions, INIDEP strategies) may support an SG80 but SG100 requires explicit, well-documented long-term objectives that are consistently	According to the Fisheries standard, this compliance indicator assesses whether the management system includes general, long-term objectives. Therefore, it evaluates whether these objectives are stated explicitly or implicitly, and whether they are applied consistently with the precautionary approach. Consequently, this indicator does not assess the current status	No change made



							and demonstrably applied, which is not fully substantiated by the evidence provided. I recommend the score be revised to reflect the actual level of alignment between stated objectives and operational management.	of the fishery under review, and therefore, no adjustment to the score is made.	
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	3.2.1	Score reduction expected to <80, condition needed	PI 3.2.1 should not meet SG80 if there are no defined fishery-specific objectives tied to the management of the red shrimp stock, and no reference points to guide decision-making. SG80 requires that fishery-specific objectives are not only present but are also consistent with the outcomes expressed by MSC's Principle 1. Without reference points or clear stock-based targets, the scoring lacks the necessary foundation to support SG80.	The justification for this indicator has been revised, demonstrating that the specific objectives established have corresponding management measures in place; therefore, it is considered that no additional condition is required.	No score change, additional evidence presented
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	3.2.2	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	3.2.3	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)



		Fishing Area 41							
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	3.2.4	Score reduction expected to <80, condition needed	Based on the information presented, I recommend that a condition be raised under PI 3.2.4 (Fishery-Specific Management Performance Evaluation). While internal performance evaluation appears to occur through ongoing institutional processes, the report does not provide sufficient evidence of occasional, independent external review specific to the management of the offshore Argentine red shrimp fishery. To meet SG80, there should be documented examples of fishery-specific external evaluations, carried out by independent or semi-independent bodies, assessing the effectiveness and outcomes of the management system. In the absence of this, a condition should be applied requiring that such external reviews be conducted and documented within the certification period.	The justification was supplemented with new supporting information, which is considered to demonstrate compliance with SG80.	No score change, additional evidence presented

iii. RBF comments (v2.0)

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	RBF scoring	RBF information	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in	Bottom trawl (outriggers trawlers and shrimpers)	PR B	1.1.1 (RBF)	Scoring implications unknown	Scoring implications unknown	After reviewing Tables 29 and 30, I do not agree with the decision to apply the Risk-Based Framework (RBF) under Principle 1. The information presented in these tables suggests that there is sufficient empirical data to support scoring the fishery using the default assessment tree. Specifically, the fishery collects consistent, long-term CPUE data, along with biological indicators	Thank you. The recommendation has been taken under evaluation. Nevertheless, the abundance of empirical data to support scoring does not allow for the use	No change made



		FAO Major Fishing Area 41						such as size composition, maturity structure, and reproductive status from both scientific surveys and observer programs. While a formal stock assessment or defined biological reference points are not in place, the available empirical data provide a reasonable basis for outcome evaluation under the default tree. Additionally, the use of operational thresholds by INIDEP to inform management—albeit informal—indicates that empirical reference points are already contributing to decision-making processes. I would recommend that the assessment team reconsider whether application of the default tree, through the empirical evidence pathway, would have been more appropriate for scoring PI 1.1.1 in line with the MSC Standard.	of CPUE as an abundance proxy. The CPUE records are considered estimators of resource availability but have not been factored in relation to stock abundance to be considered a proxy and carry out the assessment under the default tree.	
Argentine red shrimp (<i>Pleoticus muelleri</i>) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (<i>Pleoticus muelleri</i>) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.1.1 (RBF)	NA (PI not scored)	NA (PI not scored)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (<i>Pleoticus muelleri</i>) offshore bottom trawl	2025	UoA1 - Argentine red shrimp (<i>Pleoticus muelleri</i>) with bottom	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.2.1 (RBF)	No comments (scoring agreed)	No comments (scoring agreed)		NA (No response needed)	NA (No response needed)

fishery in federal waters		trawl in FAO Major Fishing Area 41								
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.3.1 (RBF)	NA (PI not scored)	NA (PI not scored)		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA 1	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.4.1 (RBF)	Scoring implications unknown	Scoring implications unknown	After reviewing Table 38, we do not agree with the decision to apply the Risk-Based Framework (RBF) under PI 2.4.1 (Habitats Outcome). The report presents a range of spatial data (e.g., depth strata, trawl effort footprint, habitat types) and observer-based information that is already used to support scoring under PI 2.4.2 and PI 2.4.3. This same dataset should be sufficient to assess outcomes using the default tree, particularly through the empirical pathway. Classifying the fishery as data-deficient in this context appears inconsistent, and applying RBF likely underutilizes available evidence. We recommend the assessment team reconsider the use of the default tree or provide a clearer, evidence-based justification for the RBF approach in this case.	The team used the available information to score the PI 2.4.1 using the default assessment tree.	No score change, change to rationale.



Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA 1	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.5.1 (RBF)	NA (PI not scored)	NA (PI not scored)		NA (No response needed)	NA (No response needed)

iv. Condition comments

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	Condition number	Condition Code Is the condition fully and clearly defined?	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	1.2.2	1	No	Regarding the condition raised under PI 1.2.2, we agree with the rationale for the condition but recommend that it be classified as an exceptional circumstance. While the fishery has made progress in developing empirical indicators and spatial management tools, the implementation of a fully defined and tested harvest control rule with reference points is a complex and long-term process, particularly if the fishery is classified as data-limited context. Closing such a condition within the standard 5-year certification cycle is unlikely, and an extended timeframe should be considered	Thank you for the recommendation, it has been taken into consideration. See CAB response provided in General comments.	Condition changed



								under the MSC's exceptional circumstances provision.		
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.3.1	2	Yes		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.3.2	3	Yes		NA (No response needed)	NA (No response needed)
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.3.3	4	Yes		NA (No response needed)	NA (No response needed)



Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	2.4.1	5	No	Regarding the condition raised under PI 2.4.1 (Habitats Outcome), we recommend that the assessment team review the justification for applying the Risk-Based Framework (RBF). We suggest the assessment team reconsider whether the default tree could be applied, and, if not, provide a more detailed justification for why the current level of habitat interaction data is inadequate for outcome scoring. The condition could still be raised but likely with different rationale behind.	With the application of the default assessment tree in the PI 2.4.1, evidence concluded that this PI does not achieve the SG80 level. Therefore, the condition continues to be raised but is determined to use the exceptional circumstance clause.	Condition changed
Argentine red shrimp (Pleoticus muelleri) offshore bottom trawl fishery in federal waters	2025	UoA1 - Argentine red shrimp (Pleoticus muelleri) with bottom trawl in FAO Major Fishing Area 41	Bottom trawl (outriggers trawlers and shrimpers)	PR B	3.2.3	6	Yes		NA (No response needed)	NA (No response needed)

11.3 Stakeholder input

OIA informed to stakeholders the use of the 'MSC Template for Stakeholder Input into Fishery Assessments' to include all written inputs during the stakeholder consultation opportunities (Announcement Comment Draft Report and site visit). No written submission was received during the consultation period neither in the stakeholder interviews. No other written stakeholder input neither verbal submission identifying changes to scoring, rationales and conditions, were received during stakeholder interview in the site visit. Summary of meetings conducted in the site visit is provided in the section **11.2.2 Stakeholder participation**.

The Client Group through CEDEPESCA provided feedback to OIA related with CPRDR. CAB responses are provided below.

Note: CEDEPESCA feedback were provided after peer reviewer comments. As results of this additional review, there are some minor changes in the rationales and scores of PI 2.3.1 (SI a.); 2.3.2 (SI c. and d.); and 3.2.2 (SI d.). Responses and evidence are provided in CAB responses.

During the consultation period, a written submission was provided by Argentine hake fishery Research Program from INIDEP. CAB response to stakeholder input was provided below.

CEDEPESCA (Client group assessor) – MSC Template for Stakeholder Input into Fishery Assessment provided 13/09/2025 (Review process)

i. PI Input (Standard v2.01)

Performance Indicator	Previous input	Stakeholder input code	Input detail	Evidence or references	CAB response to stakeholder input	CAB response code
Principle 1 – Sustainable fish stocks						
1.1.1 - Stock status	N/A	N/A	N/A	N/A	N/A	N/A
1.1.2 - Stock rebuilding	N/A	N/A	N/A	N/A	N/A	N/A
1.2.1 - Harvest strategy	N/A	N/A	N/A	N/A	N/A	N/A
1.2.2 - Harvest control rules and tools	N/A	N/A	N/A	N/A	N/A	N/A
1.2.3 - Information and monitoring	N/A	N/A	N/A	N/A	N/A	N/A
1.2.4 - Assessment of stock status	N/A	N/A	N/A	N/A	N/A	N/A
Principle 2 – Minimising environmental impacts						



2.1.1 - Primary species outcome	N/A	N/A	N/A	N/A	N/A	N/A
2.1.2 - Primary species management	Yes (Site Visit)	No (score increase expected)	In relation to scoring issue (e), alternative measures to reduce UoA-mortality of main primary species (i.e. hake - <i>Merluccius hubbsi</i>) are in continuous review and development by the fishery. In 2019, the Fisheries Federal Council created the Bycatch Commission. In 2020, after determining that the selectivity devices that had been tested so far were not appropriate to the current context of the fishery, the Fisheries Federal Council adopted an alternative measure for the fishery consisting of a modification to the harvest control rule to include a reference point to close shrimp fishing areas and/or sub-areas if the hake-shrimp ratio is above 20% for four consecutive days (i.e. a move-on rule). This alternative measure continues to be upheld by the fishery. On the other hand, selectivity devices continued to be tested and improved afterwards, and in 2022, as performance of the devices failed to improve after modification, the Council decided to enshrine into the fishery's management measures the mandate to design and test selectivity mechanisms for bycatch reduction. As a result, in 2022, several fishing companies put forward their proposals for selectivity devices to be tested in the fishery. In 2024, a positive operational review of one of these devices was shared with stakeholders during a Bycatch Commission meeting, while selectivity tests are underway. Therefore, the fishery does conduct biennial reviews of alternative measures and implements them as appropriate, in accordance with SA3.5.3.3 and GSA3.5.3.3, The above should allow the CAB to consider that SG100 is fulfilled for SI(e).	<u>In the Document checklist:</u> CFP Resolución 09-2022_modifica Medidas de Administración langostino CFP Res 7-2018.pdf. See Whereas section in PDF page 1 and Annex - Article 5 in PDF page 2. 157. CFP ACTA 27-2022 (ver item 7.1 comisión de bycatch).pdf. See item 7.1 in PDF page 16 for a list of selectivity devices proposed by the private sector. 158. CFP ACTA 14-2023 (ver item 6.1 comisión de bycatch).pdf. See item 6.1 in PDF pages 9 and 10. <u>Documents shared during site visit:</u> ACTA 10-24 CS LANG Anexo IV - INIDEP 2.pdf. See PDF pages 1-6 for summarized results of operational tests performed by INIDEP for the Topless configuration, and PDF page 7 for conclusions.	In accordance with the client's indication that the fishery is continually reviewing and developing alternative measures to reduce UoA mortality of the main primary species (i.e. hake - <i>Merluccius hubbsi</i>) and biennial reviews of alternative measures are conducted and implemented as appropriate, in accordance with SA3.5.3.3 and GSA3.5.3.3, reasons for which SG80 is met. However, to comply with SG100, a review of the potential effectiveness and practicality of alternative measures to minimize UoA-related mortality of unwanted catch of all primary species must be completed, and they are implemented, as appropriate; with respect to the latter, most of the selectivity devices are continuing to be proved to be implemented as appropriate, but are not implemented at all.	No change made
2.1.3 - Primary species information	Yes (Site Visit)	No (score increase expected)	In relation to scoring issue (a), the hake-shrimp ratio is monitored daily by INIDEP onboard observers in the Argentine red shrimp fleet operating in federal waters, as it is one of the trigger reference points used in the fishery's harvest control rule. Studies have been conducted	<u>In the Document checklist:</u> 21. INIDEP_Inf Ases y Transf 072-2023_bycatch de Merluccius hubbsi en pesq langostino abr-ago 2023.pdf. See pages 4-9 related to weekly bycatch estimations.	The team reviewed the additional information and incorporated them to support the SG100 level.	Score increased



			by INIDEP to determine the relative error in the annual estimations of hake bycatch used in the stock assessments of hake, and it was found that the relative error is 10% or less when at least 1100 hauls or more are monitored in a year, in any given jurisdiction (provincial or federal). The analysis found that the current sampling size has kept the relative error at 5% or less and that this precision level is satisfactory. Also, the expected volume of bycatch in the shrimp fishery is estimated for future years as part of the stock assessment of hake (predictive analysis). The predictive stock assessments for hake are carried out with the goal of ensuring that the abundance level and stock structure required in the TRP are achieved with an uncertainty level of less than 10%. The above should allow the CAB to consider SG100 is fulfilled for SI(a).	22. INIDEP_Inf Ases y Transf 078-2023_bycatch de Merluccius hubbsi en pesq langostino abr-ago 2023.pdf. This document shows the process of weekly and accumulated bycatch estimations. <u>Documents shared during site visit:</u> INFORME DE INVESTIGACION_044_2024.pdf. Document discussing relative errors for annual bycatch estimations. See pages 7-13 for results, discussion and conclusions. Informe Técnico Oficial INIDEP N°. 32/2024. (<i>Evaluación del estado de explotación del efectivo sur de 41°S de merluza (Merluccius hubbsi) y estimación de la captura biológicamente aceptable para 2025</i>). See table 5 in PDF page 10 for estimation of annual bycatch volumes. See pages 14-28 for results and discussion, projections and recommendations.		
2.2.1 - Secondary species outcome	Yes (Site Visit)	No (score increase expected)	While the seabirds analyzed in component 2.2 are in fact sighted during fishing operations (are observed flying, perched on the boat, or feeding on fish schools, i.e. interacting indirectly with the fishery), they are not caught by the Argentine red shrimp fishing fleet in federal waters. This assertion is based on the results of the POAB for the period 2022-2024 and on the results of studies conducted by INIDEP in collaboration with other research entities in the period 2019-2021, where no direct interactions with fishing gear or cables were observed aboard shrimp vessels. Studies conducted by INIDEP in collaboration with other research entities prior to 2017 (when the San Jorge Gulf was still open to fishing) are not directly relevant to the UoA, as the coastal waters of San Jorge Gulf are under provincial and not federal jurisdiction and are closed to shrimp fishing since 2017, but if those studies were to be considered as reference, it should be noted that no direct interactions with non-ETP seabirds were observed	<u>In the Document checklist:</u> 95. INIDEP_Inf Ases y Transf 036-2017_Mortalidad incidental de aves marinas asociadas a pesquerías.pdf See Table 3 in PDF page 6. 5. Red shrimp Onboard Observers_OFFSHORE_Report_Season 2022.pdf. See PDF pages 4-5 and Table 7 in PDF page 12. <u>Documents shared during site visit:</u> Seco Pon et al 2024. Análisis de las interacciones y mortalidad incidental de aves marinas asociadas a pesquerías comerciales en Argentina: periodo 2017 - 2021. Informe de Asesoramiento y Transferencia INIDEP N.º 13/2024. See Tables 2 and 3 in PDF pages 5 and 6, respectively.	Although information on seabirds indicates that they are only sighted during fishing operations (in flight, perched on vessels, or feeding on schools of fish, that is, indirectly interacting with the fishery), they are not caught by the Argentine red shrimp fishing fleet in federal waters. This information is based on the results of the POAB (Research and Analysis of the Fisheries Policy) for the 2022-2024 period and on the results of studies conducted by INIDEP in collaboration with other research entities during the 2019-2021 period, where no direct interactions with fishing gear or cables were observed on-board shrimp vessels. The decision was made to apply the precautionary approach for these species, particularly because there are no recent studies on their population status. Applying the RBF, the score for this SI was 80.	No change made

			for conventional trawlers (i.e. fish trawlers that might be considered similar to shrimp trawlers in that they recover the fishing gear on the side). Since no non-ETP seabirds have found to be caught in the shrimp fishery, it can be affirmed that there are no main secondary species in the UoA. The above should allow the CAB to consider that SG100 is automatically fulfilled for SI(a). (Please note that the fishery continues to be monitored to detect direct impacts on seabirds, as shown in PI 2.1.3. Also, please note that studies conducted in Isla Escondida apply to coastal vessels operating in the Restricted Effort Fishing Zone, outside the Isla Escondida protected area in waters under provincial jurisdiction, and not to shrimp vessels operating beyond 12 nautical miles in national waters. If those studies are to be considered as reference, it should be noted that also in the case of shrimp vessels operating in coastal waters no collisions with cables were recorded).	Inf Tecnico POAB Lang-offshore_2023.pdf See section 5.5, including Table 4 and Map 7. Inf Tecnico POAB Lang-offshore_2024.pdf See section 5.6, including Table 6 and Map 5.		
2.2.2 - Secondary species management	Yes (Site Visit)	No (change to rationale or evidence expected, not to scoring)	The rationale presented by the CAB in SI (a-c) is valid, but no non-ETP seabirds are caught by the fishery as explained above, so a partial strategy is not necessary.		In SI a), it is clearly stated that "there is no needed to have a partial strategy in place for this group". So, the SG60 and SG80 levels are met.	No change made
2.2.3 - Secondary species information		No (change to rationale or evidence expected, not to scoring)	The rationale presented by the CAB in 2.2.3 is valid, but no non-ETP seabirds are caught by the fishery as explained above. Since there are no main secondary species, the use of the RBF should not be activated.		Information on indirect seabird impacts in this fishery, collected by Private On-Board Observers, dates from 2022. For their part, Seco Pon et al. (2024) conclude that "the impact on populations could also be significant, considering the small population sizes and low productivity of these seabird populations. Particularly, there are no recent studies on their population status, reasons why RBF was applied with a precautionary approach.	No change made
2.3.1 - ETP species outcome	N/A	N/A	N/A	N/A	N/A	N/A



2.3.2 - ETP species management	Yes (Site Visit)	No (change to rationale or evidence expected, not to scoring)	In scoring issue (a), the CAB states that CFP Resolution N° 3/2017, regarding bird scarelines, applies to bottom trawler ("buques arrastreros"), which is true, but the measure does not apply to shrimp trawlers ("tanganeros"), as studies conducted in the context of the PAN-Aves have shown that there is no contact between seabirds and cables used in the shrimp trawler fleet. The fishery does, nevertheless, comply with other measures and recommendations contained in the PAN-Aves (2010) as noted by the CAB.	<u>Documents shared during site visit:</u> Minutes of meetings with skippers during the site visit , where the topic of bird scarelines was discussed. Seco Pon et al 2024. Análisis de las interacciones y mortalidad incidental de aves marinas asociadas a pesquerías comerciales en Argentina: periodo 2017 - 2021. Informe de Asesoramiento y Transferencia INIDEP N.° 13/2024. See Tables 2 and 3 in PDF pages 5 and 6, respectively.	The indicated paragraph was modified according to the clarification provided by the management authority.	No score change, change to rationale
2.3.2 - ETP species management	Yes (Site Visit)	No (change to rationale or evidence expected, not to scoring)	In scoring issue (c), the CAB does not considered SG80 fulfilled because there is no evidence that CFP Resolution N° 3/2017, regarding bird scarelines, is implemented in the UoA; however, this measure does not apply to shrimp trawlers. As there is evidence that relevant measures are being implemented, the above should allow the CAB to consider that SG80 is fulfilled for ETP seabirds in SI(c).	Minutes of meeting with skippers.	As it is indicated above, the use of bird scare lines in the Argentine red shrimp fleet was clarified. Also, the condition was only addressed to ETP marine mammal group.	No score change, change to rationale
2.3.2 - ETP species management	Yes (Site Visit)	No (change to rationale or evidence expected, not to scoring)	In scoring issue (d), the CAB states that there is no evidence available that the fishery is implementing the strategy described in SI(a) for chondrichthyes. However, the onboard observer program has shown that shark finning does not take place in the fishery, and landings per port and shark catch rates show that chondrichthyes are not being targeted by the fishery. The above should allow the CAB to consider that some evidence is available to show that the strategy is being implemented and that SG80 is fulfilled for ETP chondrichthyes in SI(d). In scoring issue (d), the CAB states that the interaction of the fishery with seabirds has been assessed recently; however, Seco Pon et al (2024) shows that the fishery's impact on seabirds has been monitored at least since 2019. The POAB analyzes data on the interaction with seabirds since 2022. No direct interactions nor mortality have	<u>In the Document checklist:</u> 2. Red shrimp Onboard Observers_OFFSHORE_Report_Season 2017.pdf. See table 3 (chondrichthyes). 3. Red shrimp Onboard Observers_OFFSHORE_Report_Season 2018.pdf See table 3 (chondrichthyes) 4. Red shrimp Onboard Observers_OFFSHORE_Report_Season 2019.pdf. See table 3 (chondrichthyes). 5. Red shrimp Onboard Observers_OFFSHORE_Report_Season 2022.pdf. See table 5 (chondrichthyes), PDF page 4 and table 7 (seabirds). Landings per port:	Considering the fishery has in place handling protocols to return alive seabirds, and according to the available information, in recent years (2022-2024), there has been no mortality due to direct or indirect interactions in ETP seabird species. Therefore, the SG80 level is met. However, in the case of chondrichthyes there is no evidence related with the post-capture survival to show that the strategy (i.e. return alive individuals to the sea) is implemented successfully. Therefore, the condition for this group is maintained.	Score increased



			been observed. The fishery continues monitoring itself to detect whether direct interactions occur. The above should allow the CAB to consider that some evidence is available to show that the strategy is being implemented and that SG80 is fulfilled for ETP seabirds in SI (d).	https://www.magyp.gob.ar/sitio/areas/pesca_maritima/desembarques/ <u>Documents shared during site visit:</u> Inf Tecnico POAB Lang-offshore_2023.pdf See Annex 2 and Map 6 (chondrychthyes), section 5.5 (sesabirds). Inf Tecnico POAB Lang-offshore_2024.pdf See Table 4, Map 4, section 5.5.2 and Annex 2 (chondrychthyes), section 5.6 (seabirds).		
2.3.3 - ETP species information	N/A	N/A	N/A	N/A	N/A	N/A
2.4.1 - Habitats outcome	N/A	N/A	N/A	N/A	N/A	N/A
2.4.2 - Habitats management strategy	Yes (ACDR)	No (change to rationale or evidence expected, not to scoring)	As the CAB points out in PI 2.4.1(b), there are no VMEs in the UoA area. Therefore, scoring issue (d) in PI 2.4.2 should not be scored.		According SA3.14.1 The team shall score this PI even if the UoA has no impact on this component.	No change made
2.4.3 - Habitats information	N/A	N/A	N/A	N/A	N/A	N/A
2.5.1 - Ecosystem outcome	N/A	N/A	N/A	N/A	N/A	N/A
2.5.2 - Ecosystem management strategy	N/A	N/A	N/A	N/A	N/A	N/A
2.5.3 - Ecosystem information	N/A	N/A	N/A	N/A	N/A	N/A
Principle 3 - Effective management						
3.1.1 - Legal and/or customary framework	N/A	N/A	N/A	N/A	N/A	N/A
3.1.2 - Consultation,	N/A	N/A	N/A	N/A	N/A	N/A



roles and responsibilities						
3.1.3 - Long term objectives	N/A	N/A	N/A	N/A	N/A	N/A
3.2.1 - Fishery-specific objectives	N/A	N/A	N/A	N/A	N/A	N/A
3.2.2 - Decision-making processes	Yes (Site Visit)	No (score increase expected)	Formal reporting by fishing authorities to all interested stakeholders occurs regularly in the context of the Commission for the Follow-Up of the fishery created by the Fisheries Federal Council to that end in 2003. The meetings occur at least once a year, and stakeholders are provided with comprehensive information on the fishery's performance (i.e. landings, selectivity, bycatch, stock assessments, compliance with management measures, among other topics). During these meetings, the authorities receive feedback from stakeholders and answer questions. In addition, the Fisheries Federal Council replies to specific questions by fishery stakeholders and other interested parties throughout the fishing season as shown in its meeting minutes published in its website, including granting access to information used during the decision-making processes. The above should allow the CAB to consider SG100 fulfilled for SI(d).	<u>In the Document checklist:</u> 36. CFP ACTA 23-2003_crea la Comisión de Seguimiento de la pesquería (ver ítem 3.2).pdf. See item 3.2 in PDF page 6 for a list of functions of the committee and its composition. 39. Comisión de Seguimiento_ACTA N° 06-2020.pdf. The document shows that all interested parties are allowed to actively participate during meetings of the Follow-Up Commission. <u>Documents shared during the site visit:</u> ACTA CFP 5-2024.pdf. See PDF page 12, section 2.2, for an example of topics reported on during Follow-Up meetings. ACTA CFP 14-2024.pdf. See PDF page 13, section 2.2, for an example of topics reported on during Follow-Up meetings. ACTA CFP 12-2024.pdf. See PDF page 13, sections 2.2-2.4, for an example of how the FFC grants access to information. ACTA 10-24 CS LANG Anexo IV - INIDEP 2.pdf. The document shows the level of detail of the information presented to stakeholders (selectivity). ACTA 10-24 CS LANG Anexo V - INIDEP 3.pdf The document shows the level of detail of the information presented to stakeholders (hake bycatch).	The team reviewed evidence provided and decided to adjust the rationale, including them and supporting the SG100 level.	Score increased



3.2.2 - Decision-making processes	Yes (Site Visit)	No (score increase expected)	The management system acts proactively and rapidly to avoid legal disputes with provincial governments and fishery stakeholders, as shown in its meeting minutes, where topics that could be judicialized are discussed and solved in a proactive manner. The evidence should allow the CAB to consider SG100 fulfilled for SI(e).	<u>Documents shared during the site visit:</u> ACTA CFP 9-2024.pdf. See PDF page 8, section 2.2, for an example of how the management system proactively addressed an issue brought up by a provincial government. ACTA CFP 27-2024_Objetivos específicos_Plan de Manejo.pdf, for evidence of how the management system looks to involve fishery stakeholders in the definition of fishery objectives to encourage ownership of management goals within the fishery.	Evidence provided are not enough to support the SG100 level for the SI e). So, the team kept the rationale provided.	No change made
3.2.3 - Compliance and enforcement	N/A	N/A	N/A	N/A	N/A	N/A
3.2.4 - Monitoring and management performance evaluation	N/A	N/A	N/A	N/A	N/A	N/A

Argentine hake fishery Program from INIDEP – MSC Template for Stakeholder Input into Fishery Assessment provided 10/01/2026 (Consultation period of PCDR)

i. General comments

Assessment stage	General Comment	Evidence or references	CAB response to stakeholder input	CAB response code
Site visit	Primary species Argentine hake (Merluccius hubbsi) Southern Stock Management Observar en la página 73 The bycatch of hake is considered an indicator in the shrimp fishing season as the ratio of hake to shrimp catches (M/L), which should not exceed an estimated maximum value (0,20), and/or the cumulative bycatch during the fishing season, compared to the total bycatch assessed jointly with the Biologically Acceptable Catch (BAC) of hake south of 41° S (Santos & Villarino, 2023; Santos et al., 2024). Se aclara que en el manejo actual de la Pesquería de langostino dentro del AVPJM		The team agreed with this comment and the text in the background was adjusted according to the stakeholder input.	N/A

	se tiene en cuenta principalmente la relación entre las capturas de merluza y langostino (M/L), si bien se estima el bycatch aceptable anual asociado a la CBA de merluza.			
Site visit	10.2.2. Principle 2 Performance indicator scores and rationales PI 2.1.1 – Primary species outcome Observar en la página 102 (El párrafo siguiente reemplaza al existente en el texto) Although complete 2023 data were used to calculate the 2025 Biologically Acceptable Catch (BAC), preliminary estimates of targeted and bycatch catches for 2024, as well as projected mortality rates, were also considered.		The team accepts this comment and the rationale was adjusted.	No score change - change to rationale
Site visit	P. 2. 1. 3. Primary species information Observar en la página 115 En el siguiente párrafo se debería relativizar la estimación de la incertidumbre del error relativo de la estimación anual del bycatch de merluza sólo a la base por lance de observadores del año 2009. Este análisis se encuentra en elaboración para las bases más actuales de observadores a bordo. Studies have been conducted by INIDEP to determine the relative error in the annual estimations of hake bycatch used in the stock assessments of hake, and it was found that the relative error is 10% or less when at least 1,100 hauls or more are monitored in a year, in any given jurisdiction (provincial or federal). The analysis found that the current sampling size has kept the relative error at 5% or less and that this precision level is satisfactory. Respecto del siguiente párrafo “Also, the expected volume of bycatch in the shrimp fishery is estimated for future years as part of the stock assessment of hake (predictive analysis). The predictive stock assessments for hake are carried out with the goal of ensuring that the abundance level and stock structure required in the TRP are achieved with an uncertainty level of less than 10% (Blanco et al., 2023, 2023a; Santos et al., 2024; Villarino & Hernandez, 2024).” No se debe asignar el nivel de incertidumbre menor al 10 % ni a los datos actuales ni a la estimación del bycatch aceptable asociado a la CBA de merluza que surge de las proyecciones de captura.		The team accepts these comments, and both texts were adjusted in the rationale.	Minor score reduction
Site visit	En este informe se menciona que, para disminuir la incertidumbre de la estimación anual del bycatch de merluza se necesita: • reunir las bases de datos de los observadores provinciales y del INIDEP bajo un protocolo estandarizado en cuanto a la estimación de la captura incidental de merluza. • contar con la información de la captura incidental de merluza obtenida por los observadores a bordo de la flota costera menor de 21 m de eslora que opera en el litoral de la Provincia de Chubut cuando dirige la pesca al langostino durante la temporada estival.	Blanco GG, Villarino M F, Tringali L. 2023. Captura incidental de merluza (Merluccius hubbsi) obtenida por la flota langostinera desde 20 de abril al 13 de agosto de 2023. Informe de Asesoramiento y Transferencia INIDEP N° 72/2023: 18pp.	The team accepts these comments, and both texts were adjusted in the rationale and the score of PI 2.1.3 must be reduced from 95 to 85	Minor score reduction
Site visit	Description of the measure agreed upon for the regulation of fishing to meet the objectives within a specified period (including general and specific measures,		No response needed	N/A

	precautionary measures, contingency plans, mechanisms for emergency decisions, etc.)			
Site visit	Specific regulation of the fishery under assessment Observar en la página 169 Bottom trawling is prohibited from October 1 to November 30 of each year in the Interjurisdictional Areas of Restricted Effort (Area Interjurisdiccional de Esfuerzo Pesquero - AIER) between parallels 43° and 45° S and meridian 63°30' W to protect the reproduction of common hake. Reemplazar el párrafo anterior por el siguiente: Bottom trawling is prohibited from October 1 to November 30 each year in the AREA EAST of the Interjurisdictional Areas of Restricted Fishing Effort (Área Interjurisdiccional de Esfuerzo Pesquero – AIER), between parallels 43° S and 45° S and east of meridian 63°30' W, in order to protect the reproductive period of common hake. Norma original. Artículo 18. Prohíbese realizar operaciones de arrastre de fondo desde el 1° de octubre hasta el 30 de noviembre de cada año, en el área comprendida al este del Área Interjurisdiccional de Esfuerzo Restringido (AIER) entre los paralelos 43º y 45º de latitud Sur y el meridiano 63º 30' de longitud Oeste, a fin de proteger la reproducción de merluza común.		The team accepts this comment and the text was adjusted.	N/A
Site visit	Meeting with Argentine hake Fishery Program (Instituto Nacional de Investigación y Desarrollo Pesquero - INIDEP) (27 March 2025). Observar página 194, Quinto párrafo Studies have been conducted, and devices have been used to improve the selectivity of the fishing gear for hake, but these are not currently implemented because, given the current status of the resource, they would not be effective. Furthermore, the trials were not continued, so alternative measures have been adopted, such as closing the fishing area if the percentage of hake bycatch exceeds 20% of the total catch. Las subáreas de pesca dentro del AVPJM se abren o cierran en función del valor de la relación entre las capturas de merluza y langostino (M/L), dicho valor no debe superar 0,20.		The team accepts this comment and the text was adjusted.	N/A

11.4 Conditions

11.4.1 Conditions

During the full assessment process, 6 conditions were raised for PIs 1.2.2, 2.3.1, 2.3.2, 2.3.3, 2.4.1 and 3.2.3.

Table 19. Condition 1

Performance Indicator	1.2.2
Score	75
Justification	Rationale for SI a) - HCRs design and application For Argentine shrimp fishery, no relation between the parental and recruitment stock has been found, mainly due to the highly dynamic characteristic of the Argentine red shrimp population and the short temporal series being analysed (2017-2022). Nevertheless, Moriondo Danovaro <i>et al.</i> (2022b) have established that the estimated number of individuals in the summer campaign (March) should not be less than 40% of the average value of the 2017-2022 series, but this is not considered as a defined reference point. Generally understood HCRs are in place that allow for fishing areas to be dynamically opened and closed (CFP Resolutions N° 7/2018 and N° 9/2022). As it has been previously stated in c. Fisheries management, fishing areas will be closed when, according to information provided by INIDEP, the following is observed: (a) the relation hake/shrimp is larger than 0.20, and/or (b) there is presence of Argentine red shrimp of commercial categories L4 or smaller in a percentage larger than or equal to 20% during four consecutive fishing days. This harvest control rule is in line with the preliminary harvest control rule made explicit in the CFP Acts N° 19/2019 and N° 19/2020 for the 2019 and 2020 fishing seasons, where the Federal Fishery Council stated that fishing areas shall be closed if the information provided by INIDEP observers signalled that: (a) there is presence of Argentine red shrimp commercial categories L4 or smaller in catches in a proportion equal or greater than 20% for four consecutive days in any area, or (b) the relation hake/shrimp is greater than 0.20 in any area. Furthermore, the monthly CPUE-based reference points and the mature female-based reference points used by INIDEP to provide advice to the Federal Fishery Council are contained in INIDEP's Report (De la Garza & Moriondo Danovaro, 2021). Therefore, the SG60 level is met. No PRI and MSY estimations exist to conclude that HCRs in place ensure that the exploitation rate is reduced as the PRI is approached and are expected to keep the stock fluctuating around a target level consistent with (or above) the MSY. Even though, a sustainability level for Argentine red shrimp fishery would fluctuate around the 200,000 t (Moriondo Danovaro <i>et al.</i>, 2022b; Moriondo Danovaro & De la Garza, 2020), it does not have arguments that are robust enough to support it. Nevertheless, the application of the HCRs in fishery closure allows the recovery evidenced in the research campaigns, and the landing values of the last years (2017-2022). Therefore, SG80 is not achieved, and a condition must be raised.
Condition	For the 4 th certification year, the client group must provide written evidence that well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY.
Condition start	Initial assessment, 2025
Condition deadline	4 th surveillance audit, 2029
Exceptional circumstances	NO
Milestones	For the 1 st surveillance audit (2026), the client group must show written evidence that HCRs for Argentine red shrimp have being discussed with the management authorities, providing proposal

	rules that could be applied in the fishery. These rules could be referenced and applied by similar fisheries. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 75). For the 2nd surveillance audit (2027), the client group must provide written evidence that HCRs continue to be discussed with the management authorities. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 75). For the 3rd surveillance audit (2028), the client group must provide written evidence that a well-defined HCRs have been technically agreed and formally proposed to the management authority. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 75). For the 4th surveillance audit (2029), the client group must provide written evidence that well-defined HCRs are in place and ensure that the exploitation rate is reduced as the PRI is approached and are expected to keep the stock fluctuating around a target level consistent with MSY. If progress of this condition is considered 'on target', the team will re-score this PI, giving a final score of 80, and the condition will be closed.
Verification with other entities	According to the FCP v2.3 – 7.19.8, OIA accepts the Client Action Plan. It was verified that INIDEP and CEDEPESCA agree with the condition terms.

Table 20. Condition 2

Performance Indicator	2.3.1
Score	75
Justification	Rationale for SI c) - Indirect effects <u>ETP seabirds and ETP marine mammals</u> During the monitoring data collection, private observers identified that generally, individuals are near the fishing vessel: swimming or flying, perched on the ship or feeding but in the case of seabirds ETP species, some of them have direct contact dying or suffering damage during the fishing operation. Even studies conducted in relation of population trends, indicates that colonies remain stable or increasing, changes are reported in some colonies structure, but maybe addressed to human settlements or other intensive fisheries activities conducted in the area (Copello <i>et al.</i>, 2014; Crespo <i>et al.</i>, 2015; Milano <i>et al.</i>, 2020; Yorio <i>et al.</i>, 2020; Garcia Borboroglu <i>et al.</i>, 2022). However, there is no updated studies in the recent years to monitor nesting sites, nursery grounds or unobserved mortality. In both cases, there is no available information related with other indirect effects like changes in the trophic cascade, reduction in availability of prey species or foraging. Therefore, the SG80 level is not achieved for these groups and a condition must be raised.
Condition	For the 4 th certification year, the client must provide evidence that indirect effects have been considered for the UoA and are thought to be highly likely to not create unacceptable impacts on ETP seabirds and ETP marine mammals.
Condition start	Initial assessment, 2025
Condition deadline	4 th surveillance audit, 2029
Exceptional circumstances	NO

Milestones	For the 1st surveillance audit (2026), the client group must provide a working plan to review and update information related to the indirect effects considered for the UoA on ETP seabirds and ETP marine mammals. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 75). For the 2nd surveillance audit (2027), the client group must provide written evidence that working plan is ongoing. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 75). For the 3rd surveillance audit (2028), the client group must provide preliminary results that indirect effects have been considered for the UoA and are thought to be highly likely to not create unacceptable impacts on ETP seabirds and ETP marine mammals. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 75). For the 4th surveillance audit (2029), the client must provide written evidence that indirect effects have been considered for the UoA and are thought to be highly likely to not create unacceptable impacts on ETP seabirds and ETP marine mammals. If progress of this condition is considered 'on target', the team will re-score this PI, giving a final score of 85 or more, and the condition will be close.
Verification with other entities	According to the FCP v2.3 – 7.19.8, OIA accepts the Client Action Plan. It was verified that INIDEP, Aves Argentinas, CESIMAR of CCT CENPAT-CONICET, Instituto de Investigacion de Hidrobiologia of UNPSJB and CEDEPESCA agree with the condition terms.

Table 21. Condition 3

Performance Indicator	2.3.2
Score	70
Justification	Rationale for SI c) - Management strategy evaluation <u>ETP marine mammals</u> Sea lions that get caught in fishing nets die from drowning. For this reason, quick release protocols and/or not carrying out fishing operations when groups of mammals are sighted, allow reducing their incidental capture, and therefore, mortality rates. In some countries such as Chile, there are protocols for the reduction on incidental catch and handling of sea lions in the trawl fisheries (Res. Ex. N° 3120/2021). In Argentina, Resolution N° 351/1995 establishes in its Article 1° the prohibition of hunting, capture or appropriation and transit in national jurisdiction of all species of cetaceans and pinnipeds. Likewise, the authority instructs recovery establishments for those species that are damaged and cannot be released immediately. Therefore, the SG60 level is met. Rodriguez <i>et al.</i> (2023) conducted a study from 2014 to 2018, on the impact of various Argentine fisheries on marine mammals. During this period, a total of 452,710 fishing hauls were made in the shrimp fishery, and observations were made in 28,963 (6.4%). The main catch in this fishery was sea lions, with a lower incidence of dolphins and none of whales. Likewise, the largest releases occurred in sea lions, particularly the South American sea lion (<i>Otaria flavescens</i>) compared with South American fur seal (<i>Arctocephalus australis</i>). In comparative terms, the fishery that contributed the most to overall catches compared with the other fisheries studied, was the shrimp fishery (46.3%). For this reason, the authors indicate the need to implement mitigation measures to gradually reduce the number of animals captured. Likewise, articulate strategies and actions with the National Plan for Marine Mammals to reduce their interaction.

	However, there is not an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the species involved. Therefore, the SG80 level is not met, and a condition must be raised for this group. Rationale for SI d) – Management strategy implementation <u>ETP chondrichthyes</u> Management strategy for releasing bycatch alive in good condition are in place since 2013. There is no evidence related with the post-capture survival to show that the strategy (<i>i.e.</i> return alive individuals to the sea) is implemented successful. Therefore, the SG80 level is not met, and a condition must be raised for this group. <u>ETP marine mammals</u> In the same way with ETP seabirds, information about interaction with marine mammals in the Argentine red shrimp offshore fishery was assessed during 2022. There is no evidence about releasing animals alive in good conditions before fishing practices. So, there are no measures/strategy being implemented yet. Therefore, the SG80 level is not met, and a condition must be raised for this group. Rationale for SI e) – Review of alternative measures to minimise mortality of ETP species According to rationales provided for SI a) and c), all tasks conducted in the National Action Plan framework are reviewed by stakeholders and entities involved in actions in follow-up meetings. Summarize of progresses and new mitigation needed measure that must be implemented are publicly available in the Ministry of Economy and Federal Fisheries Council websites, respectively. Therefore, the SG60 level is met. In the case of PAN related with chondrichthyans, the fourth follow-up meeting was conducted on October 2021. Improvements of management measures established by the CFP to reduce unwanted catch of elasmobranchs was addressed in the same year through the Resolution N° 8/2021. In the case of PAN-seabirds, the follow-up meeting was conducted in June 2019. As result of this workshop, objectives and milestones of national action plan were re-addressed through the CFP Act N° 20/2020. Finally, the second meeting to review the progress of action plan for marine mammals was conducted in August 2023. However, as it is mentioned in the SI d), the Argentine red shrimp offshore fishery has not implemented measures to minimise UoA-related mortality of ETP species. Only mitigation actions are related with the national action plans and its involved tasks, but not properly from the fishery under assessment as required alternative measure. Therefore, the SG80 level is not met, and a condition must be raised.
Condition	For the 4th certification year, the client must provide evidence that: -There is an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the ETP marine mammal species involved; -There is some evidence that the measures/strategy is being implemented successfully for ETP marine mammals and ETP chondrichthyans; AND, -There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of all ETP species, and they are implemented as appropriate.
Condition start	Initial assessment, 2025
Condition deadline	4 th surveillance audit, 2029
Exceptional circumstances	NO

Milestones	For the 1st surveillance audit (2026), the client group must provide written evidence that there is an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the ETP marine mammal species involved. Also, the client must provide a working plan to review potential mitigation measures to minimise UoA-related mortality of ETP species related. The working plan must include a proposal of mitigation measures that could be tested and implemented. If progress of this condition is considered 'on target', the team will re-score the SI c), giving a new interim score of 70 for PI. For the 2nd surveillance audit (2027), the client group must provide written evidence that working plan is ongoing. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 70). For the 3rd surveillance audit (2028), the client group must provide preliminary results of alternative measures selected to minimise UoA-related mortality of ETP species involved. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 70). For the 4th surveillance audit (2029), the client must provide written evidence that there is some evidence that the measures/strategy is being implemented successfully for ETP species involved; AND, there is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of all ETP species and they are implemented as appropriate. If progress of this condition is considered 'on target', the team will re-score this PI, giving a final score of 80 or more, and the condition will be close.
Verification with other entities	According to the FCP v2.3 – 7.19.8, OIA accepts the Client Action Plan. It was verified that INIDEP, Aves Argentinas, CESIMAR of CCT CENPAT-CONICET, Instituto de Investigacion de Hidrobiologia of UNPSJB and CEDEPESCA agree with the condition terms.

Table 22. Condition 4

Performance Indicator	2.3.3
Score	70
Justification	Rationale for SI b) – Information adequacy for management strategy Information on the fishery's impacts on ETP species is available accurate and verifiable in specific studies (<i>i.e.</i> assessment of survival rate, ETP species recording sheets, etc). It is adequate to measures trends and support strategy to manage impacts on ETP species, and it is improved by new records derived from cameras and device trials. As stated above, this information is available by OBOs Program, experts and NGOs, and reported in technical reports and scientific papers. Therefore, the SG60 level is met. According to population trend evidences of ETP species directly affected by the UoA under assessment (<i>i.e.</i> animals that dead in fishing operation monitored) as South American fur seal (<i>Arctocephalus australis</i>) and South American sea lion (<i>Otaria flavescens</i>), the colonies or breeding population remain stables or show increase rates (see rationale provided in PI 2.3.1, SI a) and b)). Measures such as the collection of information by private and INIDEP's observers have been implemented within the framework of the National Action Plans (marine mammals, seabirds and chondrichthyans), as well as the release of specimens, when possible. However, as it is mentioned in the PI 2.3.2, SI d), the Argentine red shrimp has not implemented measures to minimise UoA-related mortality (direct and indirect) of ETP species. Only mitigation actions are related with the national action plans and its involved tasks, but not properly from the fishery under assessment as required alternative measure. Therefore, considering information is adequate to support

	measures to manage impacts on ETP species and not to support a strategy to manage impacts (direct and indirect) from the UoA on ETP species. Therefore, the SG80 level is not met, and a condition must be raised.
Condition	For the 4 th certification year, the client group must provide that information is adequate to measure trends and support a strategy to manage impacts on ETP species.
Condition start	Initial assessment, 2025
Condition deadline	4 th surveillance audit, 2029
Exceptional circumstances	NO
Milestones	For the 1st surveillance audit (2026), the client group must provide a working plan to collect adequate information to detect measure trends and support a strategy to manage impacts on ETP species. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 70). For the 2nd surveillance audit (2027), the client group must provide written evidence that working plan is ongoing. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 70). For the 3rd surveillance audit (2028) the client group must provide preliminary results related. If there are negative measure trend into ETP species, mitigation measures/actions must be developed and implement. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 70). For the 4th surveillance audit (2029), the client must provide written evidence that there is adequate information to measure trends and support a strategy to manage impacts on ETP species. If progress of this condition is considered 'on target', the team will re-score this PI, giving a final score of 80, and the condition will be close.
Verification with other entities	According to the FCP v2.3 – 7.19.8, OIA accepts the Client Action Plan. It was verified that INIDEP, Aves Argentinas, CESIMAR of CCT CENPAT-CONICET, Instituto de Investigacion de Hidrobiologia of UNPSJB and CEDEPESCA agree with the condition terms.

Table 23. Condition 5

Performance Indicator	2.4.1
Score	60
Justification	Rationale for SI a) - Commonly encountered habitat status Considering the available information (see background) on the type of substrate, geomorphology and biota of the fishery area and the habitat that regularly encounters the gear used by the UoA and the spatial (geographical) overlap of fishing effort with the habitat's range within the management area(s) covered by the governance body relevant to the UoA, only impacted habitat is "commonly encountered habitat" (GSA3.13.3.1). During the Fishery Announcement, OIA decided to score this PI using RBF methodology. However, the available information suggests that this PI could be scored using the Default Assessment Tree. CEDEPESCA (2023) gathered quantitative information to know the impact of Argentine red shrimp fishery under assessment on the habitat, based mainly on data collected by Private Observer

Program. In addition, De La Garza (2025) analysed and mapped the spatial distribution of the areas where more than 2% of shrimp catches have been recorded from 2019 to 2024.

The fishing area within the Province of Chubut, represented in red, covers 3,624 km². The blue quadrants correspond to areas under national jurisdiction, with a total area of 88,988 km². Considering that the total spatial distribution of shrimp in the Exclusive Economic Zone (EEZ) is 660,466 km², it is observed that almost 95% of the catches come from just 14% of the area where the species is distributed (De La Garza, 2025).

Alemaný *et al.* (2015) analysed a total of 1,706,910 trawling fishing hauls based on satellite monitoring data, obtained during 2006 and 2012. The study area covered the Argentine Exclusive Economic Zone (AEEZ) (35°-55° S, 52°-68° W; 1,100,000 km²), where results show that trawling hotspots are relatively small. The study shows that the area impacted by all the trawling fishery represents less than 7% of the AEEZ's extent. Thus, these findings suggest that over the shelf the magnitude of habitat effects owing to bottom trawling is relatively small.

According Gaitan & Alemany (2024), the distribution of fishing effort by the different fleets operating with bottom trawls presents an irregular pattern, with large sectors with little or no effort and some areas with high effort, although the latter represent less than 5% of the total area of the AEEZ (Alemany *et al.*, 2016). Accordingly, benthic species with broad distribution ranges, such as those recorded as companion fauna of the common hake (*Merluccius hubbsi*) (Gaitan & Souto, 2017), would overlap spatially with bottom trawls only in specific and/or restricted locations within their vast areas of occurrence. In this way, the impact or effect of this disturbance on these species would be minimized. **Then, the SG60 level is met.**

Mauna *et al.* (2024) made comparisons on the spatial distribution of the fishing effort made by the Southern king crab, Southern hake and Argentine red shrimp fisheries, establishing for this a quantitative scale of 1 to 5. For the shrimp fleet, the pattern of potential impact due to fishing disturbance presents notable variations in the different spatial scales considered. The highest values were presented in the San Jorge Gulf and a sector of the northern federal waters (accumulated disturbance in 18 years), this pattern changes in the medium term (accumulated disturbance in 10 years), with only the northern federal waters presenting two sectors with the greatest potential impact, maintaining this pattern in the short term (accumulated disturbance in 5 years). The following figures show the changes in short, medium and long-term for shrimp fishery.

The decrease in fishing effort in the Central Patagonian Area by the shrimp fleet would be due to the reproductive ban in the San Jorge Gulf and secondly, by a change in the distribution of the fleet due to the expansion of the shrimp resource towards areas far from the coast in an east-northeast direction (Fischbach & Bertuche, 2017; Moriondo Danovaro & De la Garza, 2019; Mauna *et al.*, 2024).

Respect to the biota, according Souto & Gaitan (2017), the seabed where common hake is primarily distributed (34° - 47° S), the one that coincides with the area in which the shrimp fishery is carried out in national waters, present several of the VME indicator groups, which showed a wide distribution and high richness in some sectors. This study indicates that this area is still almost completely free of bottom trawling (north of 44° S and east of 62° S). Given the ban on bottom trawling, the absence of the trawling fleet, and the lack of other disturbances, it could act as a control area for comparison with other areas subject to bottom trawling.

Gaitan & Souto (2018) studied the composition and structure of the macroinvertebrate community present in the area (44° - 47° S) in 2018, giving temporal continuity to previous studies (Gaitan *et al.*, 2013, 2014; Souto & Gaitan, 2017). The results indicate that the trends in richness, diversity indices and relative abundance are maintained, with small differences. Likewise, the main invertebrate phyla are maintained: Arthropoda (Crustacea), Echinodermata and Mollusca.

Gaitan (2021), based on sampling carried out in the summer of 2021, compares with the previous year's (2017 and 2018) by Gaitan & Souto (2018), points out that the number of taxa recorded, as well as the average amount per fishing hauls, show similarities in the three years. The phyla most represented in number of species and in the adjacent sector of the external platform and slope also coincide, according to what was observed by Gaitan *et al.* (2014) and Souto & Gaitan (2017). Species associations maintained the spatial distribution pattern and their discriminant

components as in previous years, so no significant changes were observed in the benthic community.

Gaitan & Alemany (2024) determined the most ecologically relevant benthic invertebrate species between 34° S and 55° S, characterize their main biological traits, define them by sector, and analyse their spatial overlap with bottom trawl distribution. To this end, 708 bottom trawl fishing hauls from eight INIDEP research campaigns between 2013 and 2022 were analysed, covering the Buenos Aires Coastal Ecosystem (BCE), the Northern Shelf (ZCPAU), the Patagonian Shelf (PP), and the Southern Shelf (SA). A total of 275 benthic invertebrate taxa were recorded as part of the by-product fauna, of which only 34 taxa dominated in terms of the relative importance index (RII > 1%). From these, 26 functional groups were identified, reflecting high functional diversity among the main benthic taxa in the area. The four sectors analysed were characterized by benthic communities with a marked and/or relatively stable structure. In general, the dominant organisms were characterized by specific biological traits, such as globose or oval morphology, medium/large body size, long lifespan, filter-feeding mode, sessile living position, zero mobility, and the ability to multiply the substrate. The overlap in the distribution and abundance of the main species with fishing trawling showed different patterns depending on each taxon.

They identified eleven taxa as dominant (IIR > 1%), in at least two analysed sectors. These include commercially exploited species such as the Southern king crab (*Lithodes santolla*), Patagonian scallop (*Zygochlamys patagonica*), and the shrimp (*Pleoticus muelleri*). Four of them (basket star - *Gorgonocephalus chilensis*, ascidian - *Paramolgula gregaria*, sponges (*Tedania* sp.), and tunicates Polyclinidae) showed dominant presence in three sectors: Southern shelf (PA); Argentine Uruguayan Common Fishing Zone (ZCPAU); and, Patagonian shelf (PP), being the shrimp distribution. Focusing exclusively on presence data (even without reaching an IIR > 1%), it was observed that 10 of these taxa (except for *P. muelleri*, whose distribution was more limited) expanded their distribution to an additional sector. That is, these 10 taxa were present in at least three of the sectors analysed, highlighting their wide distribution, with a latitudinal range spanning from 34° - 36° S to 54° - 55° S. Density of the dominant species is shown in the Figure 38, background. Although 275 benthic invertebrate taxa were recorded as bycatch in the eight analysed campaigns, only 34 taxa achieved a Relative Importance Index (RII) value above 1% in any of them. This suggests that, although the number of epibenthic invertebrate taxa retained in fishing nets is high, only a small group of species dominates in terms of relative importance in catches. Furthermore, the strong dominance of certain organisms in three of the analysed regions (ECB, PP, and PA), where one or a few species contribute significantly to the total biomass, suggests that these areas possess benthic communities with a distinct and/or relatively stable structure.

In the case of *Tedania* sp., this genus displayed a wide latitudinal range, with presence from 36° to 54° S. Recently, the northern limit of its distribution (coinciding with the border of the Magallanes Province) was validated by Schejter *et al.* (2024). Unlike *P. gregaria*, these sponges are also distributed in some sectors with high fishing intensity, although their highest occurrence frequency and highest densities occurred in the AVPJM. It is important to note that within the AVPJM, there is fishing effort by trawlers fishing for shrimp (*Pleoticus muelleri*) with trawl nets, which was not considered in this study. In recent years, this fleet has operated primarily east of 64° W (De la Garza, 2024), coinciding with the area where *P. gregaria* and *Tedania* sp. have been most frequently found. This spatial overlap, although initially not appearing to affect the distribution and abundance of these species, requires more detailed study to determine its true impact (Gaitan & Alemany, 2024). This study concluded that considering the study area is dominated by relatively vulnerable species, due to their sessile, long-lived, and community-forming nature, this might be expected to lead to ecosystems that are more sensitive to disturbances. However, this would be offset by the wide distribution of these same species, which generally extend across large areas of the Magallanes Province. It also points out that, given the broad spatial scale covered, the patterns described are general, so it would be extremely important to conduct more focused sampling in areas with high bottom trawling intensity to deeper the knowledge into the relationship between fishing and the benthic communities found in these areas. It is also necessary to delve into other biological traits that would allow for a more detailed characterization of the communities. **Therefore, applying a precautionary approach, the SG80 level is not met, and a condition must be raised.**

Condition	For the 4 th certification year, the client group must provide evidence that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.
Condition start	Initial assessment, 2025
Condition deadline	First recertification period, 2034
Exceptional circumstances	Yes, in case to implement mitigation measures to decrease the risk for the UoA to highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm, the team determine that this condition must be completed in the first reassessment period, due natural ecological functions and response times.
Milestones	For the 1st surveillance audit (2026), the client group must provide a working plan to review the potential reduction of structure and function of the commonly encountered habitat to a point where there would be serious or irreversible harm. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 60). For the 2nd surveillance audit (2027), the client group must provide written evidence that working plan is ongoing. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 60). For the 3rd surveillance audit (2028), the client group must continue with studies and monitoring to detect any increase in the risk that the UoA reduce the structure and function of the commonly encountered habitat to a point where there would be serious or irreversible harm. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 60). For the 4th surveillance audit (2029), the client must provide written evidence that if the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm. If progress of this condition is considered 'on target', the team will re-score this PI, giving a final score of 80 or more, and the condition will be close. In case to detect any potential risk in to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm, mitigation actions must be proposed. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 60). For the 5th year of the period of certification and first re-assessment process (2030), the client group must provide updated evidence that mitigation actions are implemented, and monitoring activity is in place to assess its implementation. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 60). For the 1st surveillance audit of re-certification period (2031), the client must provide updated evidence that mitigation actions continue to be implemented, and monitoring activity is in place to assess its implementation. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 60). For the 2nd surveillance audit of re-certification period (2032), the client must provide updated evidence that mitigation actions continue to be implemented, and monitoring activity is in place to assess its implementation. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 60).

	For the 3rd surveillance audit of re-certification period (2033), providing preliminary results respective effectiveness and practicality of alternative measures to minimize that the UoA reduce the structure and function of the commonly encountered habitat to a point where there would be serious or irreversible harm. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 70). For the 4th surveillance audit of re-certification period (2034), the client group must provide evidence that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm. If progress of this condition is considered 'on target', the team will re-score this PI, giving a final score of 80 or more, and the condition will be closed.
Verification with other entities	According to the FCP v2.3 – 7.19.8, OIA accepts the Client Action Plan. It was verified that INIDEP and CEDEPESCA agree with the condition terms.

Table 24. Condition 6

Performance Indicator	3.2.3																																																												
Score	70																																																												
Justification	Rationale for SI c) – Compliance																																																												
	According to the information provided by the Coordination of Analysis of Infractions and Sanctions of Ministry of Economy, the fishery under assessment has 253 non-compliances recorded during January 1st, 2021, and October 14th, 2023, being the most frequent sanctions related to fishing landing declaration. The fishers did not comply with the requirement to landing reports shall not are above 12% of fishing part declaration. This incompliance represents 29.2% of reported sanctions. Other relevant non-compliances are related to the on-board quality product, transportation bulk or boxes and freezing equipment. The total number of non-compliances for the period are presented below:																																																												
	<table><tr><th colspan="6">Non-compliances</th></tr><tr><th>Requirement</th><th>Category</th><th>2021</th><th>2022</th><th>2023*</th><th>Total</th></tr><tr><td>DNCP Disp. N° 66/2011, Art. 1°</td><td>Landing reports above 12% of fishing declaration</td><td>2</td><td>10</td><td>62</td><td>74</td></tr><tr><td>CFP Res. N° 7/2018, Art. 19°</td><td>Trawling activities in prohibited zones</td><td>3</td><td>0</td><td>0</td><td>3</td></tr><tr><td>SAGPyA Res. N° 171/2018, Art. 8°, i)</td><td>Inadequate treatment to the catch on-board chilling vessels</td><td>0</td><td>9</td><td>54</td><td>63</td></tr><tr><td>SAGPyA Res. N° 171/2018, Art. 8°, a)</td><td>Bulk fishing</td><td>13</td><td>14</td><td>3</td><td>30</td></tr><tr><td>SAGPyA Res. N° 171/2018, Art. 1°, g)</td><td>Fishing activities in prohibited hours</td><td>9</td><td>14</td><td>13</td><td>36</td></tr><tr><td>SAGPyA Res. N° 171/2018, Art. 8°, h)</td><td>Fishing trips above 72 hours</td><td>8</td><td>13</td><td>7</td><td>28</td></tr><tr><td>SAGPyA Res. N° 171/2018, Art. 1°, j)</td><td>Inadequate freezing equipment</td><td>0</td><td>15</td><td>4</td><td>19</td></tr><tr><td colspan="2">Total</td><td>35</td><td>75</td><td>143</td><td>253</td></tr></table>	Non-compliances						Requirement	Category	2021	2022	2023*	Total	DNCP Disp. N° 66/2011, Art. 1°	Landing reports above 12% of fishing declaration	2	10	62	74	CFP Res. N° 7/2018, Art. 19°	Trawling activities in prohibited zones	3	0	0	3	SAGPyA Res. N° 171/2018, Art. 8°, i)	Inadequate treatment to the catch on-board chilling vessels	0	9	54	63	SAGPyA Res. N° 171/2018, Art. 8°, a)	Bulk fishing	13	14	3	30	SAGPyA Res. N° 171/2018, Art. 1°, g)	Fishing activities in prohibited hours	9	14	13	36	SAGPyA Res. N° 171/2018, Art. 8°, h)	Fishing trips above 72 hours	8	13	7	28	SAGPyA Res. N° 171/2018, Art. 1°, j)	Inadequate freezing equipment	0	15	4	19	Total		35	75	143	253
	Non-compliances																																																												
	Requirement	Category	2021	2022	2023*	Total																																																							
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Total		35	75	143	253																																																								
(*) information provided until 14 October 2023.																																																													
According to the information related to fishing trips conducted by freezers and chilling vessels delivered by the Fisheries Planning Directorate of the Ministry of Economy to CEDEPESCA, if it is considered that the freezer vessels (68) carry out on average of the order of 10 trips per fishing season and the total non-compliance reported corresponds to 3 fishing seasons, in that period they would have made 2,040 fishing trips; while chilling vessels (33) make an average of the order of 14 trips per fishing season 1,386 fishing trips were made, it is clear that in total in the period 2021 to 2023, around 3,426 fishing trips were made by the entire shrimp fleet authorized to																																																													

	develop extractive activities in the area under analysis, which implies that non-compliance has been made in 7.38% of fishing trips. So, in general terms, it can be established that although there are non-compliances, the team estimates that the fishers comply with the management system, therefore the SG60 level is met. However, there is not sufficient evidence to demonstrate that the fishers comply with the SG80 level and a condition must be raised, due the non-compliances that occur are directly related to measures established for the optimal use of the captured resources and their safety, a situation that must be improved. Rationale for SI d) – Systematic non-compliance The intent of this SI is that there is simultaneously adequate evidence to assess the compliance of the fishery and no evidence of infringements that occur regularly. According to the types of non-compliances detected in the Argentine red shrimp offshore fishery detailed in the SI c), the team noted that there is enough evidence of systematic non-compliance during 2021-2023 period. Also, sanctions in the fishery increased in the last 3 years. Therefore, the SG80 level is not met, and a condition must be raised.
Condition	For the 4th certification year, the client group must provide that: -Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery; AND, -There is no evidence of systematic non-compliance.
Condition start	Initial assessment, 2025
Condition deadline	4 th surveillance audit, 2029
Exceptional circumstances	NO
Milestones	For the 1st surveillance audit (2026), the client group must show written evidence that work is being done with stakeholders to improve compliance of management system applicable to the fishery under assessment to demonstrate that fishers comply with measures established by management authority. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 70). For the 2nd surveillance audit (2027), the client group must provide written evidence that sanctions/non-compliances are reduced at least 30% per fishing trip, including official information from Directorate of Control and Inspection (<i>Dirección de Control y Fiscalización</i>). If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 70). For the 3rd surveillance audit (2028), the client group must provide written evidence that sanctions/non-compliances are reduced at least 45% per fishing trip, including official information from Directorate of Control and Inspection (<i>Dirección de Control y Fiscalización</i>). If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 70). For the 4th surveillance audit (2029), the client group must provide written evidence that sanctions/non-compliances are reduced at least 60% per fishing trip, including official information from Directorate of Control and Inspection (<i>Dirección de Control y Fiscalización</i>). Also, evidence must demonstrate that there is no systematic non-compliance in the fishery under assessment. If progress of this condition is considered 'on target', the team will re-score this PI, giving a final score of 80, and the condition will be closed.

Verification with other entities

According to the FCP v2.3 – 7.19.8, OIA accepts the Client Action Plan. It was verified that Dirección Nacional de Coordinación y Fiscalización Pesquera and CEDEPESCA agree with the condition terms.

11.5 Client Action Plan

OIA allowed at least 60 days after receipt of the Client and Peer Review Draft Report (*i.e.* sent on June 27th, 2025) to provide information on items that would lead to a ‘material difference’ in the outcome of the assessment and to develop a Client Action Plan. The MSC defines should as: *“Denotes a requirement that shall be followed unless there are reasons not to. If the requirement is not followed, the justification shall be recorded”*.

During the review process, no new conditions were stated. The client action plan document is provided below, including research agency agreements notifying OIA that these entities will be involved in the action plan. Also, these entities confirm that the closure of conditions is likely to require of the following: investment of time or money by these entities; re-arrangement of research priorities by these entities; and they are satisfied that the closure of conditions is both achievable by the client and realistic in the period specified.

The Client Action Plan was received by OIA on November 7th, 2025, and the team reviewed and approved it.

Marine Stewardship Council fisheries assessments

ARGENTINE RED SHRIMP (*Pleoticus muelleri*) OFFSHORE BOTTOM TRAWL FISHERY IN FEDERAL WATERS MSC Client Action Plan

1. Introduction

Table 1: Key Details

Fishery name	Argentine red shrimp (<i>Pleoticus muelleri</i>) offshore bottom trawl fishery in federal waters
Report author	Gabriela McLean / Elba Brunetti
Report author association	CeDePesca
Client name	Achernar S.A.S., Agropez S.A., Arbumasa S.A., Argenova S.A., Buena Proa S.A., Conarpesa Continental Armadores de Pesca S.A., Estrella Patagonica S.A., Food Partners Patagonia S.A., Grupo San Isidro (conformed by: Arela S.A., Greciamar S.A., La Escalerona S.A., Pesquera Olivos S.A., Pesquera San Isidro S.A. and Riminimarr S.A.), Iberconsa de Argentina S.A., Pedro Moscuza e Hijos S.A., Pesquera Deseado S.A.U., Pesquera Santa Cruz S.A.U., Pesquera Veraz S.A., Pesquería del Atlántico S.A., Red Chamber Argentina S.A., Vieira Argentina S.A., Wanchese Argentina S.R.L. and Xeitosiño S.A.
Client contact person	Federico Angeleri - fangeleri@grupoveraz.com.ar Carlos Molina - carlos.molina@food-partners-patagonia.com Gabriela McLean - gabriela.mclean@cedepesca.net Elba Brunetti - elba.brunetti@cedepesca.net
Date of Client Action Plan	October 25 th , 2025

2. Summary of conditions

Table 2: Summary of conditions

Condition number	Condition	Performance Indicator (PI)	Deadline
1	For the 4 th surveillance audit (2029), the client group must provide written evidence that well-defined HCRs are in place and ensure that the exploitation rate is reduced as the PRI is approached and are expected to keep the stock fluctuating around a target level consistent with MSY.	1.2.2	4 th surveillance audit, 2029
2	For the 4 th certification year, the client must provide evidence that indirect effects have been considered for the UoA and are thought to be highly likely to not create unacceptable impacts on ETP seabirds and ETP marine mammals.	2.3.1	4 th surveillance audit, 2029
3	For the 4 th certification year, the client must provide evidence that: -There is an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the ETP marine mammal species involved; -There is some evidence that the measures/strategy is being implemented successfully for ETP marine mammals and ETP chondrichthyans; AND, -There is a regular review of the potential effectiveness and practicality of alternative measures to minimize UoA-related mortality of all ETP species and they are implemented as appropriate.	2.3.2	4 th surveillance audit, 2029
4	For the 4 th certification year, the client group must provide that information is adequate to measure trends and support a strategy to manage impacts on ETP species.	2.3.3	4 th surveillance audit, 2029
5	For the 4 th certification year, the client group must provide evidence that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm. The client group could include in the Client Action Plan implementation of measures to changes spatial attributes that score as 'high risk' of lack information (see guidance GPF7.7.1 of FCPv2.3)	2.4.1	4 th surveillance audit, 2029
6	For the 4 th certification year, the client group must provide that: -Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery; AND, -There is no evidence of systematic non-compliance.	3.2.3	4 th surveillance audit, 2029

3. Summary of conditions

Table 3: PI 1.2.2

1	Condition number		
1			
2	Performance Indicator(s)		
1.2.2			
3	Score		
75			
4	Condition(s)		
For the 4th surveillance audit (2029), the client group must provide written evidence that well-defined HCRs are in place and ensure that the exploitation rate is reduced as the PRI is approached and are expected to keep the stock fluctuating around a target level consistent with MSY. <u>Rationale for the actions proposed:</u> The actions proposed by the Client Group look to ensure the establishment of biological reference points consistent with MSY and PRI to determine the status of the Argentine red shrimp stock, and to demonstrate and/or ensure that the reference points utilized in the HCRs are consistent with the biological reference points used to determine stock status.			
5	Milestone(s)		
For the 1st surveillance audit (2026), the client group must show written evidence that HCRs for Argentine red shrimp have being discussed with the management authorities, providing proposal rules that could be applied in the fishery. These rules could be referenced and applied by similar fisheries. For the 2nd surveillance audit (2027), the client group must provide written evidence that HCRs continue to be discussed with the management authorities. For the 3rd surveillance audit (2028), the client group must provide written evidence that a well- defined HCRs have been technically agreed and formally proposed to the management authority. For the 4th surveillance audit (2029), the client group must provide written evidence that well-defined HCRs are in place and ensure that the exploitation rate is reduced as the PRI is approached and are expected to keep the stock fluctuating around a target level consistent with MSY.			
6	Summary of action plan		
The actions proposed to comply with the milestones set for this Condition include the definition of biological reference points or proxies by INIDEP’s Red Shrimp Program and, once defined, the consistency of the current management thresholds and triggers with those reference points or proxies in order to complement or change the former if necessary to have by the 4th surveillance audit well-defined HCRs analytically found capable of reducing the exploitation rate as the PRI or proxy is approached and keep the stock fluctuating around a target level consistent with MSY or a proxy.			
Milestone	Action	Roles & responsibilities	Outputs
M1. For the 1st surveillance audit (2026), the client group must show written evidence that HCRs for Argentine red shrimp have being discussed with the management authorities, providing proposal rules that could be applied in the fishery. These rules could be referenced and applied by similar fisheries.	C1A1a. INIDEP’s Red Shrimp Program will start studies to determine target and limit biological reference points or proxies that will allow to adopt well defined HCRs by year 4th C1A1b. Meetings with stakeholders and the Committee for the Follow-Up of the Argentine red shrimp fishery, representative advisory body for management authority (CFP), will take place for discussing possible HCRs that could be evaluated for the fishery.	INIDEP will initiate the necessary studies and produce the corresponding reports. The Client Group will provide logistic and/or financial support to conduct workshops/meetings, if required.	INIDEP and/or workshop report/s Meetings minutes.
M2. For the 2nd surveillance audit (2027), the client group must provide written evidence that HCRs continue to be discussed with the management authorities.	C1A2a. INIDEP’s Red Shrimp Program will determine target and limit biological reference points or proxies and start to evaluate the current and other potential rules to satisfy the requirement of having well defined HCRs by year 4th. The Client Group will provide logistic and/or financial support to conduct workshops with international, if required by INIDEP’s Red Shrimp Program. C1A2b. The Committee for the Follow-Up of the Argentine red shrimp fishery, representative advisory body for management authority (CFP), will be informed about the alternatives being evaluated by INIDEP.	INIDEP will complete the necessary studies and produce the corresponding technical reports. The Client Group will provide logistic and/or financial support to conduct workshops/meetings.	INIDEP technical report Meetings/workshops reports/minutes
M3. For the 3rd surveillance audit (2028), the client group must provide written evidence that a well- defined HCRs have been technically agreed and formally proposed to the management authority.	C1A3a. INIDEP will suggest a set of feasible well-defined HCRs (which might include the current trigger measures) to be adopted by the management authorities and will inform them about it.	The Client Group will request the Committee for the Follow-up and the CFP to make a decision on HCRs based on INIDEP’s set of recommendations.	INIDEP technical report or presentation before CFP. Committee for the Follow-up and/or CFP meetings minutes Client Group letters of request

M4. For the 4th surveillance audit (2029), the client group must provide written evidence that well-defined HCRs are in place and ensure that the exploitation rate is reduced as the PRI is approached and are expected to keep the stock fluctuating around a target level consistent with MSY.	C1A4a. The client group will work with the management authorities to have for the 4th surveillance audit well-defined HCRs in place which have been analytically found capable of reducing the exploitation rate as the PRI or proxy is approached and keep the stock fluctuating around a target level consistent with MSY or a proxy.	The Client Group will require the evidence to the corresponding bodies.	CFP rule based on INIDEP technical report on HCRs

Table 4: PI 2.3.1

1	Condition number
2	
2	Performance Indicator(s)
2.3.1	
3	Score
75	
4	Condition(s)
	For the 4 th certification year, the client must provide evidence that indirect effects have been considered for the UoA and are thought to be highly likely to not create unacceptable impacts on ETP seabirds and ETP marine mammals.
	<u>Rationale for the actions proposed:</u> The actions proposed by the Client Group look to ensure the adoption of a research plan directed at determining indirect effects posed by the Argentine Red Shrimp offshore fishery upon ETP seabirds and ETP marine mammals. The actions will involve research entities dedicated to the study of such indirect effects in Argentina. If unacceptable indirect effects are found to be present, recommendations for alternative measures will be designed, shared with the Client Group, and submitted to the Fisheries Federal Council.
5	Milestone(s)
	For the 1 st surveillance audit (2026), the client group must provide a working plan to review and update information related to the indirect effects considered for the UoA on ETP seabirds and ETP marine mammals. For the 2 nd surveillance audit (2027), the client group must provide written evidence that working plan is ongoing. For the 3 rd surveillance audit (2028), the client group must provide preliminary results that indirect effects have been considered for the UoA and are thought to be highly likely to not create unacceptable impacts on ETP seabirds and ETP marine mammals. For the 4 th surveillance audit, the client must provide written evidence that indirect effects have been considered for the UoA and are thought to be highly likely to not create unacceptable impacts on ETP seabirds and ETP marine mammals.
6	Summary of action plan
	The actions proposed to comply with the milestones set for this Condition include work among research institutions to determine the activities that should be contained in a research plan to review and update information related to indirect effects of the Argentine Red Shrimp offshore fishery on ETP seabirds and ETP marine mammals. The activities will be prioritized in collaboration with the Client Group. The research activities will be implemented in the order determined in the research plan, and the onboard observer programs currently in place for the fishery will collect data as needed. The Client Group will provide logistic and financial support to the best of its abilities, and external funding sources will be identified and approached, if needed. The researchers involved in the implementation of the research plan will produce technical reports describing, reviewing and/or updating information related to indirect effects posed by the fishery upon ETP seabirds and ETP marine mammals, and will recommend alternative measures to reduce them, if needed. The recommendations will be shared with the Client Group, and submitted to the Fisheries Federal Council for their consideration.

Milestone	Action	Roles & responsibilities	Outputs
M1. For the 1 st surveillance audit (2026), the client group must provide a working plan to review and update information related to the indirect effects considered for the UoA on ETP seabirds and ETP mammals.	C2A1. Relevant research entities in collaboration with the Client Group and CeDePesca, will design a research plan to study the indirect effects that could be posed by the fishery upon ETP seabirds and ETP marine mammals. The research plan will be aligned with the National Action Plans currently in place in Argentina. The research plan might include studies regarding bird nesting sites and reproduction sites of marine mammals in Argentine soil, and it will include a task dedicated to agreeing on ways to determine whether indirect effects thought to be caused by the fishery are highly likely to be unacceptable. The activities will be prioritized by the research entities, and a list of potential internal and external funding sources will be included in the plan. The Client Group will provide logistic and financial support to the best of its abilities.	Aves Argentinas, CESIMAR-CENPAT (CONICET), UNPSJB, and CeDePesca will design the research plan. Other relevant research entities might participate in the design of the plan. The Client Group will participate of the prioritization process and will provide logistic and financial support for the execution of meetings to the best of its abilities.	Research Plan to review and update information related to the indirect effects of the Argentina Red Shrimp offshore fishery upon ETP seabirds and ETP marine mammals
M2. For the 2 nd surveillance audit (2027), the client group must provide written evidence that working plan is ongoing.	C2A2. The activities in the research plan will be implemented according to the priority order previously established by researchers. The Client Group will provide logistic and financial support to the best of its abilities.	Research entities will implement activities in the order previously determined. The Client Group will provide logistic and financial support to the best of its abilities.	Preliminary report describing the activities conducted
M3. For the 3 rd surveillance audit (2028), the client group must provide preliminary results that indirect effects have been considered for the UoA and are thought to be highly likely to not create unacceptable impacts on ETP seabirds and ETP marine mammals.	C2A3a. The research entities will prepare preliminary reports containing any preliminary results of those activities that have been implemented in the working period, in accordance with the order of priority previously established by the researchers. C2A3b. Using the preliminary results of the research activities, researchers will	Research entities will prepare preliminary reports.	- Preliminary reports including preliminary results and conclusions - Preliminary recommendations for alternative measures
	consider whether it is highly likely that the fishery does not create unacceptable impacts on ETP seabirds and ETP marine mammals. C2A3c. Researchers will consider whether it is necessary to adopt alternative measures to diminish the risk of posing negative indirect effects on ETP seabirds and ETP marine mammals. If alternative measures are advisable, researchers will provide recommendations.		
M4. For the 4 th surveillance audit (2029), the client must provide written evidence that indirect effects have been considered for the UoA and are thought to be highly likely to not create unacceptable impacts on ETP seabirds and ETP marine mammals.	C2A4. Research entities will produce technical reports detailing the results of research activities, emphasizing the indirect effects posed by the fishery and including their technical opinion on whether the impacts would create unacceptable impacts on ETP seabirds and ETP marine mammals. The reports will include a list of any proposed alternative measures that should be considered by the fishery, if necessary. The technical reports and the recommendations will be submitted to Fisheries Federal Council in accordance with the procedure in place to this end.	Research entities will prepare technical reports.	Technical reports produced by research entities

Table 5: PI 2.3.2

1	Condition number
3	
2	Performance Indicator(s)
2.3.2	
3	Score
70	
4	Condition(s)
	For the 4th certification year, the client must provide evidence that: -There is an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the ETP marine mammal species involved; -There is some evidence that the measures/strategy is being implemented successfully for ETP marine mammals and ETP chondrichthyans; AND, -There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of all ETP species and they are implemented as appropriate. <u>Rationale for actions proposed:</u> The actions proposed by the Client Group look to ensure that there is evidence that the existent measures for ETP species are being implemented. In addition, alternative management measures or strategies to minimize mortality of ETP species will be identified, and their viability and practicality will be assessed in conjunction with management authorities. The measures found to be most viable and practicable will be voluntarily adopted by the Client Group. The Fisheries Federal Council will adopt management measures formally, if appropriate.
5	Milestone(s)
	For the 1st surveillance audit (2026), the client group must provide written evidence that there is an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the ETP marine mammal species involved. Also, the client must provide a working plan to review potential mitigation measures to minimize UoA-related mortality of all ETP species. The working plan must include a proposal of mitigation measures that could be tested and implemented. For the 2nd surveillance audit (2027), the client group must provide written evidence that working plan is ongoing. For the 3rd surveillance audit (2028), the client group must provide preliminary results of alternative measures selected to minimize UoA-related mortality of all ETP species. For the 4th surveillance audit (2029), the client must provide written evidence that there is some evidence that the measures/strategy is being implemented successfully for all ETP species; AND, there is a regular review of the potential effectiveness and practicality of alternative measures to minimize UoA-related mortality of all ETP species and they are implemented as appropriate.
6	Summary of action plan
	The actions proposed to comply with the milestones set for this Condition include identifying alternative measures or strategies that might be implemented in the Argentine Red Shrimp offshore fishery to further minimize mortality of ETP species, and assessing the viability and practicability of those alternative measures. If alternative measures are found to be needed and appropriate, the Client Group will voluntarily adopt them. The Fisheries Federal Council will consider alternative measures for the offshore fishery, and adopt them if the Council considers it appropriate. The onboard observer programs currently in place in the fishery will collect data regarding the implementation and effectiveness of existing measures to reduce the incidental catch of ETP species, and on the implementation and effectiveness of any new measures adopted by the Client Group and/or the Fisheries Federal Council.

Milestone	Action	Roles & responsibilities	Outputs
M1. For the 1 st surveillance audit (2026), the client group must provide written evidence that there is an objective basis for confidence that the measures/strategy will work, based on information directly about the fishery and/or the ETP marine mammal species involved. Also, the client must provide a working plan to review potential mitigation measures to minimize UoA-related mortality of all ETP species. The working plan must include a proposal of mitigation measures that could be tested and implemented.	C3A1a. The onboard observer programs, private and/or INIDEP's, will continue to collect data regarding the interaction with ETP species and the implementation and effectiveness of existing measures for the reduction of their incidental catch. C3A1b. CeDePesca will identify alternative measures/strategies to reduce the incidental catch of ETP species in fisheries of similar characteristics in Argentina and abroad, and a workplan to review the alternative measures will be designed in conjunction with the Client Group, INIDEP and other research entities. The work already being done in the context of the National Action Plans for species of conservation interest will be taken into account. The workplan will be presented to the Fisheries Federal Council and to the Commission for the Follow-up of the Fishery at the federal level.	INIDEP and CeDePesca will ensure that relevant data continues to be collected. CeDePesca will identify alternative measures and study their feasibility and practicality. The Fisheries Federal Council, INIDEP, the Client Group and other research entities will participate of the assessment of alternative measures.	- Technical reports of the onboard observer program(s) - Preliminary report on alternative measures
M2. For the 2nd surveillance audit (2027), the client group must provide written evidence that working plan is ongoing.	C3A2. Within the workplan, an assessment of the feasibility and practicality of alternative measures for the reduction of the incidental catch of ETP species in the Argentine red shrimp offshore fishery will be organized by CeDePesca in conjunction with the Client Group and completed by INIDEP and other research entities. In collaboration with the Client Group and INIDEP, a selection of those considered to have the most chances of ensuring best results in the Argentine red shrimp offshore fishery will be selected. The measures will be properly prioritized	The Client Group, INIDEP and CeDePesca and other research entities will complete an assessment of the feasibility of alternative measures.	Report on the feasibility and practicability of alternative measures for ETP species
	according to their feasibility and practicality.		
M3. For the 3 rd surveillance audit (2028), the client group must provide preliminary results of alternative measures selected to minimize UoA-related mortality of all ETP species.	C3A3a. The Client Group will start implementing, in a voluntary fashion, those alternative measures that were selected and that do not imply changes in the fishing gear. C3A3b. The INIDEP onboard observer program, (and/or the private program if necessary), will collect data regarding the implementation of alternative measures.	The Client Group will voluntarily adopt measures that do not require changes in fishing gear. INIDEP (or CeDePesca if necessary) will ensure that data on the implementation of alternative measures is being collected.	Technical reports of the onboard observer program(s)
M4. For the 4 th surveillance audit (2029), the client must provide written evidence that there is some evidence that the measures/strategy is being implemented successfully for all ETP species; AND, there is a regular review of the potential effectiveness and practicality of alternative measures to minimize UoA-related mortality of all ETP species and they are implemented as appropriate.	C3A4a. Technical reports including data regarding the implementation of measures/strategies adopted for ETP species will be produced by the INIDEP onboard observer program (and/or the private program if necessary). C3A4b. The Client Group, INIDEP, the Undersecretariat of Fisheries and CeDePesca will revise the workplan for the review of alternative measures and will establish dates for their regular review. C3A4c. The Undersecretariat of Fisheries will include the review of alternative measures for ETP species in the meeting agenda of the Commission for the Follow-up of the Fishery at the federal level, establishing its regularity. The Client Group will actively participate of the discussions that take place in the Commission around this topic.	INIDEP (and/or CeDePesca if necessary) will produce technical reports for the Onboard Observer Program(s). INIDEP and the Undersecretariat of Fisheries will participate from the revision of the workplan for the regular review of alternative measures. The Client Group and CeDePesca will participate from discussions related to the review of alternative measures.	- Technical reports of the onboard observer program(s) - Meeting minutes of the Commission for the Follow-Up of the Fishery at the federal level

Table 6: PI 2.3.3

1	Condition number
4	
2	Performance Indicator(s)
2.3.3	
3	Score
70	
4	Condition(s)
For the 4th certification year, the client group must provide that information is adequate to measure trends and support a strategy to manage impacts on ETP species.	
Rationale for the actions proposed: The actions proposed by the Client Group look to ensure that the necessary improvements in data collection protocols and/or forms are implemented so that the information collected by the onboard observer programs in place for the fishery remains adequate to measure trends and to support a strategy to manage impacts on ETP species.	
5	Milestone(s)
For the 1 st surveillance audit (2026), the client group must provide a working plan to collect adequate information to detect measure trends and support a strategy to manage impacts on ETP species. For the 2 nd surveillance audit (2027), the client group must provide written evidence that working plan is ongoing. For the 3 rd surveillance audit (2028) the client group must provide preliminary results related. If there are negative measure trend in to ETP species, mitigation measures/actions must be developed and implement. For the 4 th surveillance audit (2029), the client must provide written evidence that there is adequate information to measure trends and support a strategy to manage impacts on ETP species.	
6	Summary of action plan
The actions proposed to comply with the milestones set for this Condition include ensuring the continued collection of relevant data, the continuous improvement of data collection protocols and forms, the measurement of trends, and the recommendation of alternative measures or strategies to further minimize mortality of ETP species, if needed. If alternative measures are found to be needed and are found to be appropriate to the fishery, the Client Group will voluntarily adopt them. The onboard observer programs currently in place in the fishery will collect data regarding the implementation of existing measures to reduce the incidental catch of ETP species, and on the implementation on any new measures adopted by the Client Group and/or the Fisheries Federal Council. Please note that this Action builds upon the Actions set up for Condition 3.	

Milestone	Action	Roles & responsibilities	Outputs
M1. For the 1 st surveillance audit (2026), the client group must provide a working plan to collect adequate information to detect measure trends and support a strategy to manage impacts on ETP species.	C4A1a = C3A1a. The INIDEP onboard observer program, (and the private program if necessary), will continue to collect data regarding the interaction with ETP species and the implementation of existing measures for the reduction of their incidental catch. C4A1b. INIDEP and CeDePesca will discuss how to improve data collection protocols and forms used by the onboard observer programs to ensure that the information collected is adequate to detect changes in trends and to support a strategy to manage impacts on ETP species.	INIDEP and CeDePesca will ensure that relevant data continues to be collected. INIDEP and CeDePesca will discuss the improvement of the data collection programs and plan the implementation of those improvements.	- Technical reports of the onboard observer program(s) - Workplan for the improvement of ETP-related data collection protocols and forms
M2. For the 2 nd surveillance audit (2027), the client group must provide written evidence that working plan is ongoing.	C4A2a. Technical reports will be produced by the INIDEP onboard observer program (and the private program if necessary), showing that data on the interaction of ETP species continues to be collected and is used to understand trends. C4A2b. Activity reports related to the implementation of the workplan to improve data collection protocols and forms will be produced by CeDePesca. The Client Group will provide financial and logistic support as needed.	INIDEP (and CeDePesca if necessary) will ensure that relevant technical reports are produced. CeDePesca will ensure that reports on the execution of capacity-building activities are available. The Client Group will provide financial and logistic support as needed.	- Technical reports of the onboard observer program(s) - Capacity-building activity reports
M3. For the 3 rd surveillance audit (2028) the client group must provide preliminary results related. If there are negative measure trend in to ETP species, mitigation measures/actions must be developed and implement.	C4A3a = C3A3a. The Client Group will start implementing, in a voluntary fashion, those alternative measures that were selected (see Condition 3, Task C3A2a) and that do not imply changes in the fishing gear. C4A3b = C3A3b. The INIDEP onboard observer program, (and the private program if necessary), will collect data	The Client Group will voluntarily adopt measures that do not require changes in fishing gear. INIDEP and CeDePesca will ensure that data on the implementation of alternative measures is being collected.	Technical reports of the onboard observer program(s)

	regarding the implementation of alternative measures.		
M4. For the 4 th surveillance audit (2029), the client must provide written evidence that there is adequate information to measure trends and support a strategy to manage impacts on ETP species.	C4A4a (builds upon C3A4a). Technical reports including data regarding the implementation of measures adopted for ETP species will be produced by the INIDEP onboard observer program (and the private program if necessary). The data collected by the onboard observer program(s) will follow any improvements in protocol deriving from Task C7A2b. The technical reports will include sections dedicated to establishing trends related to direct impacts of the fishery on ETP species.	INIDEP and/or CeDePesca will produce technical reports for the Onboard Observers Program(s).	Technical reports of the onboard observer program(s)

Table 7: PI 2.4.1

1	Condition number
5	
2	Performance Indicator(s)
2.4.1	
3	Score
60	
4	Condition(s)
	For the 4th certification year, the client group must provide evidence that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm. <u>Rationale for the actions proposed:</u> The actions proposed by the Client Group look to ensure the adoption of a research plan directed at monitoring the impact of the the Argentine Red Shrimp offshore fishery upon commonly encountered habitats. If the likelihood of serious or irreversible harm is higher than 30%, then recommendations for alternative measures will be designed by, their feasibility, potential effectiveness, and practicability will be assessed and the feasible ones will be implemented and the outcomes monitored to achieve the 30% likelihood threshold or lower.
5	Milestone(s)
	For the 1st surveillance audit (2026), the client group must provide a workplan to review the potential reduction of structure and function of the commonly encountered habitat to a point where there would be serious or irreversible harm. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 60). For the 2nd surveillance audit (2027), the client group must provide written evidence that workplan is ongoing. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 60). For the 3rd surveillance audit (2028), the client group must continue with studies and monitoring to detect any increase in the risk that the UoA reduce the structure and function of the commonly encountered habitat to a point where there would be serious or irreversible harm. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 60). For the 4th surveillance audit (2029), the client must provide written evidence that if the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm. If progress of this condition is considered 'on target', the team will re-score this PI, giving a final score of 80 or more, and the condition will be close. In case to detect any potential risk to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm, mitigation actions must be proposed. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 60). For the 5th year of the certification period and first re-assessment process (2030), the client group must provide updated evidence that mitigation actions are implemented, and monitoring activity is in place to assess its implementation. If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 60). For the 1st surveillance audit of re-certification period (2031), the client must provide updated evidence that mitigation actions continue to be implemented, and monitoring activity is in place to assess its implementation.

If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 60).
 For the 2nd surveillance audit of re-certification period (2032), the client must provide updated evidence that mitigation actions continue to be implemented, and monitoring activity is in place to assess its implementation.
 If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 60).
 For the 3rd surveillance audit of re-certification period (2033), providing preliminary results respective effectiveness and practicality of alternative measures to minimize that the UoA reduce the structure and function of the commonly encountered habitat to a point where there would be serious or irreversible harm.
 If progress of this condition is considered 'on target', the team will maintain the score of this PI (score of 70).
 For the 4th surveillance audit of re-certification period (2034), the client group must provide evidence that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.
 If progress of this condition is considered 'on target', the team will re-score this PI, giving a final score of 80 or more, and the condition will be closed.

6 Summary of action plan			
The actions proposed to comply with the milestones set for this Condition include the design of a research plan to determine the status of habitats commonly encountered by the Argentine Red Shrimp offshore fishery. The research activities will be implemented in the order determined in the research plan, eventually including the onboard observer programs currently in place for data collection on these impacts, if needed. The Client Group will provide logistic and financial support to the best of its abilities, and external funding sources will be identified and approached, if needed. The researchers involved in the implementation of the research plan will produce research reports describing the status of benthic communities, will compare the results with previous research, will recommend alternative measures to reduce impact, if needed and, in such case, will provide results by the end of the Action Plan that proof that the likelihood of irreversible harming to the common encountered habitats is equal or lower than 30%. The viability and practicality of the proposed alternative measures will be assessed in conjunction with the Client Group and management authorities.			
Milestone	Action	Roles & responsibilities	Outputs
M1. For the 1st surveillance audit (2026), the client group must provide a workplan to review the potential reduction of structure and function of the commonly encountered habitat to a point where there would be serious or irreversible harm.	C5A1. INIDEP and the Client Group will agree on a research plan to update research conducted on the status and evolution of structure and functions of commonly encountered habitats in the area of occurrence of the fishery.	INIDEP will design a research plan to be discussed and agreed with the Client Group.	Workplan
M2. For the 2nd surveillance audit (2027), the client group must provide written evidence that workplan is ongoing.	C5A2. The research plan will begin its implementation with support from the onboard observer program(s) set up for the fishery, if required. The activities will be implemented in the order of priorities determined by INIDEP. The Client Group will provide logistic and/or financial support to the best of its abilities, as required by INIDEP.	INIDEP will lead the implementation of research activities, including the elaboration of a baseline. INIDEP and CeDePesca will ensure that relevant data continues to be collected. The Client Group will participate of the activities as required and will provide logistic and financial support to the best of its abilities.	Preliminary reports describing the activities conducted
M3. For the 3rd surveillance audit (2028), the client group must continue with studies and monitoring to detect any increase in the risk that the UoA reduce the structure and function of the commonly encountered habitat to a point where there would be serious or irreversible harm.	C5A3a. Taking into consideration the preliminary results of the activities in the workplan, INIDEP will recommend alternative measures to minimize the likelihood that the Argentine red shrimp offshore fishery reduces the structure and function of commonly encountered habitats, if needed. C5A3b. INIDEP, CeDePesca and the Client Group will consider the effectiveness, feasibility and practicality of alternative measures.	INIDEP will recommend alternative measures related to commonly encountered habitats, if needed. INIDEP, CeDePesca and the Client Group will conduct the feasibility and practicability analysis.	- Preliminary results and recommendations on alternative measures available - Report on the feasibility and practicability of the alternative measures
M4. For the 4th surveillance audit (2029), the client must provide written evidence that if the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm. If progress of this condition is considered 'on target', the team will re-score this PI, giving a final score of 80 or more, and the condition will be close. In case to detect any potential risk to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm, mitigation actions must be proposed.	C5A4a. INIDEP will provide the results of the previous research to understand if the likelihood of reducing the structure and function of the commonly encountered habitats is equal or lower than 30%. C5A4b. If the studies conducted previously determine the need to modify some of the practices in order not to reduce the structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm (higher than 30%), the Client Group will implement the recommended measures and will encourage the authorities to adopt them formally.	The Client Group will voluntarily implement mitigation measures if needed and will monitor them through a POAB.	- INIDEP report on likelihood that the Argentine red shrimp offshore fishery reduces the structure and function of commonly encountered habitats. - Code of conduct approved and implemented if needed - Minutes of meetings with authorities if necessary
M5. For the 5th year of the period of certification and first re-assessment process (2030), the client group must provide updated evidence that mitigation actions are implemented, and monitoring activity is in place to assess its implementation.	C5A5. In case the previous research showed that mitigation measures are necessary, the Client Group will continue the implementation and verification/monitoring of the Code of Conduct and will continue encouraging the authorities to adopt them formally.	The Client Group will voluntarily continue implementing mitigation measures if needed and monitoring them through a POAB.	- Report of monitoring by the POAB - Minutes of meetings with authorities
M6. For the 1st surveillance audit of re-certification period (2031), the client must provide updated evidence that mitigation actions continue to be	C5A6. In case the previous research showed that mitigation measures are necessary, the Client Group will continue the implementation and	The Client Group will voluntarily continue implementing mitigation measures if needed and monitoring them through a POAB.	- Report of monitoring by the POAB - Evidence of INIDEP's monitoring work

implemented, and monitoring activity is in place to assess its implementation.	verification/monitoring of the Code of Conduct and will ensure that INIDEP is also monitoring the outcomes of the measures adopted.	INIDEP will monitor the situation of the commonly encountered habitats to compare them with the baseline.	
M7. For the 2nd surveillance audit of re-certification period (2032), the client must provide updated evidence that mitigation actions continue to be implemented, and monitoring activity is in place to assess its implementation.	C5A7. In case the previous research showed that mitigation measures are necessary, the Client Group will continue the implementation and verification/monitoring of the Code of Conduct and will ensure that INIDEP is also monitoring the outcomes of the measures adopted.	The Client Group will voluntarily continue implementing mitigation measures if needed and monitoring them through a POAB. INIDEP will monitor the situation of the commonly encountered habitats to compare them with the baseline.	- Report of monitoring by the POAB - Evidence of INIDEP's monitoring work
M8. For the 3 rd surveillance audit of re-certification period (2033), providing preliminary results respective effectiveness and practicality of alternative measures to minimize that the UoA reduce the structure and function of the commonly encountered habitat to a point where there would be serious or irreversible harm.	C5A8a. In case the previous research showed that mitigation measures are necessary, the Client Group will continue the implementation and verification/monitoring of the Code of Conduct and will ensure that INIDEP is also monitoring the outcomes of the measures adopted. C5A8b. INIDEP will provide preliminary results that the likelihood of the UoA reducing the structure and function of the commonly encountered habitat to a point where there would be serious or irreversible harm is being reduced and will achieve the threshold of being equal or lower than 30%.	The Client Group will voluntarily continue implementing mitigation measures if needed and monitoring them through a POAB. INIDEP will continue monitoring the situation of the commonly encountered habitats to compare them with the baseline. INIDEP will report on the evolution of the likelihood of the UoA reducing the structure and function of the commonly encountered habitat.	- Report of monitoring by the POAB - INIDEP's preliminary report comparing the current situation with the baseline defined in year 2.
M9. For the 4th surveillance audit of re-certification period (2034), the client group must provide evidence that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	C5A9a. In case the previous research showed that mitigation measures are necessary, the Client Group will continue the implementation and verification/monitoring of the Code of Conduct and will ensure that INIDEP is also monitoring the outcomes of the measures adopted. C5A9b. INIDEP will provide results that the likelihood of the UoA reducing the structure and function of the commonly encountered habitat to a point where there would be serious or irreversible	The Client Group will voluntarily continue implementing mitigation measures if needed and monitoring them through a POAB. INIDEP will continue monitoring the situation of the commonly encountered habitats to compare them with the baseline.	- Report of monitoring by the POAB - INIDEP's report shows that likelihood of harming the commonly encountered habitats is equal or lower than 30%.
	harm has been reduced to a level equal or lower than 30%.		

Table 6: PI 3.2.3

1	Condition number
6	
2	Performance Indicator(s)
3.2.3	
3	Score
70	
4	Condition(s)
	For the 4th certification year, the client group must provide that: -Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery; AND, -There is no evidence of systematic non-compliance. <u>Rationale for the actions proposed:</u> The actions proposed by the Client Group look to ensure that evidence exists to demonstrate that the fishery complies with the management system and that there is no systematic non-compliance.
5	Milestone(s)
	For the 1st surveillance audit (2026), the client group must show written evidence that work is being done with stakeholders to improve compliance of management system applicable to the fishery under assessment in order to demonstrate that fishers comply with measures established by management authority. For the 2nd surveillance audit (2027), the client group must provide written evidence that sanctions/non-compliances are reduced at least 30% per fishing trip, including official information from Directorate of Control and Inspection (Dirección de Control y Fiscalización). For the 3rd surveillance audit (2028), the client group must provide written evidence that sanctions/non-compliances are reduced at least 45% per fishing trip, including official information from Directorate of Control and Inspection (Dirección de Control y Fiscalización). For the 4th surveillance audit (2029), the client group must provide written evidence that sanctions/non-compliances are reduced at least 60% per fishing trip, including official information from Directorate of Control and Inspection (Dirección de Control y Fiscalización). Also, evidence must demonstrate that there is no systematic non-compliance in the fishery under assessment.
6	Summary of action plan
	The actions proposed to comply with the milestones set for this Condition include the publication of annual monitoring, control and surveillance reports showing the evolution of inspections and sanctions imposed in the fishery by type and their proportion in relation to the number of fishing trips in a fishing season. In addition, it contains the design of activities tending to improve compliance with fishery measures.

Milestone	Action	Roles & responsibilities	Outputs
M1. For the 1st surveillance audit, the client group must show written evidence that work is being done with stakeholders to improve compliance of management system applicable to the fishery under assessment in order to demonstrate that fishers comply with measures established by management authority.	C6A1a. The Client Group will conduct actions tending to improve compliance with fishery measures, including awareness activities directed at skippers and crew, and the editing and distribution of awareness material related to the topic. The Client Group will also ensure that the skippers and captains related to it participate of the activities defined by the Secretariat that require their involvement.	The Client Group will ensure that the skippers and crew associated to it participates of the activities designed to improve compliance. The Client Group will produce awareness material and conduct awareness activities directed at fishers.	• Reports on the execution of awareness activities organized by the Client Group • Awareness material developed by the Client Group
M2. For the 2nd surveillance audit (2027), the client group must provide written evidence that sanctions/non-compliances are reduced at least 30% per fishing trip, including official information from Directorate of Control and Inspection (Dirección de Control y Fiscalización).	C6A2a. The DNCyF will provide to the Client Group an annual report on surveillance, monitoring and control (see Action C1A3a for PI 1.2.2), with a section dedicated to sanctions in the fishery, making emphasis on the number of inspections and sanctions by type by fishing trip. The report will contain a comparison with the previous level of compliance of fishery users. If the expected reduction is not achieved, the DNCyF-USF, together with the Client Group, will consider alternative measures. C6A2b = C6A1a. The Client Group will conduct actions tending to improve compliance with fishery measures, including awareness activities directed at skippers and crew, and the editing and distribution of awareness material related to the topic.	The DNCyF will provide a report on MCS activities and will consider, together with other official bodies and the Client Group alternative measures, if needed. The Client Group will produce awareness material and conduct awareness activities directed at fishers.	• DNCyF Monitoring and Surveillance annual reports • Reports on the execution of awareness activities organized by the Client Group • Awareness material developed by the Client Group
M3. For the 3rd surveillance audit (2028), the client group must provide written evidence that sanctions/non-compliances are reduced at least 45% per fishing trip, including official information from Directorate of Control and Inspection (Dirección de Control y Fiscalización).	C6A3a = C6A2a. The DNCyF will provide an annual report on surveillance, monitoring and control (see Action C1A3a for PI 1.2.2), with a section dedicated to sanctions in the fishery, making emphasis on the number of inspections and sanctions by type by fishing trip. The report will contain a comparison with the previous level of compliance of fishery users. If the expected reduction is not achieved, the DNCyF will consider alternative measures. C6A3b = C6A1a. The Client Group will conduct actions tending to improve compliance with fishery measures, including awareness activities directed at skippers and crew, and the editing and distribution of awareness material related to the topic.	The DNCyF will provide a report on MCS activities and will consider alternative measures, if needed. The Client Group will produce awareness material and conduct awareness activities directed at fishers.	• DNCyF Monitoring and Surveillance annual reports • Reports on the execution of awareness activities organized by the Client Group
and Inspection (Dirección de Control y Fiscalización).	fishing trip. The report will contain a comparison with the previous level of compliance of fishery users. If the expected reduction is not achieved, the DNCyF will consider alternative measures. C6A3b = C6A1a. The Client Group will conduct actions tending to improve compliance with fishery measures, including awareness activities directed at skippers and crew, and the editing and distribution of awareness material related to the topic.		• Awareness material developed by the Client Group
M4. For the 4th surveillance audit (2029), the client group must provide written evidence that sanctions/non-compliances are reduced at least 60% per fishing trip, including official information from Directorate of Control and Inspection (Dirección de Control y Fiscalización). Also, evidence must demonstrate that there is no systematic non-compliance in the fishery under assessment.	C6A4a = C6A2a. The DNCyF will provide an annual report on surveillance, monitoring and control (see Action C1A3a for PI 1.2.2), with a section dedicated to sanctions in the fishery, making emphasis on the number of inspections and sanctions by type by fishing trip. The report will contain a comparison with the previous level of compliance of fishery users. If the expected reduction is not achieved, the DNCyF will consider alternative measures. C6A4b = C6A1a. The Client Group will conduct actions tending to improve compliance with fishery measures, including awareness activities directed at skippers and crew, and the editing and distribution of awareness material related to the topic.	The DNCyF will provide a report on MCS activities and will consider alternative measures, if needed. The Client Group will produce awareness material and conduct awareness activities directed at fishers.	• DNCyF Monitoring and Surveillance annual reports • Reports on the execution of awareness activities organized by the Client Group • Awareness material developed by the Client Group

Mar del Plata, 11 de septiembre de 2025

Señores

**Centro Desarrollo y Pesca Sustentable
en representación del Grupo Cliente**

Certificación MSC - Pesquería de langostino en aguas nacionales

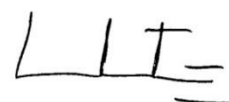
SU DESPACHO

De mi mayor consideración:

Tengo el agrado de dirigirme a ustedes en relación con vuestra consulta sobre la participación de Aves Argentinas/AOP en la ejecución de las tareas del Plan de Acción propuesto por el Grupo Cliente del proceso de certificación MSC de la pesquería de langostino en aguas nacionales.

En ese sentido, por intermedio de la presente, hago constar el aval de Aves Argentinas/AOP para colaborar en la ejecución de las tareas relacionadas con las Condiciones 2, 3 y 4, establecidas para la mejora del desempeño de los indicadores 2.3.1 (Especies ETP - Estado), 2.3.2 (Especies ETP – Manejo) y 2.3.3 (Especies ETP – Información), en tanto dichas tareas están relacionadas con los objetivos, funciones y líneas de investigación de este Instituto. Asimismo, indicar que los requerimientos de Aves Argentinas/AOP para la implementación de las tareas antedichas serán asentados mediante uno o más convenios específicos suscritos para tal fin, en los que se dejará establecida cualquier complementación técnica y financiera necesaria para lograr los objetivos planteados.

Sin otro particular, saludo a ustedes con la consideración más distinguida.



Leandro L. Tamini

Coordinador del Programa Marino

Aves Argentinas / AOP

tamini@avesargentinas.org.ar

**Centro Desarrollo y Pesca Sustentable**

Asociación Civil sin Fines de Lucro

Registro DPPJ N° 17.600 | Registro CENOC N° 15.763

Registro UICN como ONG Latinoamericana N° 24.878

Tel. +54 9 223 503-2233 | www.cedepesca.net | info@cedepesca.net

.:::: José Rondeau 361 – (B7603BDG) Mar del Plata, Argentina ::::

Mar del Plata, 3 de diciembre de 2025

Señores

Grupo Cliente

Certificación MSC - Pesquería de langostino de aguas nacionales

SU DESPACHO

De mi mayor consideración:

Tengo el agrado de dirigirme a ustedes en nombre del Centro Desarrollo y Pesca Sustentable (CeDePesca) para reiterarles el compromiso de nuestra institución con el proceso de mejoras de la pesquería de langostino que tiene lugar en aguas nacionales.

En particular, CeDePesca colaborará en la coordinación y ejecución de las tareas del Plan de Acción elaborado conjuntamente con el Grupo Cliente como parte del proceso de certificación de la pesquería, con el fin de mejorar el desempeño de los indicadores de sostenibilidad 1.2.2 (Regla de control de la captura), 2.3.1 (Especies ETP / Estado), 2.3.2 (Especies ETP / Manejo), 2.3.3 (Especies ETP / Información), 2.4.1 (Hábitats / Estado) y 3.2.3 (Cumplimiento), en tanto las acciones propuestas se encuentran alineadas con la misión de nuestra institución. Los requerimientos de CeDePesca para la implementación de las tareas asociadas a la mejora de dichos indicadores quedarán asentados mediante la firma de uno o más convenios específicos suscritos para tal fin, en los que se dejará establecida cualquier complementación técnica o financiera necesaria para lograr los objetivos planteados.

Sin otro particular, saludo a ustedes con la consideración más distinguida.

Ernesto Godelman
Director Ejecutivo

Puerto Madryn, 12 de noviembre de 2025

Señores

**Centro Desarrollo y Pesca Sustentable
en representación del Grupo Cliente**

Certificación MSC - Pesquería de langostino en aguas nacionales

SU DESPACHO

De mi mayor consideración:

Tengo el agrado de dirigirme a ustedes en relación con vuestra consulta sobre la participación del Centro para el Estudio de los Sistemas Marinos (CESIMAR – CCT CENPAT CONICET) en la ejecución de las tareas del Plan de Acción propuesto por el Grupo Cliente del proceso de certificación MSC de la pesquería de langostino en aguas nacionales.

En ese sentido, por intermedio de la presente, hago constar el aval del CESIMAR – CCT CENPAT CONICET) para colaborar en la ejecución de las tareas relacionadas con las Condiciones 2, 3 y 4, establecidas para la mejora del desempeño de los indicadores 2.3.1 (Especies ETP - Estado), 2.3.2 (Especies ETP – Manejo), 2.3.3 (Especies ETP – Información) en tanto dichas tareas están relacionadas con los objetivos, funciones y líneas de investigación de este Instituto. Asimismo, indicar que los requerimientos del (CESIMAR – CCT CENPAT CONICET) para la implementación de las tareas antedichas serán asentados mediante uno o más convenios específicos suscritos para tal fin, en los que se dejará establecida cualquier complementación técnica y financiera necesaria para lograr los objetivos planteados.

Sin otro particular, saludo a ustedes con la consideración más distinguida.



Dr. Augusto Crespi Abril

Director

Centro para el Estudio de Sistemas Marinos (CESIMAR)

CCT CENPAT CONICET



**Instituto de Investigación
de Hidrobiología**

11 de noviembre de 2025

Instituto de investigación de Hidrobiología, Facultad de Ciencias Naturales
Sede Trelew, Universidad Nacional de la Patagonia San Juan Bosco

Señores

Centro Desarrollo y Pesca Sustentable

en representación del Grupo Cliente

Certificación MSC - Pesquería de langostino en aguas nacionales

SU DESPACHO

De mi mayor consideración:

Tengo el agrado de dirigirme a ustedes en relación con vuestra consulta sobre la participación del Instituto de Investigación de Hidrobiología de la Universidad Nacional de la Patagonia San Juan Bosco (UNPSJB) en la ejecución de las tareas del Plan de Acción propuesto por el Grupo Cliente del proceso de certificación MSC de la pesquería de langostino en aguas nacionales.

En ese sentido, por intermedio de la presente, hago constar el aval del Instituto de Investigación de Hidrobiología de la UNPSJB para colaborar en la ejecución de las tareas relacionadas con las Condiciones 2 y 3, establecidas para la mejora del desempeño de los indicadores 2.3.1 (Especies ETP - Estado), 2.3.2 (Especies ETP – Manejo), en tanto dichas tareas están relacionadas con los objetivos, funciones y líneas de investigación de este Instituto, en particular a lo relacionado con la interacción de las pesquerías con condrictios. Asimismo, indicar que los requerimientos del Instituto de Investigación de Hidrobiología de la UNPSJB para la implementación de las tareas antedichas serán asentados mediante uno o más convenios específicos suscritos para tal fin, en los que se dejará establecida cualquier complementación técnica y financiera necesaria para lograr los objetivos planteados.

Sin otro particular, saludo a ustedes con la consideración
más distinguida.



Dra. María Eva Góngora

Instituto de investigación de Hidrobiología
Universidad Nacional de la Patagonia
San Juan Bosco.

Dirección
Gales 48
Trelew, Chubut, Argentina. CP 9100

Tel-Fax
+0054 0280 4421080 / 0280 4420549
Nº de int. 227/228

"2025 – AÑO DE LA RECONSTRUCCIÓN DE LA NACIÓN ARGENTINA"



*Secretaría de Agricultura, Ganadería y Pesca
Instituto Nacional de Investigación
y Desarrollo Pesquero*

Mar del Plata, 28 de noviembre de 2025

Señores
Centro Desarrollo y Pesca Sustentable
en representación del Grupo Cliente
Certificación MSC - Pesquería de langostino en aguas nacionales
SU DESPACHO

De mi mayor consideración:

Tengo el agrado de dirigirme a ustedes en relación con vuestra consulta sobre la participación del Instituto Nacional de Investigación y Desarrollo Pesquero (INIDEP) en la ejecución de las tareas del Plan de Acción propuesto por el Grupo Cliente del proceso de certificación MSC de la pesquería de langostino en aguas nacionales.

En ese sentido, por intermedio de la presente, hago constar el aval del INIDEP para colaborar en la ejecución de las tareas relacionadas con las Condiciones 1, 3, 4 y 5, establecidas para la mejora del desempeño de los indicadores 1.2.2 (Regla de Control), 2.3.2 (Condictios ETP – Manejo), 2.3.3 (Condictios ETP – Información) y 2.4.1 (Hábitats – Estado) en tanto dichas tareas están relacionadas con los objetivos, funciones y líneas de investigación de este Instituto. Asimismo, indicar que los requerimientos del INIDEP para la implementación de las tareas asociadas a la mejora de dichos indicadores serán asentados mediante uno o más convenios específicos suscritos para tal fin, en los que se dejará establecida cualquier complementación técnica y financiera necesaria para lograr los objetivos planteados.

Sin otro particular, saludo a ustedes con la consideración más distinguida.

WOHLER Otto
Cristian

Firmado digitalmente por WOHLER
Otto Cristian
Fecha: 2025.11.28 11:24:28 -03'00'



República Argentina - Poder Ejecutivo Nacional
AÑO DE LA RECONSTRUCCIÓN DE LA NACIÓN ARGENTINA

Nota

Número: NO-2025-134003717-APN-DNCYFP#MEC

CIUDAD DE BUENOS AIRES
Miércoles 3 de Diciembre de 2025

Referencia: Solicitud de aval para el cumplimiento de hitos anuales en el marco de la Certificación MSC de la pesquería de langostino (IF-2025-123790274-APN-DGDAGYP#MEC).

A: ALEJANDRA CORNEJO (CEDEPESCA),

Con Copia A:

De mi mayor consideración:

De mi mayor consideración:

Me dirijo a usted en respuesta a la nota de referencia, presentada por el Centro Desarrollo y Pesca Sustentable (CeDePesca) en representación del Grupo Cliente de la Certificación MSC de la pesquería de langostino (*Pleoticus muelleri*) en aguas nacionales.

Tras un análisis exhaustivo de lo solicitado, y en línea con el aval ya expresado por la Subsecretaría de Pesca y Acuicultura de la Nación, la Dirección Nacional de Coordinación y Fiscalización Pesquera hace propio y formaliza su compromiso de colaboración.

Se confirma el **aval institucional** de esta Dirección para colaborar activamente con las acciones y el monitoreo de los hitos anuales propuestos por el Grupo Cliente, en relación con el indicador de Cumplimiento de la Normativa (3.2.3) del estándar de certificación.

Esta colaboración se enfocará en:

- **Coordinación de Acciones:** Trabajar coordinadamente con las partes interesadas para mejorar el

cumplimiento del sistema de gestión aplicable a la pesquería.

- **Provisión de Información Oficial:** Suministrar la información oficial de la Dirección de Control y Fiscalización necesaria para que el Grupo Cliente pueda demostrar la reducción de sanciones/incumplimientos, conforme a los porcentajes establecidos para la segunda (al menos 30%) y tercera auditoría de supervisión (al menos el porcentaje que se indique).
- **Verificación Documental:** Aportar las pruebas documentales que permitan demostrar la reducción de sanciones/incumplimientos en al menos un 60% para la cuarta auditoría de supervisión (2029).
- **Certificación de Ausencia de Incumplimientos Sistemáticos:** Contribuir a la demostración de que no existen incumplimientos sistemáticos en la pesquería evaluada a partir de la cuarta auditoría.

Las tareas mencionadas se encuentran directamente relacionadas con los objetivos y funciones primordiales de este organismo en cuanto a la fiscalización y el control de la actividad pesquera, y se enmarcan en la promoción de una gestión pesquera sostenible.

Sin otro particular, y reiterando nuestra disposición a colaborar para el mantenimiento de la certificación MSC de la pesquería de langostino, le saluda muy atentamente.

Sin otro particular saluda atte.

Digitally signed by GESTION DOCUMENTAL ELECTRONICA - GDE
Date: 2025.12.03 12:59:24 -03:00

Arturo Idoyaga Molina
Director Nacional
Dirección Nacional de Coordinación y Fiscalización Pesquera
Ministerio de Economía

Digitally signed by GESTION DOCUMENTAL
ELECTRONICA - GDE
Date: 2025.12.03 12:59:25 -03:00

11.6 Surveillance

As it was described in the section 11.2.1 Site visit, stakeholder interviews were performed on-site in person or remotely. However, OIA analysed areas of risks of the implications for the assessment to conduct off-site visits during surveillances, determining no risk was detected. Also, meetings were addressed with several stakeholders (governments, research institutions, industry, etc.). The Table 25 describes the risk analysis to conduct site visit as remotely. Therefore, it was determined that surveillance level is 3 (1 on-site and 3 off-site surveillance audits).

Table 25. Areas of risks included in the risk assessment

Risk area	Key risks	Mitigations
Sufficient information to enable an effective and robust fishery assessment process and comprehensive assessment against the MSC Fisheries Standard	Ability to verify information remotely	There are ample opportunities and mechanisms to engage with clients and stakeholders including electronic forms of communication, such as videoconferencing phone conferencing (<i>i.e.</i> Google Meet, Microsoft Teams, Zoom), email and phone. The mechanisms are effective in the circumstances of the fishery. Fishery reports and other documented evidence that can be used to assess performance against the MSC Fisheries Standard can be easily and transparently checked remotely, due to such information being available publicly, such as being available on a website (<i>i.e.</i> CFP, INIDEP, SSPyA, Fishery Progress) or having been widely distributed and made publicly available to several stakeholders. The reports can be transmitted electronically, and veracity easily confirmed. Where information from electronic monitoring of position, observer data, logbooks, fisher interviews, dockside monitoring etc. is required to verify performance against the MSC Fisheries Standard, this information is available to be transmitted electronically to auditors in a form that can be easily interpreted. There is a high level of transparency in management, such that information on the fishery is widely and publicly available or known to the wider group of stakeholders. Any information provided on the fishery can be easily verified. The assessment does not require investigation of physical aspects of the fishery or there are reliable mechanisms to enable verification of these aspects from a remote location, because all aspects of fishing operation are described by INIDEP in technical reports.
	Ability to engage with stakeholders, deliver a robust stakeholder consultation process and conduct interviews with stakeholder	All team members have conducted previously other MSC assessments (<i>i.e.</i> surveillances) against remotely conditions. The participation of stakeholders is high, due they can

		participate in the preference location and not move to “meeting site”.
	Ability to gather information and carry out stakeholder consultations if the Risk Based Framework is being used to assess data-deficient PIs	There is no proposed to apply RFB methodology during the surveillance audits in outcome PIs of Principles 1 and 2.
	Availability of information	It was identified many information gaps in the ACDR and CPRDR. A remote site visit was sufficient to obtain the necessary information. Site visit activities considered a several stakeholders located in different sites of Argentina, where the fishery is conducted. So, a remote site visit could facilitate the availability of documents.
	Ability to understand the context, scale, and intensity of the fishery operations	All team members have knowledge of context, scale and intensity of fishery operations.
Sufficient communication capability to effectively plan, conduct interviews and facilitate information sharing as per IAF ID 4: 2018.	Availability of information and communication technology (ICT).	The assessment team are training to achieve site visit remotely using ICT. Also, OIA supports meetings to ensure IADF requirements.
	Ability to clearly exchange information between the assessment team, prospective fishery client and stakeholders and to be understood by all parties when parties speak different languages.	Team members and stakeholders speak a common language (Spanish). No translator is required.
	Ability to schedule remote site visit activities at reasonable mutually convenient times when parties are located across different time zones	Chile and Argentina have the same time zone, so there is no required to adjust meeting with located time zone.

Table 26. Fishery surveillance program

Surveillance level	Year 1	Year 2	Year 3	Year 4
Level 3	Off-site surveillance audit	Off-site surveillance audit	Off-site surveillance audit	On-site surveillance audit and & re-certification site visit

Table 27. Timing of surveillance audit

Year	Anniversary date of certificate*	Proposed date of surveillance audit	Rationale
1	February 2027	March 2027	In the FDR stage, the surveillance audit date is proposed to be delayed to March to meet with the main stakeholders involved in the client action plan after summer holiday recess.
2	February 2028	March 2028	In the FDR stage, the surveillance audit date is proposed to be delayed to March to meet with the main stakeholders involved in the

			client action plan after summer holiday recess.
3	February 2029	March 2029	In the FDR stage, the surveillance audit date is proposed to be delayed to March to meet with the main stakeholders involved in the client action plan after summer holiday recess.
4	February 2030	March 2030	In the FDR stage, the surveillance audit date is proposed to be delayed to March to meet with the main stakeholders involved in the client action plan after summer holiday recess.

(*) During each stage of certification process, the team will adjust anniversary date according to publicly timeline and potential delays.

Table 28. Surveillance level justification

Year	Surveillance activity	Number of auditors	Rationale
1	Off-site audit	3 auditors	Information needed to verify progress towards all conditions can be provided remotely in year 1.
2	Off-site audit	3 auditors	Information needed to verify progress towards all conditions can be provided remotely in year 2.
3	Off-site audit	3 auditors	Information needed to verify progress towards all conditions can be provided remotely in year 3.
4	On-site visit	3 auditors	Information needed to verify progress towards all conditions can be provided remotely in year 4. It is assumed that this site visit will be combined with the site visit for the reassessment, so the team can carry out both processes at the same time.

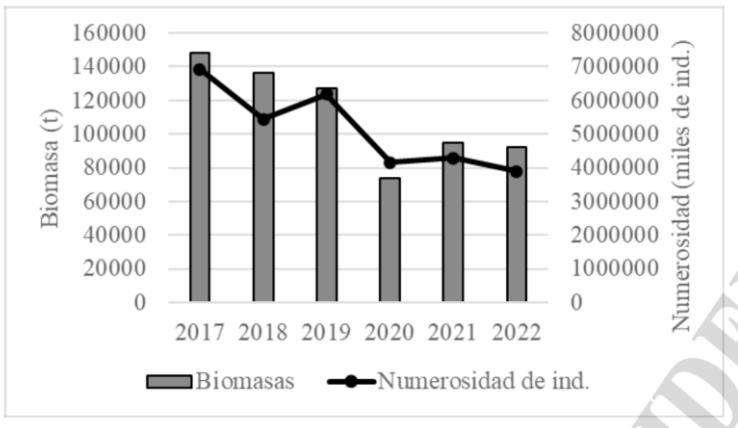
11.7 Risk-Based Framework outputs

During the Announcement Comment Draft Report stage, the team identified that there are no available stock status reference points, derived from analytical stock assessment or using empirical approaches for target species (Argentine red shrimp – *Pleoticus muelleri*). Therefore, the team shall undertake two RBF methodologies for PI 1.1.1 as Consequence Analysis (CA) and Productivity Susceptibility Analysis (PSA).

Also, the team concluded that there are no available biologically based limits, derived either from analytical stock assessment or using empirical approaches for main secondary species that are impacted by the UoA. The full list of components to be discussed or evaluated using PSA methodology is available in the background of the Principle 2. According to the PF4.1.4 of MSC Fisheries Standard v2.01, 'the team may elect to conduct a PSA on "main" species only when evaluating PI 2.1.1 or 2.2.1'. In the same way, PF5.3.2 states that 'the final PI score shall be capped by the team in cases where only a subset of the total number of species has been evaluated; if the team has only considered "main" species in the PSA analysis, the final PI score shall not be greater than 80'. Taking to account this approach and considered that all 'minor' species automatically meet SG80, the team decided not include them in the PSA analysis.

11.7.1 Consequence Analysis (CA)

Table 29. Consequence Analysis for PI 1.1.1 - Stock status outcome

Principle 1: Stock status outcome	Scoring element	Consequence subcomponents	Consequence score																					
	<i>Pleoticus muelleri</i>	Population size	80																					
		Reproductive capacity																						
		Age/size/sex structure																						
		Geographic range																						
Justification for most vulnerable subcomponent	The evolution of biomass and number of individuals estimated for the summer campaigns between 2017 and 2022 show a gradual decline. Minor improvements can be evidenced in 2021, possibly a result of with a reduction in the fishing efforts in 2020 associated with union-related issues and the Covid-19 outbreak, which affected the start of the freezing fleet activity. The greatest difference can be seen in the number of individuals, which is the most salient indicator to be considered in the monitoring of the population status throughout time. <table><caption>Data extracted from the chart</caption><thead><tr><th>Year</th><th>Biomasa (t)</th><th>Numerosidad (miles de ind.)</th></tr></thead><tbody><tr><td>2017</td><td>~145,000</td><td>~6,500,000</td></tr><tr><td>2018</td><td>~135,000</td><td>~5,500,000</td></tr><tr><td>2019</td><td>~125,000</td><td>~6,000,000</td></tr><tr><td>2020</td><td>~75,000</td><td>~4,500,000</td></tr><tr><td>2021</td><td>~95,000</td><td>~5,000,000</td></tr><tr><td>2022</td><td>~90,000</td><td>~4,000,000</td></tr></tbody></table> Moriondo Danovaro <i>et al.</i> (2022b) highlight that the applied fishing effort is an important regulator of the population, since changes in the fishing effort produce rapid changes in the population numbers. Since 2006 total annual landings reported have experienced a constant increase, reaching a record of 254,925 t in 2018. Before this, a great variability in the annual landings was documented. It should be noted that information on number of individuals is not available outside the 2017-2022 period. Space-time analysis of size structure of mature females demonstrates that bigger sizes are found in waters outside San Jorge Gulf during winter and in Rawson as of spring (Fernandez <i>et al.</i>, 2012). Since 2014, they were observed at 41° – 42° S and 60° – 62° W (Fernandez & Macchi, 2016). The distribution of mature and ovigerous females indicates that spawning takes place throughout the Patagonian coast between parallels 42° and 47° S, and it concentrates in three main sectors: to the south of Port of Rawson (43°20' to 44°20' S, from the coast up to 64° W); north of the San Jorge Gulf (from Rasa Island to Solano Bay) and south of the San Jorge Gulf (near Bajo Mazarredo Bay, between the coast and parallel 46°30' S and between meridians 66°10' and 67°00' W). Spawning occurs in association with oceanographic fronts of high productivity, which ensures high food availability and quality for larvae survival. While larval survival is related to environmental variation, recruitment also appears to be related to parental stock abundance. Female seasonal maturation progresses through five stages, achieving maturity as early as winter (August), whereas males show little seasonal cycle and mature males can be found throughout the year. Spawning occurs during the Spring-Summer months (October-March) but there is considerable latitudinal variation; in northern areas (including Rawson) spawning extends from October to April whereas in southern-most areas it occurs later, from November-December to March (De la Garza <i>et al.</i>, 2017). Fecundity is high and varies with environmental conditions, female size and latitude. Potential fecundity values indicate a high individual breeding potential for Argentine red shrimp (Fernandez & Macchi, 2016). Given that <i>P. muelleri</i> is characterized by a relatively short life cycle, a high and variable growth rate, high reproductive potential, and an almost total replacement of the available biomass between two consecutive			Year	Biomasa (t)	Numerosidad (miles de ind.)	2017	~145,000	~6,500,000	2018	~135,000	~5,500,000	2019	~125,000	~6,000,000	2020	~75,000	~4,500,000	2021	~95,000	~5,000,000	2022	~90,000	~4,000,000
Year	Biomasa (t)	Numerosidad (miles de ind.)																						
2017	~145,000	~6,500,000																						
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2020	~75,000	~4,500,000																						
2021	~95,000	~5,000,000																						
2022	~90,000	~4,000,000																						

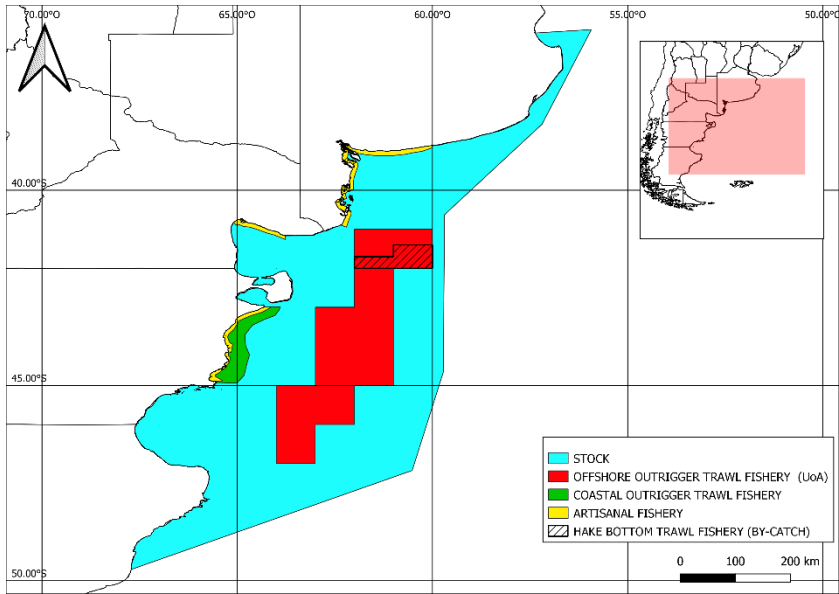
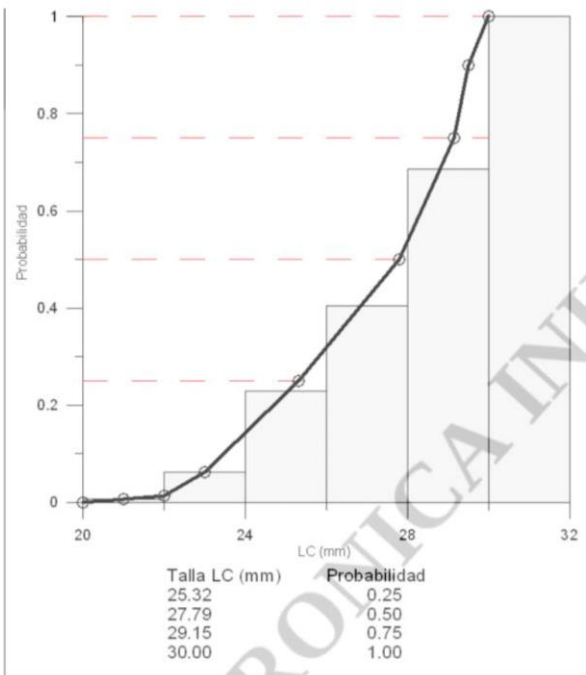
	fishing seasons, it risks growth overfishing and recruitment overfishing (Bertuche <i>et al.</i>, 2000a, 2000b; De la Garza, 2006). Minimizing these risks and understanding the population dynamics guides the research and management of the Argentine red shrimp fishery. Argentine red shrimp is assessed as a single stock. Bertuche <i>et al.</i> (2000a, 2000b) explain that given that the population dynamics of the species includes processes that occur relatively rapidly and continuously, and that are uniformly variable in space and time (e.g. growth rates, recruitment, spawning), it is not possible to set spatial and temporal borders for these processes or to define functional units (real stock units or cohorts) within which certain population parameters would remain constant. It is important to emphasize that the fishery under assessment is conducted in a wide geographical area, within an AVJM, without consideration for the individuals' sex, but applying juvenile protective measures. Taking this into account, and contemplating the arguments above mentioned, considering a consequence subcomponent other than population size as the most vulnerable would be irrelevant.
Justification for consequence score	Even though a decreasing tendency has been observed in the relationship between landings and biomass, with a steep decline from 2019 to 2020, some recovery can be observed in the 2020-2021 period. In addition, the estimation period (2027-2021) only spans 5 years, and begins in years when landings reached historic maximum values for shrimp fishery. Moriundo Danovaro <i>et al.</i> (2022b) posit that the record number of 250.000 t could not have been maintained in time, considering that said volume is the possible maximum limit of the capture, and that sustainable fishery would range around 200.000 t instead. On the other hand, the biomass and number of individuals estimated for the 2020-2022 period present a stable tendency, but a longer series should be considered and there are no estimates for the current year. It is advisable that summer campaigns be guaranteed to allow for an accurate biomass estimation thus giving continuity to this indicator assessment, and that a longer series be analysed. Despite all the variations affecting the shrimp population, the annual landings performance has consistently exceeded the 200.000 t in the last years. Even though, and as it has been mentioned before, no longer time series is available for the analysis of the number of individuals. Considering the capture historical series (Figure 6), there has been a steady increase since 2008, reaching a maximum in the number of individuals in 2018. It is concluded that there has been possible detectable change in the population size but with minimal impact on population dynamics. Therefore, a score of 80 is awarded. It is noted that the effect of the fishery versus natural causes on these changes are unknown. Further continuity to quantitative studies on stock evaluation is necessary. Some efforts have been made in this respect, but it is important that these be continued in time and be reinforced.

11.7.2 Productivity Susceptibility Analysis (PSA)

Table 30. PSA productivity and susceptibility attributes and scores for Argentine red shrimp (*Pleoticus muelleri*)

Performance Indicator	1.1.1	
Productivity		
Scoring element (species)	Argentine red shrimp (Pleoticus muelleri)	
Attribute	Rationale	Score
Average age at maturity	Less than 5 years	1
Average maximum age	Less than 10 years	1
Fecundity	As it has been mentioned in 10.1.1.1. <i>Biology and ecology of Pleoticus muelleri</i> , the mean relative fecundity was >8,500 oocytes per gram female (Fernandez & Macchi, 2016a), which results in a high fecundity, >20,000 eggs per year.	1
Average maximum size Not scored for invertebrates	NA not scored for invertebrates	NA

Average size at maturity Not scored for invertebrates	NA not scored for invertebrates	NA
Reproductive strategy	Broadcast spawner (P1 Background, a. Biology and ecology of <i>Pleoticus muelleri</i>)	1
Trophic level	< 2.75	1
Density dependence Invertebrates only	During the site visit, INIDEP researchers noted that the resource's historic abundance record allowed for the score to be lower than 3 (which was the score awarded to the preliminary RBF) and provided evidence that support this claim. The resource has experience three periods of low shrimp abundance during 1987, 1995 and 2005. These periods were characterized with low abundance of shrimp at the start of their reproductive process, with sizes equal to or larger than that at their first reproductive maturity. Only a few years after these low periods the population experimented an increase in abundance (Fischbach <i>et al.</i>, 2009). Even though there is no evidence to support a compensatory or dispensatory population dynamic, the recovery of the population after low abundance periods in 2005 can serve as evidence to award scoring =2	2
Susceptibility		
Fishery Only where the scoring element is scored cumulatively	Offshore outrigger trawl fishery (UoA) – Target species	
Attribute	Rationale	Score
Areal Overlap	The fishery in national jurisdiction is concentrated in an area of 90,000 km², which signifies a 19.5% overlap with the area of stock. This area was resized based on the site visit based on the contributions from the INIDEP shrimp program researchers, who considered that the area proposed in the preliminary RDF was bigger and did not coincide with the one proposed based on the capture records in the temporal spaces in the last five years. According to the clause PF4.4.6.b, 'if the impacts of fisheries other than the UoA are taken into account, the team shall score the areal overlap as the combined overlap of all listed fisheries with the areal concentration of a stock'. So, the team must sum the total percentage overlap of all fishery activity with the areal concentration of a stock. Therefore, the sum of the total percentage overlap is 23.5% and the risk is considered Medium, thus the score awarded is =2 (10-30% overlap). This area was resized based on the site visit based on the contributions from the INIDEP shrimp program researchers, who considered that the area proposed in the preliminary RDF was bigger and did not coincide with the one proposed based on the capture records in the temporal spaces in the last five years.	2

												
Encounterability	High overlap with fishing gear. The fishing gear operates at the depth at which the species concentrates.	3										
Selectivity of gear type	Individuals < size at maturity are regularly (5-50%) caught (a) and individuals < half the size at maturity (15 mm cephalon-pereon length) can escape or avoid the gear (b). INIDEP Reports have shown that during 2023 juvenile captures was 8%. The next figure and Figure 16 (De la Garza & Fischbach, 2009; De la Garza & Moriondo Danovaro, 2021) show the selectivity of the gear used by the UoA outrigger trawl fleet. These demonstrate that the probability of capture of individuals with a cephalon-pereon length less than 20 mm is less than 1%.  <table><thead><tr><th>Talla LC (mm)</th><th>Probabilidad</th></tr></thead><tbody><tr><td>25.32</td><td>0.25</td></tr><tr><td>27.79</td><td>0.50</td></tr><tr><td>29.15</td><td>0.75</td></tr><tr><td>30.00</td><td>1.00</td></tr></tbody></table> <i>Figura 8: Langostino patagónico. 1992-2008. Curva de probabilidad de captura del langostino patagónico</i>	Talla LC (mm)	Probabilidad	25.32	0.25	27.79	0.50	29.15	0.75	30.00	1.00	2
Talla LC (mm)	Probabilidad											
25.32	0.25											
27.79	0.50											
29.15	0.75											
30.00	1.00											

	This lowers the score of item a. to =2, and item b. to =2 (individuals < half the size at maturity can escape or avoid gear). Thus, the score awarded is 2.	
Post capture mortality	Retained species dead when released	3
Catch (weight) Only where the scoring element is scored cumulatively	This fishery represents 67% of total stock removals.	0.67
Fishery Only where the scoring element is scored cumulatively	Coastal outrigger trawl fishery – Target species	
Attribute	Rationale	Score
Areal Overlap	Only the fishery operated by the coastal chilling fleet (composed of fishing vessels between 12 and 21 m in length) is allowed in the ZEPR. The ZEPR only comprises a small area when compared with the whole area of stock distribution. The coastal trawl fishery area constitutes a surface of approximately 10,500 km², which signifies a 2.3% overlap with the area of stock. The areal overlap comprising the impact of all fisheries is 23.5%, thus the score awarded is =2 (10-30% overlap).	2
Encounterability	High overlap with fishing gear. The fishing gear operates at the depth at which the species concentrates.	3
Selectivity of gear type	Individuals < size at maturity are rarely caught (a) and individuals < half the size at maturity are retained by the gear (b). The capture of individuals smaller than the size at maturity occurs in less than 5% of the gear deployments. As it has been mentioned, the last figure and Figure 16 (De la Garza & Fischbach, 2009; De la Garza & Moriondo Danovaro, 2021) show the selectivity of the gear used by the outrigger trawl fleet. These demonstrate that the probability of capture of individuals with a cephalon-pereon length less than 20 mm is less than 1%. This lowers the score of item a. to =1, and item b. to =2 (individuals < half the size at maturity can escape or avoid gear). Since the scores for each item differ, the score assigned should be the average of the 2 categories, rounded up to the nearest whole number on the 1:3 scale (PF4.4.8 d) and thus the score awarded is 2.	2
Post capture mortality	Retained species dead when released.	3
Catch (weight) Only where the scoring element is scored cumulatively	This fishery represents 26% of total stock removals.	0.26

Fishery Only where the scoring element is scored cumulatively		
Artisanal fishery – Target species		
Attribute	Rationale	Score
Areal Overlap	Only the fishery operated by the coastal chilling fleet, composed of fishing vessels up to 10 m in length, covering an area of 8,000 km² which constitutes a 1.7% overlap with the area of stock. The areal overlap comprising the impact of all fisheries is 23.5%, thus the score awarded is =2 (10-30% overlap).	2
Encounterability	High overlap with fishing gear. The fishing gear operates at the depth at which the species concentrates.	3
Selectivity of gear type	Individuals < size at maturity are regularly caught (a) and individuals < half the size at maturity are retained by the gear (b). The capture of individuals smaller than the size at maturity occurs in less than 50% of the gear deployments. As it has been mentioned, the last figure and Figure 16 (De la Garza & Fischbach, 2009; De la Garza & Moriondo Danovaro, 2021) show the selectivity of the gear used by the outrigger trawl fleet. These demonstrate that the probability of capture of individuals with a cephalon-pereon length less than 20 mm is less than 1%. This lowers the score of item a. to =2, and item b. to =2 (individuals < half the size at maturity can escape or avoid gear). Thus, the score awarded is 2.	2
Post capture mortality	Retained species dead when released	3
Catch (weight) Only where the scoring element is scored cumulatively	This fishery represents 6% of total stock removals.	0.06

Fishery Only where the scoring element is scored cumulatively		
Hake bottom trawl fishery - By-catch		
Attribute	Rationale	Score
Areal Overlap	During the site visit, the client group reported that, between February and May, a group of hake fishing vessels operating north of the juvenile hake closed area reported shrimp by-catch. The Federal Fisheries Council (CFP) authorized these vessels to retain shrimp by-catch up to a maximum of 20% of the total landing. This information was confirmed and expanded during the site visit with participation of INIDEP researchers (Pajaro, 2025; 2024), the Fisheries and Aquatic Resources Undersecretary, the Fisheries Control and Enforcement Directorate, and the Fisheries Planning and Management Directorate. The fishery operated by the chilling fleet bottom trawl catch target hake (<i>M. hubbsi</i>) and by-catch shrimp (<i>P. muelleri</i>), covering an area of 8,500 km² which constitutes a 1.9% overlap with the area of stock, and completely overlap with the Offshore outrigger trawl fishery area (UoA). The areal overlap comprising the impact of all fisheries is 23.5%, thus the score awarded is =2 (10-30% overlap).	2

Encounterability	High overlap with fishing gear. The fishing gear operates at the depth at which the species concentrates.	3
Selectivity of gear type	Individuals < size at maturity are regularly caught (a) and individuals < half the size at maturity are retained by the gear (b). The capture of individuals smaller than the size at maturity occurs in less than 50% of the gear deployments. As it has been mentioned, the selectivity of the gear used by the bottom trawl fleet demonstrate that the probability of capture of individuals with a cephalon-pereon length less than 20 mm is less than 1%. This lowers the score of item a. to =2, and item b. to =2 (individuals < half the size at maturity can escape or avoid gear). Thus, the score awarded is 2.	2
Post capture mortality	Retained species dead when released	3
Catch (weight) Only where the scoring element is scored cumulatively	This fishery represents less than 1% of total stock removals.	0.01

Table 31. PSA productivity and susceptibility attributes and scores for Kelp gull (*Larus dominicanus*)

Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Family Laridae: Kelp gull (<i>Larus dominicanus</i>)	
Attribute	Rationale	Score
Average age at maturity	Kelp gull reaches sexual maturity at 4 years old. (Source: Kelp gull (<i>Larus dominicanus</i>) longevity, ageing, and life history (senescence.info))	1
Average maximum age	Maximum observed longevity ranged between 17.5 and 22.1 years (Simeone <i>et al.</i> , 2020), 27 years (Source: Kelp gull (<i>Larus dominicanus</i>) longevity, ageing, and life history (senescence.info))	2
Fecundity	The female normally lays 2 or 3 eggs (Leichtle, 2020).	3
Average maximum size Not scored for invertebrates	This species ranges from 54 to 65 cm (21 to 26 in), total length, from 128 to 142 cm (50 to 56 in) in wingspan and from 540 to 1,390 g (1.19 to 3.06 lb) in weight (Leichtle, 2020).	1
Average size at maturity Not scored for invertebrates	There is no estimation of average size at maturity. The team decided to take in consideration the maximum length size of 65 cm TL.	1
Reproductive strategy	The Kelp gull breeds on coasts and islands through much of the southern hemisphere. It is found on several sub-Antarctic islands, on the Antarctic peninsula, on the southern coast of Australia and all of New Zealand, on the southern coast of Africa and Madagascar, and on the coast of South America as far north as Ecuador and southern Brazil (del Hoyo <i>et al.</i>, 1996). The kelp gull in Punta Leon shows a varied use of environments and nesting sites. It was recorded nesting in open ground, on and under bushes, and on the gravel beach (Malacalza, 1987), thus suggesting a high capacity for expansion in the area (Yorio <i>et al.</i>, 1992). The species breeds between late-September and January in colonies of up to several hundred pairs (occasionally nesting solitarily and remains gregarious outside of the breeding season (Del Hoyo <i>et al.</i>, 1996; Hockey <i>et al.</i>, 2005).	3

	The nest is a bulky structure of dried plants or seaweed placed on bare rock, sand or mud substrates in well-vegetated sites (with grasses, sedge, rushes and other herbaceous plants) at the base of bushes, trees, rocks, walls or other vertical structures (Higgins & Davies, 1996; Del Hoyo <i>et al.</i>, 1996). The kelp gull nested frequently with other species of seabirds and sea lions and had a positive association with the Olrog's Gull (<i>Larus atlanticus</i>) (Garcia Borboroglu, 2009). Its reproductive population in marine environments of Patagonia was estimated at more than 100,000 pairs distributed in 140 colonies (Yorio <i>et al.</i>, 2015).	
Trophic level	Its diet consists of molluscs (<i>e.g.</i> mussels, cuttlefish, <i>Sepia</i> spp. and terrestrial snails), echinoderms, sponges, arthropods (<i>e.g.</i> swarming termites, crabs, isopods, and amphipods), macrozooplankton, fish, worms, reptiles (<i>e.g.</i> snakes), amphibians (<i>e.g.</i> frogs), small mammals, birds and berries (Del Hoyo <i>et al.</i>, 1996; Hockey <i>et al.</i>, 2005). The species also scavenges refuse, sewage and carrion. The Kelp gull (<i>Larus dominicanus</i>) is a generalist species undergoing a process of range expansion and population increase in Patagonia. The ability of utilizing anthropogenic waste is one of the factors that might have enabled this expansion into freshwater environments (Frixione <i>et al.</i>, 2012). The Kelp gull is widely distributed in Argentina. Several authors suggest that the species is expanding its geographic distribution due to its capacity to exploit food resources derived from human activities. This study shows the diet composition of the Kelp Gull during breeding season in a colony of 3114 nests located in the Del Puerto Island, Bahía Blanca estuary, Buenos Aires Province, Argentina. A total of 1024 pellets, five chick regurgitates, and 12 fledgling regurgitates collected between October and December 2003 were analysed. A total of 39 prey categories were recorded, being grains (mainly sunflower) and cattle carrion the most important items (54.6% and 29.0%, respectively). These prey items are available in large quantities in the proximity of the colony, which could favour the population increase observed in the last years. Fishes, marine snails, insects, barnacles, garbage, chitons, mussels, clams, and rodents were also observed. Gulls from this colony, as in other colonies along the Patagonian coast, are generalists with a strong tendency to the exploitation of human-derived resources and, to a lesser degree, of seashore preys (Frixione <i>et al.</i>, 2016). Kelp gulls are omnivores like most gulls, and they will scavenge as well as seek suitable small prey. They gather on landfills and a sharp increase in population is therefore considered as an indicator for a degraded environment.	3
Density dependence Invertebrates only	N/A	N/A
Susceptibility		
Fishery Only where the scoring element is scored cumulatively	Not applicable. According to the term 'MSC UoAs and the assessment of cumulative impacts', the MSC defines that for secondary species, cumulative impacts only need to be considered in cases where two or more UoAs have 'main' catches that are 'considerable', defined as a species being 10% or more of the total catch. Therefore, the cumulative impact is not assessed for seabirds.	
Attribute	Rationale	Score
Areal Overlap	The kelp gull (<i>Larus dominicanus</i>) is widely distributed in the Southern Hemisphere, using continental and marine-coastal aquatic environments for	2

reproduction. Along the Argentine coast the species is distributed in the province of Buenos Aires, the Patagonian coast and the Antarctic peninsula (Canevari *et al.*, 1991; Bertellotti & Yorio, 1999).



(Source: *Larus dominicanus* (Gaviota Cocinera - Kelp Gull) | SIB, Parques Nacionales, Argentina)

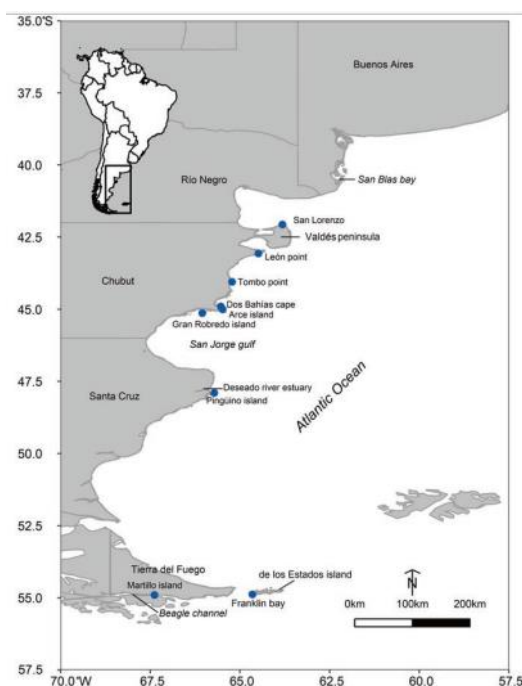


Fig. 1 and 2. Geographical location of Patagonian seabird colonies (Quintana *et al.*, 2022)

Punta Tombo Natural Protected Area and Punta Leon in Chubut are two of the greater locations of seabird's colonies, near chilling shrimp fishery fishing grounds.

Considering the distribution of this species and fishing operation map (*i.e.*, red area), the team assigned a MEDIUM RISK SCORE.

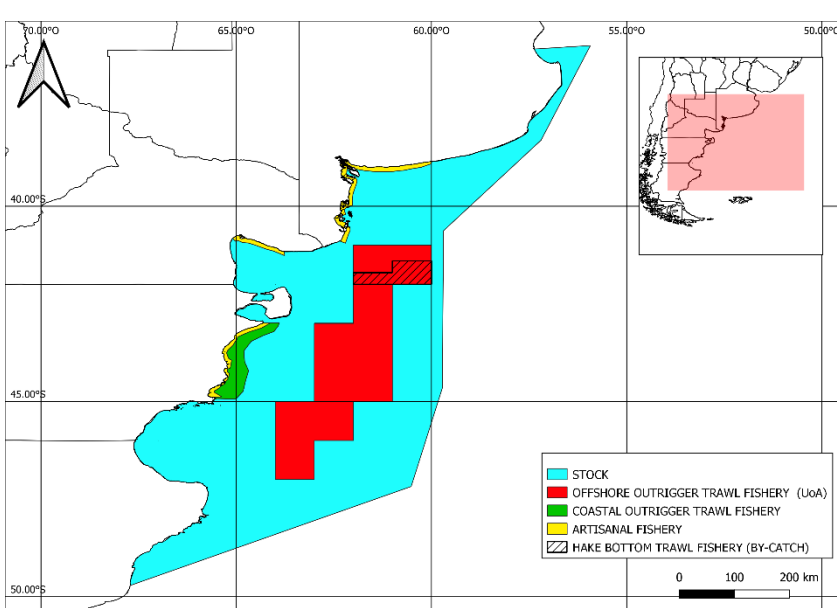
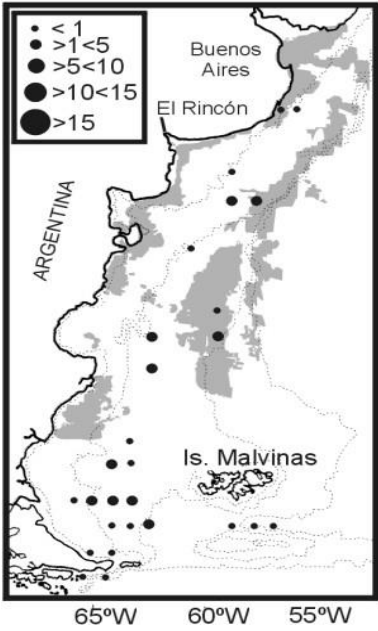
		
Encounterability	Kelp gull, breed in 68 colonies along 2,500 km of coastline in Patagonia, Argentina, uses a wide variety of nesting environments including areas with shrubs, grasses and grasses that provide varying degrees of cover: substrates of different composition and slope. 80% of the colonies were located on islands, whose probability of occupation increased with the distance to the mainland and the availability of vegetation. Vegetation cover represented a key component of nesting habitat for the cook gull in Argentina (Garcia Borboroglu, 2009). Considering the encounterability, the team assigned a LOW RISK SCORE.	1
Selectivity of gear type	The seabird's interaction with red shrimp fishery was registered by Palacios (2023), during surveys carried out on the Offshore Patagonian Shrimp Fishery Seasons 2016, 2019 and 2022. A total of 1,298 fishing hauls were monitored. No seabird contacts were observed with the fishing gear and/or vessel (<i>i.e.</i> collisions) during the monitored fishing hauls. Still, new information shows that there is an important attendance of seabirds in different management areas of the fishery, though no contacts (consequently incidental mortality) have been recorded. So, the team assigned a LOW RISK SCORE.	1
Post capture mortality	During assessments, no interactions (<i>i.e.</i> birds colliding with the fishing gear and/or parts of the vessel) were observed during the manoeuvres. So, the team assigned a LOW RISK SCORE.	1
Catch (weight) Only where the scoring element is scored cumulatively	N/A	N/A

Table 32. PSA productivity and susceptibility attributes and scores for Cape petrel (*Daption capense*)

Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Family Procellariidae: Cape petrel (<i>Daption capense</i>)	
Attribute	Rationale	Score
Average age at maturity	Cape petrels reach sexual maturity at 5 years age (https://oceanwide-expeditions.com/to-do/wildlife/cape-petrel/)	2
Average maximum age	Generation Length (years): 23.2 (Birdlife International, 2018)	2

Fecundity	Low fecundity (single egg, clutch per breeding attempt) (Birdlife International, 2018).	3
Average maximum size Not scored for invertebrates	The maximum length of the cape petrel varies between 38-40 cm: while the wingspan between 83 and 88 cm (Birdlife International, 2018)	1
Average size at maturity Not scored for invertebrates	There is no estimation of average size at maturity. The team decided to take in consideration the maximum length size of 38-40 cm TL.	1
Reproductive strategy	The breeding season starts in November with colonies of variable sizes being formed on cliffs or steep rocky slopes. It nests in shallow crevices, in scrape on rocky ledges, on stable beds of gravel or among boulders (Del Hoyo <i>et al.</i>, 1992). As eggs need the parental protection, the risk established by the team is higher.	3
Trophic level	Trophic level between Antarctic fulmarine petrels can varied between 3.6 to 4.7, which average is 4.15 (Hodum & Hobson, 2000) The diet of Cape Petrel, in the Antarctic continent and reproductive localities would be based exclusively on the krill <i>Euphasia superba</i> (Beck 1969; cited in Birdlife International, 2018). Its diet consists of small crustaceans (genus <i>Euphausia</i>) as well as fish, squid, carrion, and trawling discards, so it regularly follows boats. Its diet comprises mainly of krill, but also fish, squid, offal, carrion and bycatch from ships, acquiring food by hydroplaning, dipping whilst on the wing and occasionally diving. It has been seen associated with whales and other seabirds and congregates in large flocks around trawlers (Del Hoyo <i>et al.</i>, 1992). The association between Cape petrel (<i>Daption capense</i>) and Silver Petrel (<i>Fulmarus glacialisoides</i>) is because they fly in mixed flocks and share the same capture strategies (Montalti & Orgueira, 1998). Therefore, they have the same diet, crustaceans and squid (Warham, 1990).	3
Density dependence Invertebrates only	N/A	N/A
Susceptibility		
Fishery Only where the scoring element is scored cumulatively	Not applicable. According to the term 'MSC UoAs and the assessment of cumulative impacts', the MSC defines that for secondary species, cumulative impacts only need to be considered in cases where two or more UoAs have 'main' catches that are 'considerable', defined as a species being 10% or more of the total catch. Therefore, the cumulative impact is not assessed for seabirds.	
Attribute	Rationale	Score
Areal Overlap	During breeding season, Cape Petrels feed around Antarctica's shelf and during the winter they range further north, as far as Angola and the Galapagos Islands, Ecuador. They breed on many islands of Antarctica and the sub-Antarctic islands, some going as far as the Auckland Islands, the Chatham Islands, Campbell Island (New Zealand). Their main breeding grounds were on the Antarctic Peninsula, South Georgia, Balleny Islands, the Kerguelen Islands as well as islands in the Scotia Sea (Del Hoyo <i>et al.</i>, 1992). The cape petrel has a wide distribution around the northern region of the Antarctic Peninsula and nearby islands. Breeding birds approach the territory during the breeding season. Cape Petrels migrate north from the CCAMLR	1

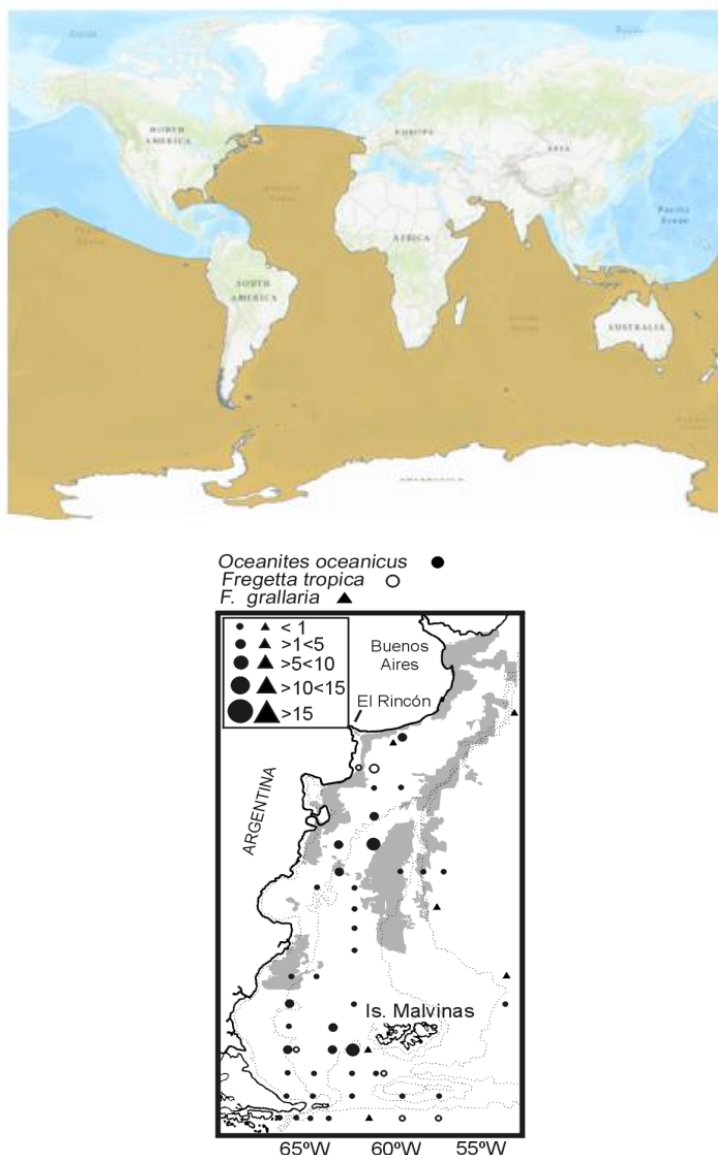
	Area in March, many wintering off the coasts of South America, South Africa and Australia. The Argentine Patagonian coast is an important area of study due to the influence that two large masses of water have in the region, the Malvinas Current (cold) and the Brazil Current (warm). The meeting of these masses with different characteristics occurs near the continental slope, approximately at 43° S. The resulting effect translates into the supply of nutrients to the surface, transforming it into a foraging area for seabirds present in the region (Jehl, 1974; Veit & Braun, 1984). <i>Daption capense</i>  Fig. 1. Distribution of densities of <i>Daption capense</i> recorded in Orgeira (2001). The circle key indicates the density values (individuals/km²). Spatial distributions of densities obtained during summer 1987 to 1996 at the continental platform and South Atlantic Ocean within a scope of 35° to 56° S and 53° to 69° W. Five geographical areas for large feeding seabird concentrations were identified, four of them north of 43° S and one south of 43° S. In all cases, the largest aggregations of feeding birds were recorded at coastal areas rather than marine areas (Orgeira, 2001). According to densities identified in the Figure 1 and fishing effort overlapping, the team assigned a LOW RISK SCORE.	
Encounterability	The Cape Petrel is pelagic seabird, especially in winter. It occurs mainly over cold waters beyond the continental shelf but can be found over inshore waters during breeding. The Cape Petrel nests in Antarctica and on numerous sub-Antarctic islands, and after the breeding season it disperses widely, regularly reaching up to approximately 25° S, but with specimens that in the Atlantic exceed the equator both off South America and in Africa (Birdlife International, 2018). Their flight consists of rapid wingbeats, alternating with stiff-winged glides. Swims and dives or dives for small fish and zooplankton. Considering the encounterability, the team assigned a LOW RISK SCORE.	1
Selectivity of gear type	No contacts were observed with the fishing gear and/or vessel (i.e. collisions) during the monitored fishing hauls. Considering, there are not direct and	1

	indirect seabird contact with fishing gear, the team assigned a LOW RISK SCORE.	
Post capture mortality	During assessments, no interactions (<i>i.e.</i> birds colliding with the fishing gear and/or parts of the vessel) were observed during the manoeuvres. So, the team assigned a LOW RISK SCORE.	1
Catch (weight) Only where the scoring element is scored cumulatively	N/A	N/A

Table 33. PSA productivity and susceptibility attributes and scores for Wilson's storm-petrel (*Oceanites oceanicus*)

Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Family Oceanitidae: Wilson’s storm petrel (<i>Oceanites oceanicus</i>)	
Attribute	Rationale	Score
Average age at maturity	Birds do not become sexually mature until they are approximately four to six years old, and show strong monogamous bonds which are formed in the year of pre-sexual maturity (Bretagnolle, 1996 cited in http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1034).	2
Average maximum age	Generation Length Wilson's Storm-petrel (<i>Oceanites oceanicus</i>): 15.6 years BirdLife International, 2018.	2
Fecundity	Rodriguez <i>et al.</i> , 2019: Low fecundity (single egg, clutch per breeding attempt)	3
Average maximum size Not scored for invertebrates	According growth parameters for <i>Oceanites oceanicus</i> , the maximum length is 19cm TL. https://www.sealifebase.se/summary/Oceanites-oceanicus.htm	1
Average size at maturity Not scored for invertebrates	There is no estimation of average size at maturity. The team decided to take in consideration the maximum length size of 19 cm TL.	1
Reproductive strategy	Nesting is restricted to rock outcrops and talus slopes, and nests were invariably in rock crevices, occasionally together with black storm petrels. https://www.sealifebase.se/summary/Oceanites-oceanicus.html	3
Trophic level	Wilson's Storm-petrel feeds in cold waters over continental shelves or inshore, with a diet of comprised mainly of planktonic crustaceans (especially krill) and fish (Del Hoyo <i>et al.</i> , 1992). Its diet shifts from mainly crustaceans during egg formation to an increased proportion of fish during chick-rearing and moulting (Quillfeldt <i>et al.</i> , 2005). According to the food and feeding habitats, the trophic level of this species is 3.3.	3
Density dependence Invertebrates only	N/A	N/A
Susceptibility		
Fishery Only where the scoring element is scored cumulatively	Not applicable. According to the term ‘MSC UoAs and the assessment of cumulative impacts’, the MSC defines that for secondary species, cumulative impacts only need to be considered in cases where two or more UoAs have ‘main’ catches that are ‘considerable’, defined as a species being 10% or more of the total catch. Therefore, the cumulative impact is not assessed for seabirds.	
Attribute	Rationale	Score
Areal Overlap	Wilson's storm-petrel (<i>Oceanites oceanicus</i> , henceforth WSP) is one of the most abundant seabird species that has a circumpolar distribution in the Southern Ocean extending up to Indian and Atlantic Ocean as far north as Malvinas Islands (Carboneras <i>et al.</i> , 2017). Small body size (at ~ 38 g, the	1

smallest Antarctic endotherm) constrains their distribution during Antarctic winters, forcing them to undertake long migrations during non-reproductive periods (Quillfeldt *et al.*, 2001; Drucker *et al.*, 2020). This species breeds exclusively in narrow crevices in the ice-free areas of Antarctica (Harris *et al.*, 2015) and a few islands (Bouvet, French Southern Territories, Heard, McDonald, New Zealand, South Georgia and the South Sandwich Islands – Birdlife International, 2023).



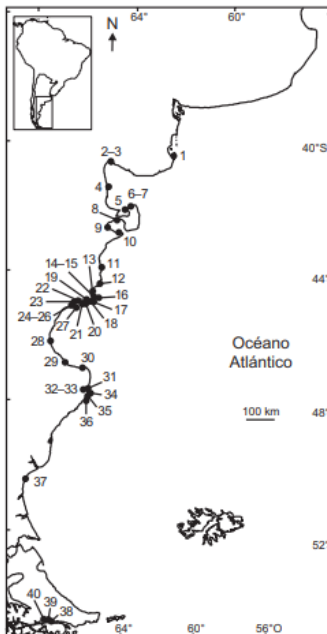
Densities spatial distributions obtained from 29 seabirds' species during summer 1987 to 1996 at the continental platform and South Atlantic Ocean within a scope of 35° S to 56° S and 53° W to 69° W, figure show three of them. Five geographical areas for large feeding seabirds' concentrations were identified, four of them north of 43° S and one south of 43° S. In all cases, the largest aggregations of feeding seabirds were recorded at coastal areas rather than marine areas (Orgeira, 2001).

According to densities identified in the Figures and fishing effort overlapping, the team assigned a LOW RISK SCORE.

Encounterability	The species undergoes trans-equatorial migration, spending the off-season in the middle latitudes of the north Atlantic and north Indian Ocean. A lower number of individuals also migrate to the Pacific. Inhabits open ocean found overseas and along shores. Exhibits dipping and pattering. Skips and hops over water surface while feeding. Typically, gregarious at sea. Often trail ships. Considering the encounterability and information available, the team assigned a LOW RISK SCORE.	1
Selectivity of gear type	According to Palacios (2023), in 2022, no seabird contacts were observed with the fishing gear and/or vessel (<i>i.e.</i> collisions) during the monitored fishing hauls. Interaction with seabirds and marine mammals in the shrimp fishery was recorded in 48 fishing hauls, nearby birds were counted, in which there were 30 Wilson storm petrel, with frequency of occurrence of 21 %, all during trawling. Considering, no seabird contact with fishing gear were observed, the team assigned a LOW RISK SCORE.	1
Post capture mortality	During assessments, no interactions (<i>i.e.</i> birds colliding with the fishing gear and/or parts of the vessel) were observed during the manoeuvres. So, the team assigned a LOW RISK SCORE.	1
Catch (weight) Only where the scoring element is scored cumulatively	N/A	N/A

Table 34. PSA productivity and susceptibility attributes and scores for South American tern (*Sterna hirundinacea*)

Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Family Laridae: South American tern (<i>Sterna hirundinacea</i>)	
Attribute	Rationale	Score
Average age at maturity	There is no information about average age maturity of South American tern then we are going to assume like Kelp gull. Reach sexual maturity at 4 years old. Kelp gull (<i>Larus dominicanus</i>) longevity, ageing, and life history (senescence.info)	1
Average maximum age	There is no information about average age maturity of South American tern then we are going to assume like Kelp gull. Maximum observed longevity ranged between 17.5 and 22.1 years (Simeone <i>et al.</i> , 2020).	2
Fecundity	Eggs (1 – 3) are laid from November until the last week of December (Goodall <i>et al.</i> , 1951).	3
Average maximum size Not scored for invertebrates	40-43 cm (Gaviotin sudamericano - AVES DE CHILE)	1
Average size at maturity Not scored for invertebrates	There is no estimation of average size at maturity. The team decided to take in consideration the maximum length size of 43 cm TL.	1
Reproductive strategy	In South America, it nests as far south as Peru on the Pacific coast, while on the Atlantic side it nests from the Beagle Channel in the south of Argentina to Espirito Santo in southern Brazil (Gochfeld & Burger, 1996; Yorio <i>et al.</i> , 1998).	3

	After reproduction, part of the population migrates to the north reaching Ecuador and Bahia in Brazil. Nests are a small dig in the soil or sand, around which adults they may eventually add small shells. Nest density it can be very high, reaching up to 3 nests per m² (Gochfeld & Burger, 1996).  <i>Location of 40 nesting colonies on the Argentine maritime coast between the years 1990 to 2005 (Source: Yorio, 2005)</i>	
Trophic level	It feeds mainly on small pelagic fish that it catches by swooping over them, as well as small decapod crustaceans and coleopteran insects (Yorio, 2005). It also feeds on fish remains thrown by fishing boats (Yorio, 2005).	3
Density dependence Invertebrates only	N/A	N/A
Susceptibility		
Fishery Only where the scoring element is scored cumulatively	Not applicable. According to the term 'MSC UoAs and the assessment of cumulative impacts', the MSC defines that for secondary species, cumulative impacts only need to be considered in cases where two or more UoAs have 'main' catches that are 'considerable', defined as a species being 10% or more of the total catch. Therefore, the cumulative impact is not assessed for seabirds.	
Attribute	Rationale	Score
Areal Overlap	The South American tern (<i>Sterna hirundinacea</i>) is a seabird endemic to the coasts of South America, inhabiting from Cape Horn to Brazil in the Atlantic Ocean (including the Malvinas Islands), and to Ecuador in the Pacific Ocean (Yorio, 2005; Portflitt-Toro <i>et al.</i>, 2018) The South American Tern is a colonial species, almost exclusively coastal.	1

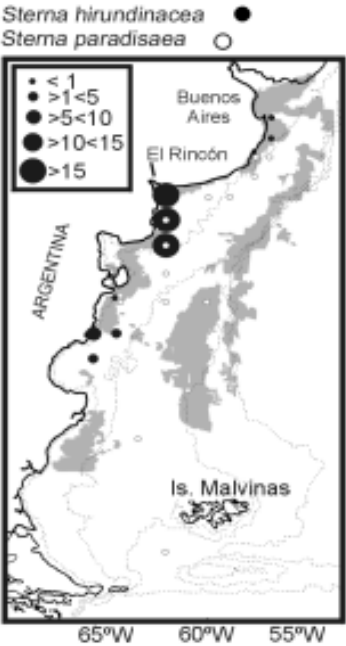
	 According to densities identified in the Figure and fishing effort overlapping, the team assigned a LOW RISK SCORE.	
Encounterability	As it is mentioned above, the South American tern is a colonial species, almost exclusively coastal. So, the team assigned a LOW RISK SCORE.	1
Selectivity of gear type	According to Palacios (2023), in 2022, no seabird direct contacts were observed with the fishing gear and/or vessel (<i>i.e.</i> collisions) during the monitored fishing hauls. Interaction with seabirds and marine mammals in the shrimp fishery was recorded in 48 fishing hauls, nearby birds were counted, in which there were 36 South American tern, 10% frequency of occurrence, all during trawling. Although this species inhabits coastal areas rather than marine areas (Orgeira, 2001). Considering that no seabird contacts with fishing gears were observed, the team assigned a LOW RISK SCORE.	1
Post capture mortality	During assessments, no interactions (<i>i.e.</i> birds colliding with the fishing gear and/or parts of the vessel). So, the team assigned a LOW RISK SCORE.	1
Catch (weight) Only where the scoring element is scored cumulatively	N/A	N/A

Table 35. PSA productivity and susceptibility attributes and scores for sooty shearwater (*Ardenna grisea*)

Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Family Procellariidae – Sooty shearwater (<i>Ardenna grisea</i>)	
Attribute	Rationale	Score
Average age at maturity	Sooty shearwater reaches sexual maturity at 9 to 10 years Sooty Shearwater Life Cycle: Nest Building To Fledging (and everything in between) - Binocular Base	2
Average maximum age	The average lifespan of a Sooty Shearwater is around 20 years. But there have been individual birds that have lived for more than 34 years according to ring records. Their lifespan depends on several factors including climatic	2

	conditions, pollution, the availability of food and predation. Sooty Shearwater Life Cycle: Nest Building To Fledging (and everything in between) - Binocular Base	
Fecundity	Sooty Shearwaters lay one egg per brood and only have one brood per season. Sooty Shearwater eggs are matt (non-glossy) white and measure around 77 x 48 mm in size. The pair only lay one egg which generally ensures that they can successfully raise their chick to the fledgling stage.	3
Average maximum size Not scored for invertebrates	It measures 40 – 51 cm long.	1
Average size at maturity Not scored for invertebrates	There is no estimation of average size at maturity. The team decided to take in consideration the maximum length size of 51 cm TL. Sooty Shearwater Life Cycle: Nest Building To Fledging (and everything in between) - Binocular Base	2
Reproductive strategy	Sooty Shearwaters breed in the southern hemisphere close to the ocean in forested or vegetated areas on islands or coastal headlands. They nest in huge colonies in the south Pacific and Atlantic oceans and on islands off Australia, New Zealand and South America. Nesting generally takes place between October and May with eggs being laid from late November to early December with the eggs hatching sometime in January. Both parents share the incubation of the egg which lasts for around 52 to 56 days. The parents will spend anywhere between 4 to 9 days incubating the egg before swapping with the other parent. After the breeding season ends, Sooty Shearwaters fly out to sea where they spend several months at a time. They split their time up with half spent feeding in shallow waters off the continental shelf and the other half flying over pelagic waters. Sooty Shearwater Life Cycle: Nest Building To Fledging (and everything in between) - Binocular Base	3
Trophic level	The sooty shearwater feeds on fish and squid. They dive to depths of up to 68 m, but they often fish more at the surface, especially following whales to catch the fish they scare away. They follow fishing boats to feed on the fish waste thrown overboard. It breeds around Antarctica, but regularly migrates to northern Chile, especially in winter. It often travels in groups and regularly follows ships; it can be seen feeding and scavenging alongside giant petrels at the sewage outlets along the coast of the Strait of Magellan. Fulmar Austral - eBird	3
Density dependence Invertebrates only	N/A	N/A
Susceptibility		
Fishery Only where the scoring element is scored cumulatively	Not applicable. According to the term 'MSC UoAs and the assessment of cumulative impacts', the MSC defines that for secondary species, cumulative impacts only need to be considered in cases where two or more UoAs have 'main' catches that are 'considerable', defined as a species being 10% or more of the total catch. Therefore, the cumulative impact is not assessed for seabirds.	
Attribute	Rationale	Score
Areal Overlap	The sooty shearwater breeds on small islands in the southern Pacific and Atlantic Oceans, mainly around New Zealand, the Malvinas Islands, Tierra del Fuego, as well as the Auckland Islands and Phillip Island, next to Norfolk Island. They undertake formidable migrations at the end of the breeding season (between March and May), following a circular route, traveling northward through the western Pacific and Atlantic Oceans, reaching the subarctic waters between June and July, where they cross from west to	1

east. They then return south across the eastern oceans between September and October, arriving back at their breeding grounds in November. They do not migrate in flocks, but as individuals, gathering only occasionally.

In the Atlantic, they cover distances of over 14,000 km from their breeding colonies in the Malvinas Islands (52°S 60°W) to the North Atlantic between 60 and 70° N, north of Norway; distances travelled in the Pacific are similar or greater, although the Pacific colonies are not as far south, lying between 35° and 50° S near New Zealand, and they travel as far north as the Aleutian Islands, and the wider Pacific makes the necessary movement longer. Recent tracking experiments have shown that shearwaters breeding in New Zealand can travel 74,000 km in a year, reaching Japan, Alaska and California, averaging over 500 km per day.

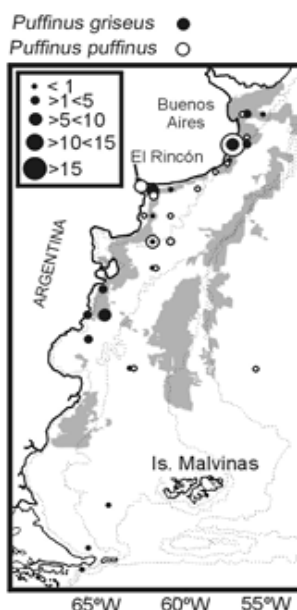


Fig. 1. Distribution of densities of *Ardenna grisea* (*Puffinus griseus*) recorded in Orgeira (2001). The black circle key indicates the density values (individuals/km²).

Spatial distributions of densities obtained during summer 1987 to 1996 at the continental platform and South Atlantic Ocean within a scope of 35° to 56° S and 53° to 69° W. Five geographical areas for large feeding seabird concentrations were identified, four of them north of 43° S and one south of 43° S. In all cases, the largest aggregations of feeding seabirds were recorded at coastal areas rather than marine areas (Orgeira, 2001).

According to densities identified in the Figure 1 and fishing effort overlapping, the team decided to appoint a LOW RISK SCORE.

Encounterability	According to data from the years 2022, 2023 and 2024 fishing seasons, no seabird contacts were observed with the fishing gear and/or vessel (<i>i.e.</i> collisions) during the monitored fishing hauls, the team decided to assess this susceptibility attribute as LOW RISK SCORE.	1
Selectivity of gear type	According to data from the years 2022, 2023 and 2024 fishing seasons, no seabird contacts were observed with the fishing gear and/or vessel (<i>i.e.</i> collisions) during the monitored fishing hauls, the team decided to assess this susceptibility attribute as LOW RISK SCORE.	1
Post capture mortality	During assessments, no interactions (<i>i.e.</i> birds colliding with the fishing gear and/or parts of the vessel). So, the team assigned a LOW RISK SCORE.	1
Catch (weight) Only where the scoring element is scored cumulatively	N/A	N/A

Table 36. PSA productivity and susceptibility attributes and scores for Southern fulmar (*Fulmarus glacialis*)

Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Family Procellariidae – Silver grey petrel, Antarctic fulmar, Southern fulmar (<i>Fulmarus glacialoides</i>)	
Attribute	Rationale	Score
Average age at maturity	The average age at maturity for the <i>fulmarus glacialoides</i> is 5 to 20 years old, with an average of 8 years in males and 12 years in females ADW: Fulmarus glacialis: INFORMATION	2
Average maximum age	The average adult life expectancy is estimated at 31.8 years, and seabirds have been reported breeding at over 50 years old ADW: Fulmarus glacialis: INFORMATION .	3
Fecundity	A single, white egg is laid during late November or early December. Southern Fulmars (Fulmarus glacialoides) Earth Life	3
Average maximum size Not scored for invertebrates	It measures 45 cm long, with a 12 cm tail and a 5 cm beak. Datos de Fulmar austral, dieta, hábitat e imágenes en Animalia.bio	1
Average size at maturity Not scored for invertebrates	There is no estimation of average size at maturity. The team decided to take in consideration the maximum length size of 45 cm TL.	2
Reproductive strategy	The breeding colonies may contain hundreds of birds and are on cliffs in ice-free areas with the birds arriving in October. The courtship display consists of a pair sitting alongside each other while calling, waving their heads, and nibbling and preening each other. The nest is a shallow scrape lined with stone chips. It is built in a spot sheltered from the wind on a ledge or scree slope or in a crevice. A single, white egg is laid during late November or early December. It measures 76 by 51 mm (2.99 by 2.01 in) and weighs about 103 g (3.6 oz). It is incubated for about 45 days with both parents taking turns in stints of 3–9 days. Southern Fulmars (Fulmarus glacialoides) Earth Life	3
Trophic level	It breeds around Antarctica, but regularly migrates to northern Chile, especially in winter. It often travels in groups and regularly follows ships; it can be seen feeding and scavenging alongside giant petrels at the sewage outlets along the coast of the Strait of Magellan. Fulmar Austral - eBird The association between Cape petrel (<i>Daption capense</i>) and Silver Petrel (<i>Fulmarus glacialoides</i>) is since they fly in mixed flocks and share the same capture strategies (Montalti & Orgueira, 1998). Therefore, they have the same diet, crustaceans and squid (Warham, 1990).	3
Density dependence Invertebrates only	N/A	N/A
Susceptibility		
Fishery Only where the scoring element is scored cumulatively	Not applicable. According to the term ‘MSC UoAs and the assessment of cumulative impacts’, the MSC defines that for secondary species, cumulative impacts only need to be considered in cases where two or more UoAs have ‘main’ catches that are ‘considerable’, defined as a species being 10% or more of the total catch. Therefore, the cumulative impact is not assessed for seabirds.	
Attribute	Rationale	Score
Areal Overlap	This species breeds along the coast of Antarctica and outlying islands, including the South Sandwich Islands, South Orkney Islands, South Shetland Islands, Bouvet Island (to Norway) and Peter Island. At sea, it can range as far north as the coasts of South Africa, Australia and New Zealand, and	1

South America up to central Chile and southern Brazil. [Southern Fulmar Fulmarus Glacialoides Species | BirdLife DataZone](#)

It lives on the Antarctic continent, the subantarctic islands, the Antarctic Peninsula, the Juan Fernandez Islands, the Diego Alvarez Islands, South Georgia Islands, and the South Shetland Islands.

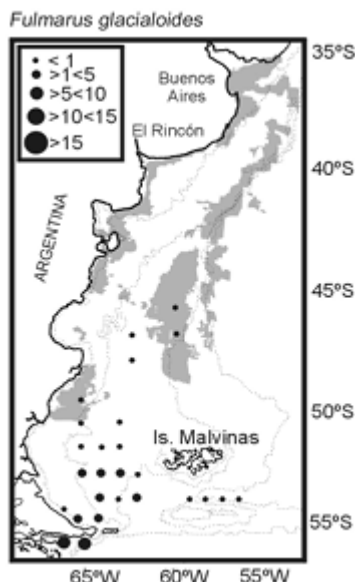


Fig. 1. Distribution of densities of *Fulmarus glacialoides* recorded in Orgeira (2001).
The black circle key indicates the density values (individuals/km²).

Spatial distributions of densities obtained during summer 1987 to 1996 at the continental platform and South Atlantic Ocean within a scope of 35° to 56° S and 53° to 69° W. Five geographical areas for large feeding seabird concentrations were identified, four of them north of 43° S and one south of 43° S. In all cases, the largest aggregations of feeding seabirds were recorded at coastal areas rather than marine areas (Orgeira, 2001).

According to densities identified in the Figure 1 and fishing effort overlapping, the team decided to appoint a LOW RISK SCORE.

Encounterability	According to data from the years 2022, 2023 and 2024 fishing seasons, no seabird contacts were observed with the fishing gear and/or vessel (<i>i.e.</i> collisions) during the monitored fishing hauls, the team decided to assess this susceptibility attribute as LOW RISK SCORE.	1
Selectivity of gear type	According to data from the years 2022, 2023 and 2024 fishing seasons, no seabird contacts were observed with the fishing gear and/or vessel (<i>i.e.</i> collisions) during the monitored fishing hauls, the team decided to assess this susceptibility attribute as LOW RISK SCORE.	1
Post capture mortality	During assessments, no interactions (<i>i.e.</i> birds colliding with the fishing gear and/or parts of the vessel). So, the team assigned a LOW RISK SCORE.	1

Table 37. MSC RBF worksheets for PSA and CA – PI 1.1.1

Scoring element							Productivity Scores [1-3]							Susceptibility Scores [1-3]					PSA Score	Cumulative only										
First of each scoring element	Family name	Scientific name	Common name	Species type	Fishery descriptor	Average age at maturity	Average max age	Fecundity	Average max size	Average size at Maturity	Reproductive strategy	Trophic level	Density Dependance	Total Productivity (average)	Availability	Encounterability	Selectivity	Post-capture mortality		Total (multiplicative)	Catch (tons)	Weighting	Weighted Total	Weighted PSA Score	MSC PSA-derived score	Risk Category Name	MSC scoring guidepost	Consequence Score (CA)	Final MSC score (per scoring element)	
1	First	Solenoceridae	Pleoticus muelleri	Argentine red shrimp	Invertebrate	Offshore outrigger trawl fishery	1	1	1	-	-	1	1	2	1,17	2	3	2	3	1,88	2,21	136,731	0,67	1,48	2,21	91	Low	≥80	80	86
1						Coastal outrigger trawl fishery	1	1	1	-	-	1	1	2	1,17	2	3	2	3	1,88	2,21	53,712	0,26	0,58	2,21					
1						Artisanal fishery	1	1	1	-	-	1	1	2	1,17	2	3	2	3	1,88	2,21	12,803	0,06	0,14	2,21					
1						Hake bottom trawl fishery (bycatch)	1	1	1	-	-	1	1	2	1,17	2	3	2	3	1,88	2,21	1,239	0.01	0,01	2,21					
																											MSC score	86		
																											Status	Unconditional pass		



Table 38. MSC RBF worksheets for PSA PI 2.2.1 - only main secondary species are scored.

Only main species scored?				Yes			Productivity Scores [1-3]								Susceptibility Scores [1-3]								
Scoring element	First of each scoring element	Family name	Scientific name	Common name	Species type	Fishery descriptor	Average age at maturity	Average max age	Fecundity	Average max size	Average size at Maturity	Reproductive strategy	Trophic level	Density Dependance	Total Productivity (average)	Availability	Encounterability	Selectivity	Post-capture mortality	Total (multiplicative)	MSC PSA-derived score	Risk Category Name	MSC scoring guidepost
1	First	Laridae	<i>Larus dominicanus</i>	Kelp gull	Vertebrate	Bottom otter trawl	1	2	3	1	2	3	3	-	2,14	2	1	1	1	1,03	89	Low	≥80
2	First	Procellariidae	<i>Daption capense</i>	Cape petrel			2	2	3	1	1	3	3	-	2,14	1	1	1	1	1,00	89	Low	≥80
3	First	Oceanitidae	<i>Ocenites oceanicus</i>	Wilson storm petrel			2	2	3	1	1	3	3	-	2,14	1	1	1	1	1,00	89	Low	≥80
4	First	Laridae	<i>Sterna hirundinacea</i>	South American tern			1	2	3	1	2	3	3	-	2,14	1	1	1	1	1,00	89	Low	≥80
5	First	Procellariidae	<i>Ardenna grisea</i>	Sooty shearwater			2	2	3	1	2	3	3	-	2,29	1	1	1	1	1,00	86	Low	≥80
6	First	Procellariidae	<i>Fulmarus glacialoides</i>	Southern petrel			2	3	3	1	2	3	3	-	2,43	1	1	1	1	1,00	83	Low	≥80
																			MSC score		80		
																			Status		Unconditional pass		

11.8 Harmonised fishery assessments

The following table identifies the overlapping UoA(s) and the PIs subject to harmonisation:

Table 40. Overlapping Units of Assessment

Fishery name	Unit of Assessment	Certificate status	Certification date	Performance Indicators to harmonise
Patagonian scallop (<i>Zygochlamys patagonica</i>) bottom otter trawl fishery	1	Re-certified	From 29 June 2023 to 28 June 2028	PIs 3.1.1, 3.1.2 and 3.1.3
Southern king crab (<i>Lithodes santolla</i>), Central Patagonian stock, trap with escape rings fishery	1	Certified	From 08 March 2022 to 07 March 2027	PIs 3.1.1, 3.1.2 and 3.1.3
Argentine red shrimp (<i>Pleoticus muelleri</i>) coastal trawling fishery in waters of the Province of Chubut	1	Certified	From 20 March 2025 to 19 March 2030	All PIs
Argentine red shrimp (<i>Pleoticus muelleri</i>) bottom trawl fishery by chubutense coastal chilling vessels	1	Under assessment	N/A	All PIs

Table 41. Overlapping Units of Assessment

Supporting information
At the moment of the preparation of CPRDR, there are 3 MSC pre-existing fisheries certified in the Argentine Sea that overlap with the Argentine red shrimp offshore fishery. During the drafting of this report, a harmonization exercise was addressed on the scoring of Governance and Policy components (<i>i.e.</i> PIs 3.1.1, 3.1.2 and 3.1.3) for all certified fisheries located in Argentine Sea. The team concluded that results must be identical in the outcome of PI 3.1 components. Also, the team identified that there is other Argentine red shrimp fishery recently certified (20 March 2025) that operate in the same P1 stock. Therefore, the team shall fully harmonise all P1 assessment outcomes. However, the team concluded that: -Both UoAs did not operate in the same geographical area. The Argentine red shrimp offshore fishery is located in the closure area for the protection of Argentine hake (AVPJM), between 42° and 48° S, from the provincial jurisdiction line (set up at 12 nm from the coast) to 60° W; while Argentine red shrimp coastal fishery is operate in the provincial jurisdiction of Chubut (inside 12 nm), mainly in the Restricted Effort Fishing Zone (ZEPR) between parallels 43° S and 44°56' S, from the coast up to the provincial jurisdiction line (set up at 12 nm from the coast). -Both UoAs did partial impact the same P2 scoring elements as primary, secondary and ETPs. Cumulative impacts will be considered if applicable. -Both UoAs did not subject to management by the same jurisdiction. The Argentine red shrimp coastal fishery depends of Secretary of Fisheries of the Province of Chubut that is member of Federal Fisheries Council (CFP); while Argentine red shrimp offshore fishery is directly managed by the CFP. The Argentine red shrimp is a species that is distributed both in jurisdictional or provincial waters as well as national, the regulations established by the Federal Fisheries Council are applied in a subsidiary manner in the Province, which, although it may establish measures different from those established by the CFP, given the specific characteristics of the fishery in its jurisdictional waters, these should not generate an impairment to the conservation and sustainability of the fishery as a whole, therefore, they should be more demanding from that perspective. The team based the rationales in the published Public Certification Report (2025) for the Argentine red shrimp coastal fishery in Province of Chubut. The team used the baseline of rationale and scores detailed for the previously scored fishery. As both teams are composed by the same team members, the team will considered fishery information; scoring and rationales of PIs subject to

harmonisation; and conditions and milestones established. Where a UoA in an assessment (initial assessment) overlaps with only 1 UoA that is certified, the team of the UoA in assessment shall liaise with the CAB of the overlapping UoA to organize harmonization activities as soon as possible during the assessment process, to ensure harmonized assessment outcomes. Harmonisation activities between Argentine red shrimp coastal and offshore fisheries will be conducted in the scoring process after the site visit using the PCR of coastal fishery as reference.

In case of any difference in scores for relevant PIs, the team must explain and justify it. Differences in outcomes with respect to evaluation, scoring and conditions of the overlapping assessments shall only occur when it was identified exceptional circumstances, such as the UoAs being demonstrably different.

This preliminary exercise remains provisional until formal scoring discussions can take place following the site visit activities and scoring process.

During the preparation of FDR, a new UoA entered in assessment related with the same target stock.

Was either FCP v2.2 Annex PB1.3.3.4 or PB1.3.4.5 applied when harmonising?	Yes
Date of harmonisation meeting	30/05/2025
If applicable, describe the meeting outcome	
As both teams are shaped by the same fishery members, the meeting was focused to review relevant difference in both Argentine red shrimp fisheries. The team worked in the scoring process considering the rationales provided in the coastal fishery that was certified in March. The Table 43 shows rationales for scoring differences for PIs 1.1.1, 2.1.2, 2.4.1 and 2.4.3.	

Table 42. Scoring differences.

Performance Indicators (PIs)	Southern king crab (<i>Lithodes santolla</i>), Central Patagonian stock, trap with escape rings fishery	Patagonian scallop (<i>Zygochlamys patagonica</i>) bottom otter trawl fishery	Argentine red shrimp (<i>Pleoticus muelleri</i>) coastal trawling fishery in waters of Province of Chubut	UoA under assessment
1.1.1	N/A	N/A	85	86*
1.1.2	N/A	N/A	Not scored	Not scored
1.2.1	N/A	N/A	90	90
1.2.2	N/A	N/A	75	75
1.2.3	N/A	N/A	80	80
1.2.4	N/A	N/A	80	80
2.1.1	N/A	N/A	100	100
2.1.2	N/A	N/A	90	85*
2.1.3	N/A	N/A	85	85
2.2.1	N/A	N/A	80	80
2.2.2	N/A	N/A	85	85
2.2.3	N/A	N/A	85	85
2.3.1	N/A	N/A	75	75
2.3.2	N/A	N/A	65	70*
2.3.3	N/A	N/A	70	70
2.4.1	N/A	N/A	75	60*
2.4.2	N/A	N/A	80	80
2.4.3	N/A	N/A	75	95*
2.5.1	N/A	N/A	80	80

2.5.2	N/A	N/A	80	80
2.5.3	N/A	N/A	80	80
3.1.1	100	100	95	95
3.1.2	95	95	95	95
3.1.3	100	100	100	100
3.2.1	N/A	N/A	80	80
3.2.2	N/A	N/A	80	85*
3.2.3	N/A	N/A	70	70
3.2.4	N/A	N/A	80	80

Table 43. Rationale for scoring differences

If exceptional circumstances apply, outline the situation and whether there is agreement between or among teams on this determination (FCP v2.3 PB1.3.2.1).

N/A

If applicable, explain and justify any difference in scoring and rationale for the relevant Performance Indicators (FCP v2.3 Annex PB1.3.2.2).

Principle 1 – Only the PI 1.1.1 was changed according to the RBF results. In the UoA under assessment (*i.e.* national waters), the incidental catch (bycatch) of shrimp in the hake bottom trawl fishery has been added. In the assessment of coastal waters, these catches were reported within the offshore outrigger trawl fishery, as they were not distinguished from other catches in the landing statistics. However, during the site visit, stakeholders (the client and INIDEP) considered it more appropriate to separate the information. They argued that for the past 3 years, this activity has taken place annually between February and May, even though it does not exceed 1% of the total shrimp landings. In the next report published for the Argentine red shrimp coastal fishery, the harmonised assessment outcome will be included, as established by PB1.5.3 and PB1.5.4.

Principle 2 – The following PIs has changed: 2.1.2, 2.3.2, 2.4.1 and 2.4.3. The SI e) of PIs 2.1.2 was scored, due there is unwanted catch of Argentine hake, recorded as main primary species, in the shrimp offshore fishery. So, alternative measures in place are reviewed by the team. The score of the PI 2.3.2 was adjusted for each ETP species group. In the case of 2.4.1, the scoring was subject of RBF results; while in 2.4.3, the score was increased, due in national waters, there are more studies on bottom communities and the impact of fisheries on them. These studies have been conducted primarily by INIDEP as part of shrimp assessment campaigns, and there are also recent studies on the fishing effort in the area and its impact on the habitat (Mauna *et al.*, 2024; Gaitan & Alemany, 2024). Those that do not consider the Restricted Fishing Effort Area.

Principle 3 – Only the PI 3.2.2 was changed according to additional evidence provided for the national jurisdiction that allow to increase the SG level. In the case of rationales, all of them were adjusted to national jurisdiction that shrimp fishery is conducted. In this case, provincial jurisdictions are not involved in the management of the fishery.

11.9 Peer reviewers – summary of qualifications and competencies

Mauricio Castrejon

Mauricio Castrejon, marine biologist, Interdisciplinary PhD. Postdoctoral researcher at the Faculty of Environment in the University of Waterloo, Canada. Specialist on the social-ecological assessment of small-scale fisheries in marine protected areas, with special relevance on the impact of diverse human and climatic drivers in the co-management of small-scale fisheries in Latin America. He is a former Associate Researcher at the Charles Darwin Foundation (2004- 2008), in-house consultant for World Wildlife Fund (2008-2010) at the Galapagos Islands, Ecuador, and PhD student at Dalhousie University, Canada (2010-2018).

Mr Castrejon worked for Conservation International as an in-house consultant and as a Regional Fisheries Manager in the Americas Field Division Marine Program between September 2014 and June 2019. In this international NGO, he received a Lui-Walton Innovators Fellowship for the development and implementation of a community-based coastal fisheries improvement model. The “C-FIP model” combines globally recognized ecosystem-based and human rights-based

approaches, including the UN FAO's Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries and the Marine Stewardship Council Standard (MSC), in combination with blue finance principles, to promote sustainability of small-scale fisheries. Currently, the C-FIP model is supporting environmental and social improvements in 12 small-scale fisheries in six Latin American countries (Costa Rica, Panama, Colombia, Ecuador, Peru, and Suriname) protecting critical fisheries ecosystems and securing food security and sustainable livelihoods through the co-responsibility capacity of coastal fishing communities and effective governance reforms. In recent years, he has led the development and implementation of a C-FIP, and a business plan, for the Galapagos yellowfin tuna small-scale fishery.

Virginia Polonio

Dr. Virginia Polonio; MSC Lead assessor, project manager and primary responsibility for P2 and Traceability. Virginia has a B.Sc. in Environmental Sciences and a M.Sc. in Fisheries Management and Aquaculture, both from the University of Cadiz. She also obtained her PhD in Biodiversity and Natural resources from the University of Oviedo during which she gained experience in the field of research of fisheries management and protection of Vulnerable Marine Ecosystems such as coral reefs. During her thesis she wrote several articles describing new species of corals and developed skills in the fields of benthic ecology and ecosystem management. Before her PhD, Virginia was contracted as technician in the Spanish Oceanographic Institute where she worked at sea and gained field experience to assess fisheries stocks. She participated in the Spanish National Basic Plan of Data to collect and evaluate the fishing in the ICES and CECAF areas. During this period, she carried out feeding habit and age/size studies of *Pagellus Bogaraveo* and others commercial species (hake, anchovy, sharks, mackerel, squid, etc.) to implement an ecosystem approach in relation to commercial fisheries in the Gulf of Cadiz and the strait of Gibraltar. Virginia has extensive experience working on MSC assessments as both a team member and lead assessor. She has worked on numerous full assessments such as ISF Capelin, ISF Mackerel, CSHMAC herring, Cantabrian sardine, North Atlantic albacore, squat lobster, blue sharks and swordfish, Chile Austral hake among others and is now independent consultant at Vekamar.

11.10 Assessment Team – biographies/summaries of CVs

Eng. Pedro A. Landa – Fishery Team Leader and Traceability Expert

Eng. Landa is graduated in agricultural engineer and has many studies specified in environmental, ecosystem and sustainable development, and management techniques. He has more than 30 years of experience as Technical Director of OIA, certification assessor process with different standards related with organic food, manufacturing production and fishing sustainability. He has participated in Patagonian scallop (*Zygochlamys patagonica*), hake (*Merluccius hubbsi*) and anchovy fisheries assessments as team member against Principles and Criteria of the MSC.

MSc Pedro De Carli – Fishery Team Member and Responsible for Principle 1

Pedro De Carli holds a biology degree from Universidad de Buenos Aires (Argentina), and an MSc in Management and Conservation of Natural Resources in Sub-Antarctic Environments degree from Universidad de Magallanes (Chile).

He has around 15 years of experience working in the conservation and management of marine resources. In 2012, he presented his MSc thesis on population genetic structure of *Pleoticus muelleri* in Argentine Patagonia. He participated in INIDEP research campaigns in 2008 and 2009, aimed at the assessment of the Argentine red shrimp population.

He has held an Associate Professor position at the Universidad Nacional de la Patagonia Austral (Argentina), teaching Genetics and Population dynamics courses since 1998. He also coordinates graduate and post-graduate courses on marine resources genetics. At the moment, he is acting as thesis supervisor for two students who are writing their post-graduate thesis on genetic and genomic structure of Argentine red shrimp populations.

From 2003 to 2007, he has held management positions in the Undersecretary of Fisheries of Santa Cruz (Argentina). From 2008 to 2013 he was a technical consultant for the abovementioned government body. And, during 2014 and 2015, he served as Undersecretary of Fisheries of Santa Cruz. In 2015 he also acted as Santa Cruz's representative in the Federal Fishery Council.

MSc. Denise Bore – Responsible for Principle 2

MSc. Bore is a Fisheries Engineer from the Catholic University of Valparaíso (Chile). She has 40 years of professional experience as a trained fishery engineer in all aspects of fisheries sector and into master's courses in Environmental

Management and Auditing from the Ibero-American University Foundation. She has involved in fishery improvement projects, covering fishery management planning, stock assessment, monitoring system, environmental aspects related with the MSC Fisheries Standard. MSc. Bore participated in several pre-assessments as Chilean sardine and anchovy (FIPASUR) and Southern hake fishery. Also, she is technical consultant for the Chile Squat Lobster and Nylon Shrimp modified trawl fishery that is certified as well managed and sustainable against the MSC Principles and Criteria.

Eng. Edith Saa Collantes – Fishery Team Member and Responsible for Principle 3

Eng. Saa Collantes is a Fishery Engineer, and she served for many years in the Undersecretary of Fisheries and Aquaculture in Chile, being assessor of the Ministry of Economy for the creation of the national fisheries law. Since 2014, she is independent consultant in fishery issues and management systems. She has more than 30 years in fishery managements and operations. She has participated as team member in several pre-assessments and certification processes against MSC Standard of fisheries located in Chile.

Eng. Carolina Medina Foucher – OIA's Technical Support

Carolina Medina Foucher, Aquaculture Engineer, is MSC Program Manager for Fisheries and CoC Standards in Organizacion Internacional Agropecuaria since 2011. She is responsible of the technical execution of all the certification schemes for fisheries, being an auditor of the MSC Standard, is qualified to carry out pre-assessments and full assessments of fisheries located in Argentina, Chile, Peru and Brazil. She has participated as technical support in all OIA's certification process.

11.11 Objection Procedure – delete if not applicable

MSC and OIA confirmed that no Notice of Objection were received during the Final Draft Report stage.

11.12 Supporting information – delete if not applicable

The CAB may use this section to make available any key information that is unpublished or not available online. Key information includes any information required by stakeholders to be able to properly review the logic used by the assessment team within the report.

11.13 References

All references used in the assessment are available for stakeholder's review. If you need to review any report, please contact to OIA Program Manager (pesca@oia.com.ar) to provide a copy of it.

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