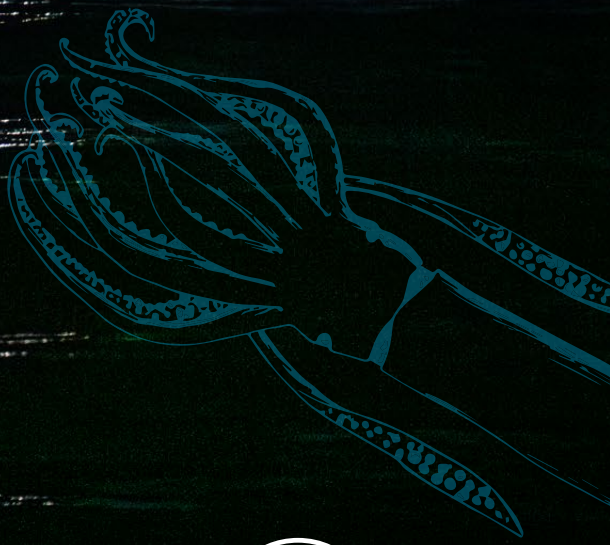
BRIGHT LIGHTS, DIM PROSPECTS

The urgent need to address unregulated squid fishing in the Southwest Atlantic to avert a looming environmental crisis



A report by the Environmental Justice Foundation

ENVIRONMENTAL JUSTICE FOUNDATION
Protecting People and Planet

ENVIRONMENTAL JUSTICE FOUNDATION

Protecting People and Planet

The Environmental Justice Foundation (EJF) exists to protect the natural world and defend our basic human right to a secure environment.

EJF works internationally to inform policy and drive systemic, durable reforms to protect our environment and defend human rights.
We investigate and expose abuses and support environmental defenders, Indigenous peoples, communities and independent journalists on the frontlines of environmental injustice.
Our campaigns aim to secure peaceful, equitable and sustainable futures.

EJF is committed to combating illegal, unreported, and unregulated (IUU) fishing as well as associated human rights abuses in the fishing sector.

Our investigators, researchers, filmmakers and campaigners work with grassroots partners and environmental defenders across the globe.

Our work to secure environmental justice aims to protect our global climate, ocean, forests, wetlands, wildlife and defend the fundamental human right to a secure natural environment, recognising that all other rights are contingent on this.

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Acknowledgements

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Contents

Acronyms and abbreviations

AIS	Automatic Identification System
BBNJ	Biodiversity Beyond National Jurisdiction
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
CMMs	Conservation and management measures
CMS	Convention on the Conservation of Migratory Species of Wild Animals
CPUE	Catch-per-unit-effort
EEZ	Exclusive Economic Zone
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FoC	Flag of convenience
ICCAT	International Commission for the Conservation of Atlantic Tunas
ILO	International Labour Organization
ITF	International Transport Workers' Federation
IUU	Illegal, unreported and unregulated (fishing)
INIDEP	Instituto Nacional de Investigación y Desarrollo Pesquero (National Institute for Fisheries Research and Development)
KM-GBF	Kunming-Montreal Global Biodiversity Framework
MPA	Marine Protected Area
MSC	Marine Stewardship Council
NASA	National Aeronautics and Space Administration
NPFC	North Pacific Fisheries Commission
PNA	Prefectura Naval Argentina (Argentine Coast Guard)
REM	Remote electronic monitoring
RFMO	Regional Fisheries Management Organisation
SPRFMO	South Pacific Regional Fisheries Management Organisation
UK	United Kingdom
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
US	United States
VIIRS-DNB	Visible infrared imaging radiometer suite day/night band

Glossary of terms

Automatic Identification System (AIS): a device that broadcasts a vessel's location, identity, course and speed.[1] AIS is a safety-at-sea measure that is mandatory for larger ships, including many, but not all, commercial fishing vessels. AIS data is accessible to the public.

Catch-per-unit-effort (CPUE): The quantity of fish caught (in number or in weight) with one standard unit of fishing effort, e.g. weight of squid, in tonnes, taken per hour of jigging. CPUE is often considered an index of fish biomass (or abundance). Sometimes referred to as catch rate.

Distant water fishing: Fishing carried out by a country beyond its area of jurisdiction, including on the high seas.

Exclusive Economic Zone (EEZ): The area beyond a nation's territorial sea over which it has jurisdiction.[2]

Fishing effort: The total amount of fishing activity on the fishing grounds over a given period of time, often expressed for a specific gear type, e.g. number of hours trawled per day.

Forced labour: Defined in the Forced Labour Convention 1930 (No. 29) as "all work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily."[3]

Over-exploited: Exploited beyond the limit which is believed to be sustainable in the long term and beyond which there is an undesirably high risk of stock depletion and collapse.

Recruitment: The number of squid (recruits) added to the exploitable population, in the fishing area, each year.

Regional Fisheries Management Organisation (RFMO): International organisations developed to sustainably manage migratory or straddling fish species through the establishment of binding conservation and management measures.[4]

Shark finning: The practice of removing a shark's fins – often while the shark is still alive – and discarding the body back into the ocean.

Squid jigging: A fishing technique which uses specialised barbless lures, called squid jigs, which are jigged up and down using machines to imitate the movement of prey. The process often uses bright overhead lights to attract the squid.

***Straddling stock*:** A stock (population) of a species which occurs both within the EEZ of a country and in an area beyond and adjacent to the zone.[5]

Trans-shipment (at sea): The movement of fish from a fishing vessel typically to a refrigerated cargo (reefer) vessel, away from a port.

Executive summary

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This report presents the findings of an EJF investigation into the Argentine shortfin squid fishery of the Southwest Atlantic. One of the largest unregulated squid fisheries in the world, every year hundreds of distant water vessels descend on the area to catch the species as it migrates out of Argentina's waters towards its feeding and spawning grounds on the high seas. The fleet – so large it can be seen from space – has exploded over the past decade, amidst rising demand for squid and diversion of fishing activity from depleted finfish populations. Over the period of study, fishing hours by Chinese squid vessels in the area almost doubled; yet landings have shown worrying signs of decline, pointing to a population under stress.

Within Argentina's waters, squid populations are actively managed, yet in the adjacent high seas area – known as 'Mile 201' – exploitation is largely uncontrolled. Here, there is no regional oversight of the squid fishery and, in the absence of coordinated scientific assessments or harvest controls, there is a severe risk of overfishing. While shortfin squid populations have survived the onslaught of intense fishing pressure, the situation is precarious. Good environmental conditions have likely sustained the fishery, allowing the squid to rebound each year. But in as little as a year, overfishing combined with poor environmental conditions could trigger collapse of the population, destabilising ecosystems across the entire region.

A keystone species, the Argentine shortfin squid plays a critical role in the Southwest Atlantic's ecosystems. It occupies a central and unique role in marine food chains, while also acting as a biological pump, transferring nutrients between ecosystems during its vast migrations across thousands of kilometres. Overfishing and an ensuing population collapse would have cascading effects on the marine ecosystem, severely impacting a range of ecologically connected fauna that feed on the squid, including dolphins, seals and whales, as well as seabirds and commercially important fish species, such as hake and tuna. These risks are compounded by global heating, which is pushing this highly sensitive and ecologically vital species into an ever more perilous state.

Beyond environmental concerns, a lack of oversight of the squid fishery leaves crew members – mostly from Indonesia and the Philippines – in a position of extreme vulnerability. EJF's investigation found that human rights and labour abuses are widespread, with conditions indicating a high risk of forced labour in the fleet. Crew members interviewed reported beatings, wage deductions, excessive working hours and intimidation, which often intersected with illegal and cruel fishing practices, such as shark finning and the deliberate killing of marine mammals.

Regional and international collaboration is urgently needed to improve governance of the Southwest Atlantic squid fishery and avert a looming environmental disaster. Without collective management of the high seas fishery, squid populations may collapse imminently, mirroring the fate of similar fisheries elsewhere. But if managed properly, the species can thrive well into the future, sustaining the broader ecosystem and providing crucial economic benefits for communities, as well as local and distant economies.

Key findings:

- Analysis of Automatic Identification System (AIS) data in Global Fishing Watch identified an average of 343 squid jigging vessels operating in the high seas adjacent to the Argentine EEZ – an area known as 'Mile 201' – each year during the period 2019 to 2024. As this only includes vessels transmitting their positions on AIS, the actual size of the fleet may be (substantially) larger. In addition to the squid jigging fleet operating at Mile 201, there is a significant trawl fleet in the area that also exploits the Argentine shortfin squid as part of its catch.

- The majority of squid jigging vessels operating on the high seas are flagged to China (74.6%), with vessels from Taiwan (18.0%) and South Korea (6.7%) also making up a significant portion of the fleet. Chinese-flagged vessels were responsible for the vast majority (91%) of estimated fishing effort according to data in Global Fishing Watch.

- Intense fishing pressure by the high seas fishing fleet is a significant threat to the sustainability of the Argentine shortfin squid fishery. High seas fishing hours increased by 65% between 2019 and 2024, an increase almost entirely attributable to the Chinese squid jigging fleet, which saw an 85% increase in effort over the period. In contrast to other distant water fleets, Chinese squid jiggers appear to have intensified their effort at Mile 201: the number of fishing hours per vessel more than doubled over the study period.

- Fishing pressure in the high seas fishery is over four times greater than within the adjacent Argentine EEZ. This largely uncontrolled fishing activity on the high seas substantially undermines Argentina's efforts at sustainably managing shortfin squid populations within its own waters.

- Nearly half of the total reported Argentine shortfin squid catch is estimated to be taken on the high seas. Given that much of the high seas catch may go unreported, the true scale of exploitation is likely even higher.

- Trends in landings and catch-per-unit-effort (CPUE) are indicative of declining shortfin squid abundance. However, accurate assessments are hampered by a lack of reporting of high seas catches and fishing effort, or cooperation between coastal states and distant water fishing nations to undertake scientific assessments.

- Interviews with crew members demonstrate the potentially widespread incidence of human rights abuses and forced labour on the high seas squid jigging fleet, particularly on Chinese-flagged vessels. Almost two thirds (63.0%) of Chinese squid vessels identified from crew interviews were linked to physical violence or deaths of workers on board.

- Illegal fishing and harm to marine wildlife often goes hand in hand with such abuse. Crew working on board Chinese vessels reported how vessel names and numbers would be obscured to avoid controls, in contravention of Chinese regulations.

- Crew reported intentionally catching and killing seals – sometimes in their hundreds. The process of hauling a seal onto deck is long and gruesome, with crew using ropes and hooks to drag the animal from the water, often wounded but still alive. Killing of seals was observed on over 40% of Chinese squid vessels and 20% of Taiwanese vessels identified from crew interviews. The South American fur seal is protected under Taiwanese law and hunting or killing the species is prohibited.

- Shark finning was reported on over a quarter of Chinese squid vessels identified from crew interviews. At least two Taiwanese squid jiggers were reported as having engaged in the systematic capture and finning of sharks, in contravention of Taiwanese law.

- There is a high risk that squid products associated with the use of forced labour and/or illegal or cruel fishing practices are ending up in major markets such as the European Union (EU), North America and the United Kingdom (UK).

- The evidence presented in this report points to systemic failures that have allowed abuse to continue unchecked, and the need for urgent action to address these issues through improved management oversight.

High seas fishing hours at 'Mile 201' increased by 65% between 2019 and 2024, an increase almost entirely attributable to the Chinese squid jigging fleet, which saw an 85% increase in effort over the period.

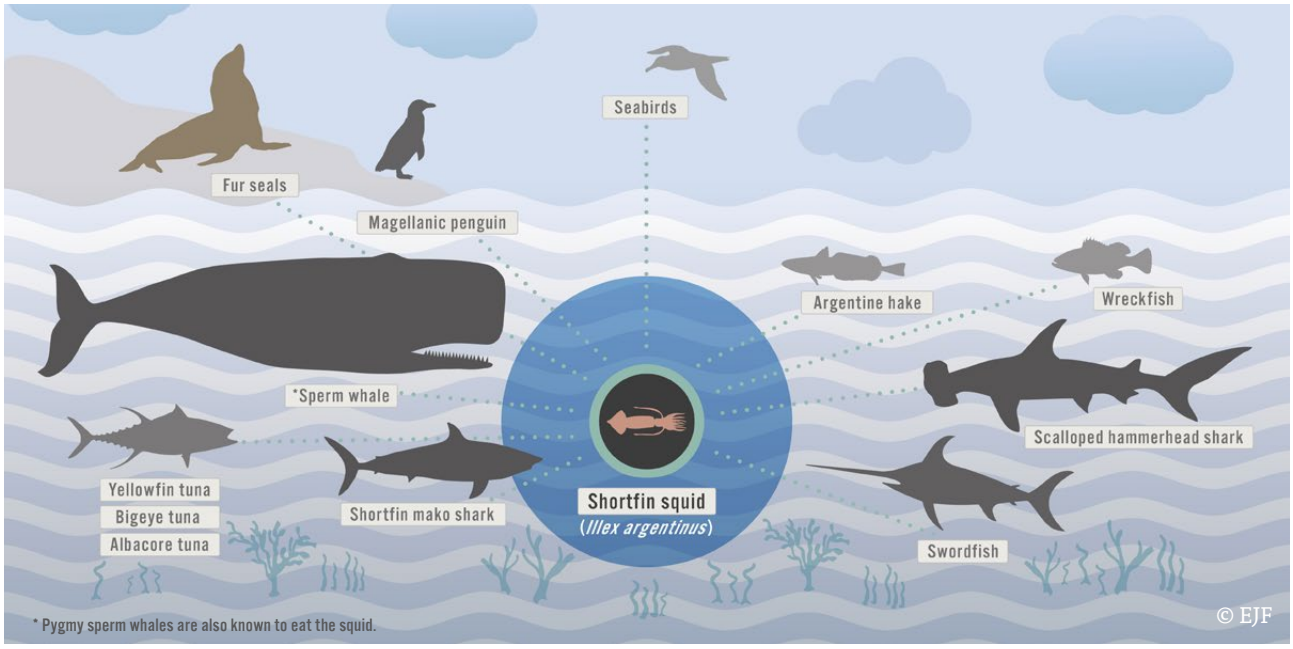
1. Introduction

Squid are an important component of marine ecosystems, playing a crucial role in ocean food webs as both predator and prey. Their ecological importance is profound, supporting the survival of many vulnerable marine mammals, seabirds and commercially valuable fish species, such as hake, cod, tuna and swordfish.[6] At the same time, squid underpin food security and economic resilience in many coastal communities and national economies, as a target catch for small-scale and local industrial fisheries and source of fishing licence revenue for coastal state governments.[7]

Rising demand,[8] the expansion of distant water fleets,[9] and the hunt for new marketable species caused by the depletion of certain finfish populations,[10] have over the last few decades led to a rapid expansion of global squid fisheries. Between 2017 and 2020, global squid fishing effort increased by nearly 70%,[11] accompanied by the spatial expansion of exploitation into novel areas.[12] Annual squid landings increased by around 45% since the early 1990s,[13] concentrated on a few key species that account for the major share of global squid catch.[14]

The recent boom in global squid fishing has largely taken place within a regulatory vacuum. Despite their commercial importance, many squid fisheries lack any form of regional management or regulatory oversight, unlike tuna and other commercial species that are managed under Regional Fisheries Management Organisations (RFMOs) or other international cooperative instruments. In the major squid fishery of the high seas Southwest Atlantic, for example, there are no harvest controls or science-based catch limits, and vessels extract huge amounts of squid, an unknown but likely significant proportion of which goes unreported.[15] Furthermore, as squid populations move between areas within and beyond national jurisdiction, unregulated high seas fisheries threaten to undermine national management efforts within adjacent coastal state waters, as well as the conservation of vulnerable marine species in nearby marine protected areas.[16] Currently only two out of the 17 international RFMOs – the North Pacific Fisheries Commission (NPFC) and South Pacific Regional Fisheries Management Organization (SPRFMO) – have adopted measures aimed at conserving and sustainably managing squid populations, however even these measures have serious shortcomings.[17]

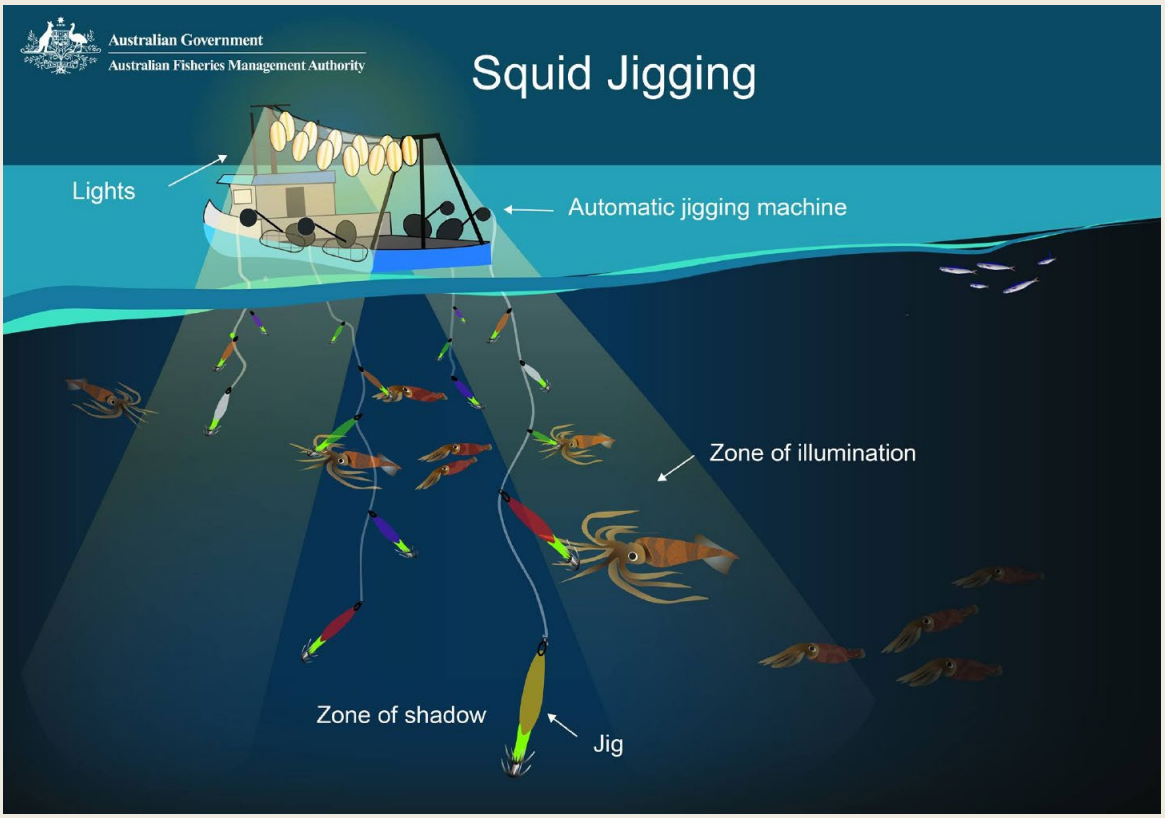
Unregulated high seas fisheries now account for the vast majority (around 86%) of global squid fishing effort.[18] In these fisheries, the monitoring and control of fishing activities lies solely with distant water flag states. Vessels remain at sea for extended periods of time, targeting multiple regions in a given year, facilitated by at-sea servicing, refuelling and offloading of catches.[19] Extended periods at sea exacerbate the lack of transparency in the fishery, with vessels avoiding controls at port and operating with limited oversight from authorities.[20] Squid vessels (**Box 1**) have been found to be associated with a high risk of forced labour,[21] due to the nature of their operations, which are carried out far from port and involve many hours per day spent fishing.[22] They have also been reported in connection with illegal fishing, including fishing within unauthorised zones.[23]



Argentine shortfin squid (*Illex argentinus*) is prey for many species in the Southwest Atlantic including a number of economically important species such as tuna, hake and swordfish.

Box 1: What is squid jigging?

Squid jigging is a fishing method that relies on specialised lures called jigs combined with bright lights to attract the squid to the surface at night.[24] The jigs are attached to a line which is deployed in a vertical motion that mimics the movement of natural prey, triggering the squid's predatory instincts. When a squid grabs the jig, its tentacles become caught on the hooks and the line is hauled in to retrieve the catch. Squid jigging is considered a highly efficient fishing technique with low bycatch compared to other fishing methods.[25] Yet, squid populations are still highly vulnerable to overfishing by these vessels, with fishing pressure intensifying in recent years and threatening the sustainability of the resource.



Credit: Australian Fisheries Management Authority (www.afma.gov.au).

Squid jigging vessels have overhead lights which illuminate the water and attract squid. The squid are caught using barbless lures on monofilament fishing lines which are jigged up and down in the water by machines.[26]

A squid jigging vessel operating in the high seas of the Southwest Atlantic (Mile 201).

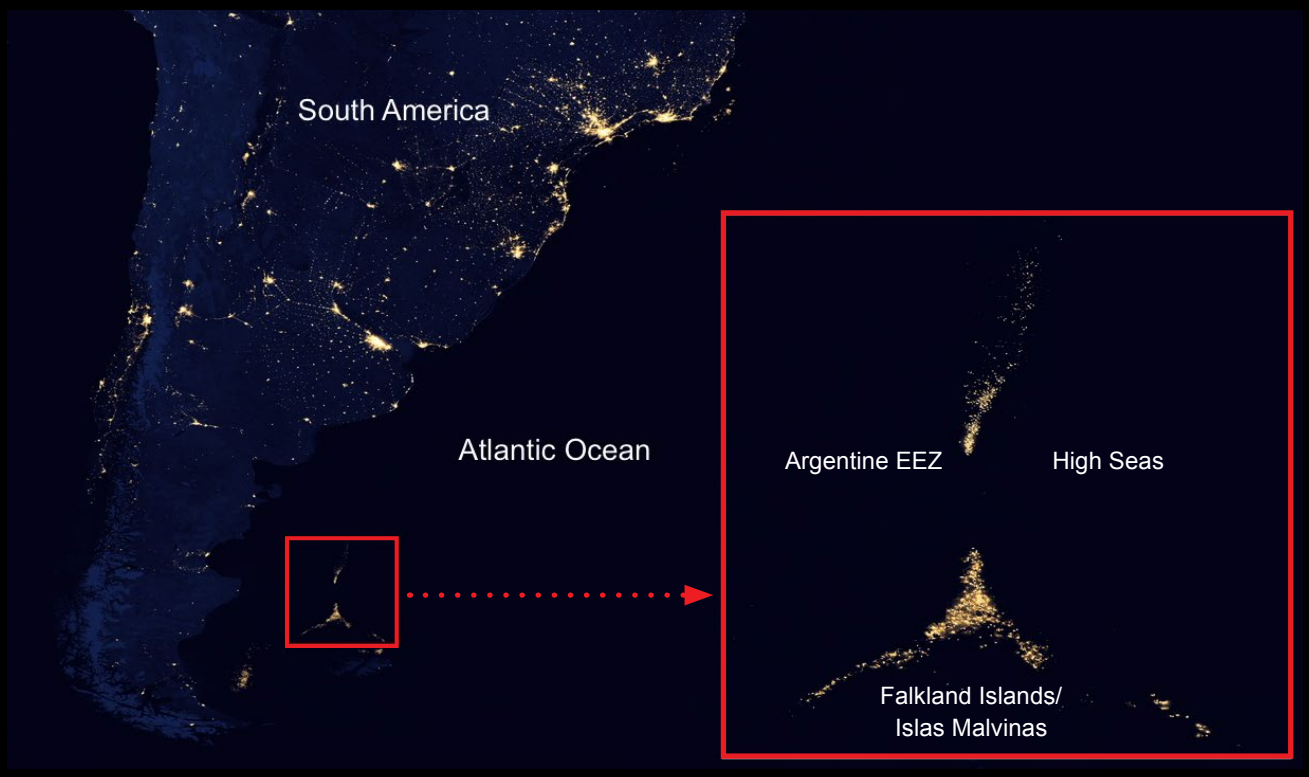
China is now the leading squid fishing nation in the world, accounting for around a third of total squid captures.

By far the greatest contributor to increased fishing pressure is China and its distant water fleet, which has gained notoriety for illegal fishing and human rights abuses at sea.[27] China's squid catch has increased by an estimated 150% since 2000; it is now the leading squid fishing nation in the world, accounting for around a third of total squid captures[28] or up to 50-70% of high seas catch in recent years, according to some estimates.[29] The government of China has placed a clear emphasis on developing its capacity to target squid species: in 2020, vessels equipped to target squid represented more than two in three authorisations covering oceanic areas.[30] China's Ministry of Agriculture and Rural Affairs has described squid as the "main object of fishing and utilisation [of the] country's offshore fisheries", and has emphasised China's position as the world's largest squid fishing nation, trader and consumer.[31] In 2022, squid species alone accounted for 32.9% of the catch of China's distant water fleet.[32]

This report presents the findings of an EJF investigation into one of the largest unregulated squid fisheries in the world – the *Illex argentinus* (Argentine shortfin squid) fishery of the Southwest Atlantic. Within Argentina's Exclusive Economic Zone (EEZ), shortfin squid, which is a cornerstone of Argentina's fisheries sector, is actively managed. However, just beyond the 200 nautical mile limit of the Argentine EEZ, in the high seas area of the Southwest Atlantic known as 'Mile 201', hundreds of squid jigging vessels from China, South Korea and Taiwan converge each year, operating practically unchecked as they intercept squid migrating out of Argentina's waters to the high seas. The operation is so large that when distant water vessels descend on this hotspot of industrial-scale, unregulated fishing, the beaming lights they use to lure squid to the surface are visible from space (**Figure 1**).

The report draws on EJF's at-sea investigation and first-hand documentation to expose the environmental, economic and human rights risks associated with the unregulated shortfin squid fishery of the Southwest Atlantic. The findings highlight the urgent need for coordinated international action to improve governance of the Southwest Atlantic squid fishery and avert a looming disaster both for the squid populations and their ecosystems, and for the communities and economies that depend on them.

Figure 1: Satellite image of squid jiggers operating at Mile 201 in the Southwest Atlantic – a 'city of floating lights'[33]



Source: NASA Earth Observatory/NOAA National Geophysical Data Center[34]

Light-luring squid vessels visible on the horizon at Mile 201

2. Methodology

2.1. Study area

The study area for this report encompasses the high seas of the Southwest Atlantic, with a focus on the waters adjacent to Argentina's 200 nautical mile-EEZ, where the majority of fishing activity for Argentine shortfin squid takes place. In this area – known as 'Mile 201' – a huge fleet of distant water vessels operates in close proximity to the EEZ boundary, intercepting squid as they migrate out of Argentina's waters into the high seas, a phenomenon known as 'fishing the line' (**Figure 2**). The area has been a hotspot of aggressive and intimidating fishing behaviour and, historically, illegal incursions by distant water vessels into Argentina's waters (**Box 2**).[35]

It is noted that the squid species, *Doryteuthis gahi*, known as Patagonian squid or Loligo, is also caught in the Southwest Atlantic but primarily within the waters of the Falkland Islands/Malvinas by Spanish and Falkland Islands-registered trawlers.[36]

The species is of significant commercial importance, accounting for around 2-3% of global squid captures annually (equal to around a fifth of the annual captures of Argentine shortfin squid – see **Section 3**).[37] Although a proportion of the catch is taken on the high seas, the Patagonian squid fishery is characterised by very different fleet dynamics and management issues, with management mainly falling within the competence of the Falkland Islands authorities.[38] The focus of the present report is therefore solely on the shortfin squid fishery of the Southwest Atlantic and, specifically, on the activities of the squid jigging fleet targeting this species, which has expanded significantly in recent years.

> ***"This area (Mile 201) is beyond our jurisdiction. There is a lack of governance in this space. Distant water fleets are operating there without any control or regulation, management measures or catch limits, targeting migratory species from our EEZ."***
>
> Captain Sergio Almada, Argentine Coast Guard

Figure 2: Screen capture from Global Fishing Watch showing a Chinese-flagged squid fishing vessel, the LU RONG YUAN YU 279, fishing along the boundary of Argentina's EEZ

2.2. Data collection methods

Primary data collection involved field research, conducted in February and March 2025. This included an at-sea expedition with the Argentine Coast Guard (Prefectura Naval Argentina) to document the behaviour of the distant water fleet operating at Mile 201 (**Box 2**). Semi-structured interviews were carried out with two scientists from the Argentine government specialising in squid fisheries management and three members of the Argentine Coast Guard responsible for monitoring and enforcement. These interviews provided valuable insights into squid ecology, fleet dynamics, vessel characteristics and areas of operation. Representatives from the Spanish trawl and Taiwanese squid jigging fleets operating in the region were also contacted for comment on specific aspects of this research.

Semi-structured interviews were conducted with Indonesian (n = 165) and Filipino (n = 4) crew who had worked on board Chinese, South Korean and Taiwanese squid jiggers in the study area. These interviews were used to gather detailed information on illegal fishing, human rights abuses, and working and living conditions.

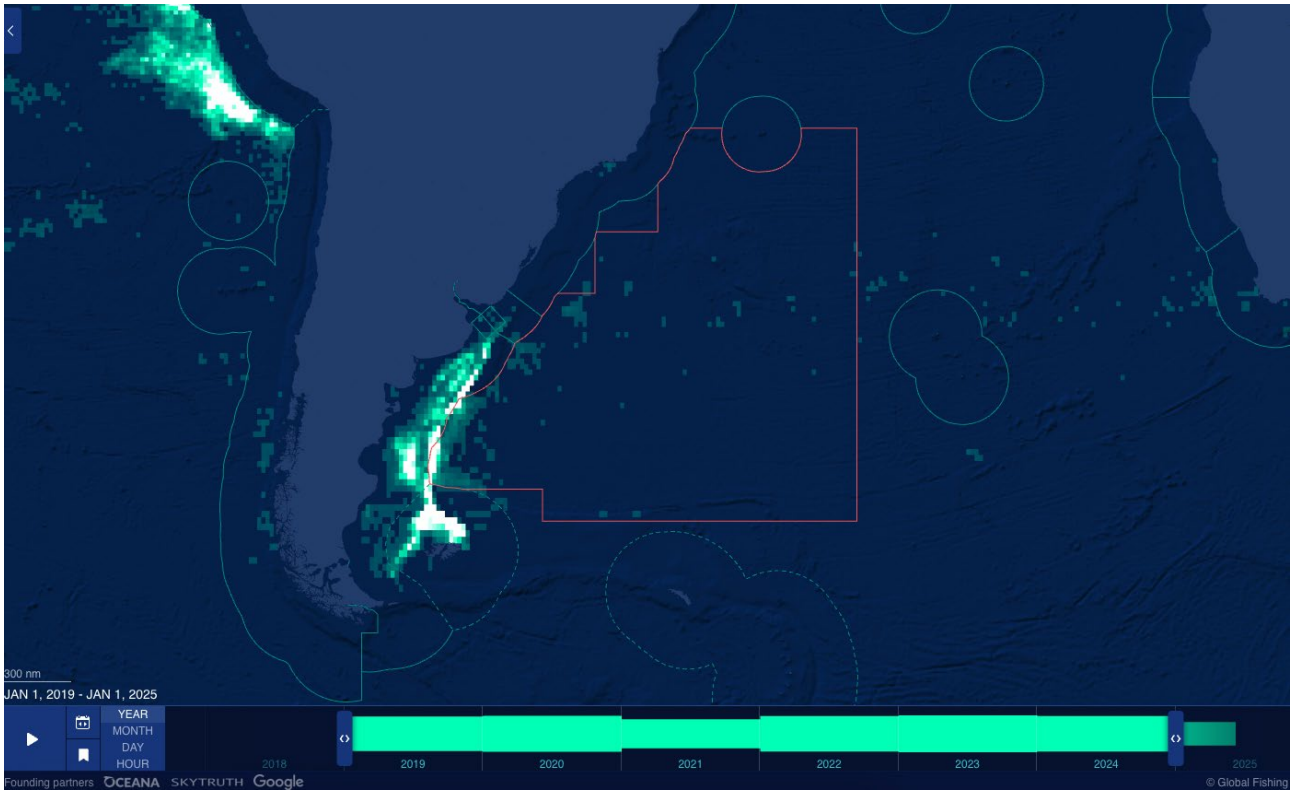
Secondary data was obtained from a range of sources across three languages (English, Spanish and Mandarin) including the list of approved Chinese-flagged high seas fishing vessels,[39] list of vessels with licences to fish in Argentina's waters in 2024,[40] stock assessments for Argentine shortfin squid published by the Instituto Nacional de Investigación y Desarrollo Pesquero (INIDEP),[41] the Outlaw Ocean Project Bait-to-Plate database,[42] company credit check website Qixintong,[43] published information on fishery improvement projects for the Argentine shortfin squid,[44] Sea-web maritime ships database[45] and Park et al. (2023) which provides information on vessel identity and ownership.[46] Fisheries data was extracted from FAO FishStat J (v.3) and trade data from UN Comtrade, Eurostat and TradeDataPro. The study used Global Fishing Watch to estimate fishing hours based on AIS data. Vessel activity was investigated at Mile 201 using a vector layer generated with GIS software (QGIS v.3.34) covering sub-areas 2.3, 2.4, 3.1 and 3.3 of FAO Major Fishing Area 41, excluding the Argentine EEZ[47] (**Figure 3**).

EJF investigators documenting squid jigging operations during an expedition to Mile 201 in March 2025.

2.3 Data limitations

There are several limitations associated with the use of AIS data to estimate fishing effort. First, not all vessels broadcast their positions on AIS, which can result in an incomplete picture of total fishing effort.[48] In addition, not every AIS message that is broadcast is necessarily recorded, for example, where receivers are out of range or there is a high degree of interference, such as in areas of high vessel density.[49] In some cases, apparent increases in fishing effort may be due to improved data coverage, for instance, the inclusion of data from dynamic AIS receivers carried onboard vessels from around 2022, which improved the reception of AIS messages in some areas of high vessel density.[50] For some fleets, AIS data has been shown to overestimate fishing effort;[51] however, a comparison of AIS and VIIRS-DNB (visible infrared imaging radiometer suite day/night band) signals demonstrated that AIS data provides a fair representation of fishing effort exerted by the jigger fleet in FAO Major Fishing Area 41, which includes the area of study for this report.[52] Accuracy of AIS data may also be compromised by spoofing, meaning the deliberate manipulation of data by operators to broadcast incorrect locations, behaviour and identities.[53]

Figure 3: Vector layer generated with GIS software covering sub-areas 2.3, 2.4, 3.1 and 3.3 of FAO Major Fishing Area 41. The vast majority of fishing effort within this polygon took place at Mile 201, in the area adjacent to the Argentine EEZ



Box 2: Behaviour of squid vessels at Mile 201 – report from at-sea expedition

In March 2025, a team of EJF investigators travelled to 'Mile 201' on a cutter provided by the Argentine Coast Guard. The expedition to the edge of the Argentinian EEZ took three days because of adverse weather conditions. The EJF team had the opportunity to observe the numerous squid jiggers and trawlers in the area, filming both during the day and at night. EJF shot footage from the open deck and caught the nearby Chinese squid jiggers operating in action.

The Coast Guard crew positioned their cutter as close to the squid jiggers as possible so EJF investigators could record the fishing operations and working conditions. However, soon after they began filming, the squid jiggers stopped fishing, turned off their lights and started to retreat from the area. One of the jiggers actively pursued the Coast Guard for a short period, forcing the vessel to increase its pace and leave the area.

EJF's experience at sea is consistent with previous reports of aggressive behaviour of the Chinese squid fleet operating at Mile 201. In 2019, the Coast Guard encountered Chinese vessel the HUA XIANG 801 as it was fishing illegally inside the Argentine EEZ. The vessel ceased fishing when confronted and tried to escape to international waters. After being pursued by the Coast Guard, the jigger made aggressive maneuvers in the direction of the Coast Guard, prompting it to fire warning shots.[54] In 2018, the Coast Guard reportedly encountered a Chinese squid jigger, the JING YUAN 626, fishing illegally within the Argentine EEZ. The Coast Guard gave pursuit, but four other Chinese fishing vessels surrounded the JING YUAN 626 to prevent her capture. After failing to heed repeated warnings and continuing to flee the authorities, the Coast Guard opened fire but eventually gave up pursuit.[55]

In 2016, the Coast Guard intercepted the Chinese squid jigger LU YAN YUAN YU 010 as it was fishing illegally in Argentine waters. When it pursued and tried to ram the Coast Guard vessel, the Coast Guard fired warning shots. The Chinese vessel eventually sank, the cause of which was never determined. The Coast Guard rescued several crew members, with others fleeing to another vessel, most likely owned by the same company. There were no fatalities. A representative from the Coast Guard informed EJF that they were following procedure during the incident. In most cases conflicts are resolved at sea through coordination and other means, with warning shots fired at a last resort, after other approaches have failed.[56]

The Argentine Coast Guard fires warning shots in response to being chased by a squid jigging vessel outside of the Argentine EEZ.

A squid jigging vessel trans-ships its catches to a refrigerated cargo vessel (reefer) in the Southwest Atlantic. Trans-shipments allow vessels to spend extended periods at sea, exacerbating the lack of transparency in the fishery.[57]

Crew from the Argentine Coast Guard use radar, amongst other systems, to navigate and monitor fishing vessel activity in their territorial waters.

3. Argentine shortfin squid – a species of critical ecological and commercial importance

The Argentine shortfin squid is abundant in the Southwest Atlantic, with a widespread distribution across the entire continental shelf as well as slopes leading to deeper waters.[58] It is a short-lived species with a lifespan of around one year, which grows rapidly and reproduces just once during its lifecycle.[59] Populations consist of a single generation and fluctuate considerably from year to year, being strongly influenced by fishing activity and environmental conditions (**Box 3**).[60] Fisheries target concentrations of animals of similar ages, usually pre-adults and adults before they spawn (reproduce).[61]

Owing to its life history characteristics, the Argentine shortfin squid is extremely vulnerable to overfishing.[62] In any given year, the number of individuals is entirely dependent on the success of spawning and recruitment during the previous year. Careful management can ensure a sufficient number of squid are able to reproduce and replenish the population for the following year (**Figure 4a**). However, overfishing has the potential to wipe out an entire generation of individuals before they have a chance to reproduce (**Figure 4b**), with catastrophic implications for the species and ecosystem processes that depend on them.[63]

Figure 4a: Diagram illustrating the importance of science-based management for the sustainable exploitation of Argentine shortfin squid

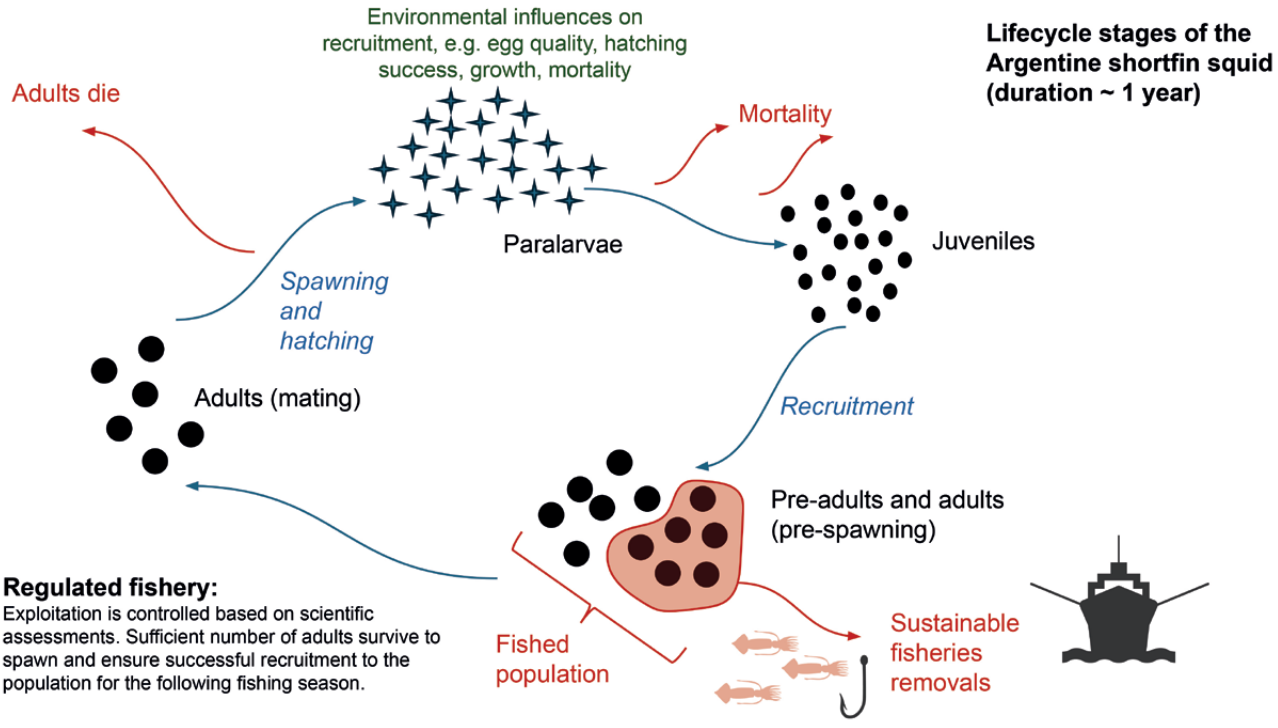
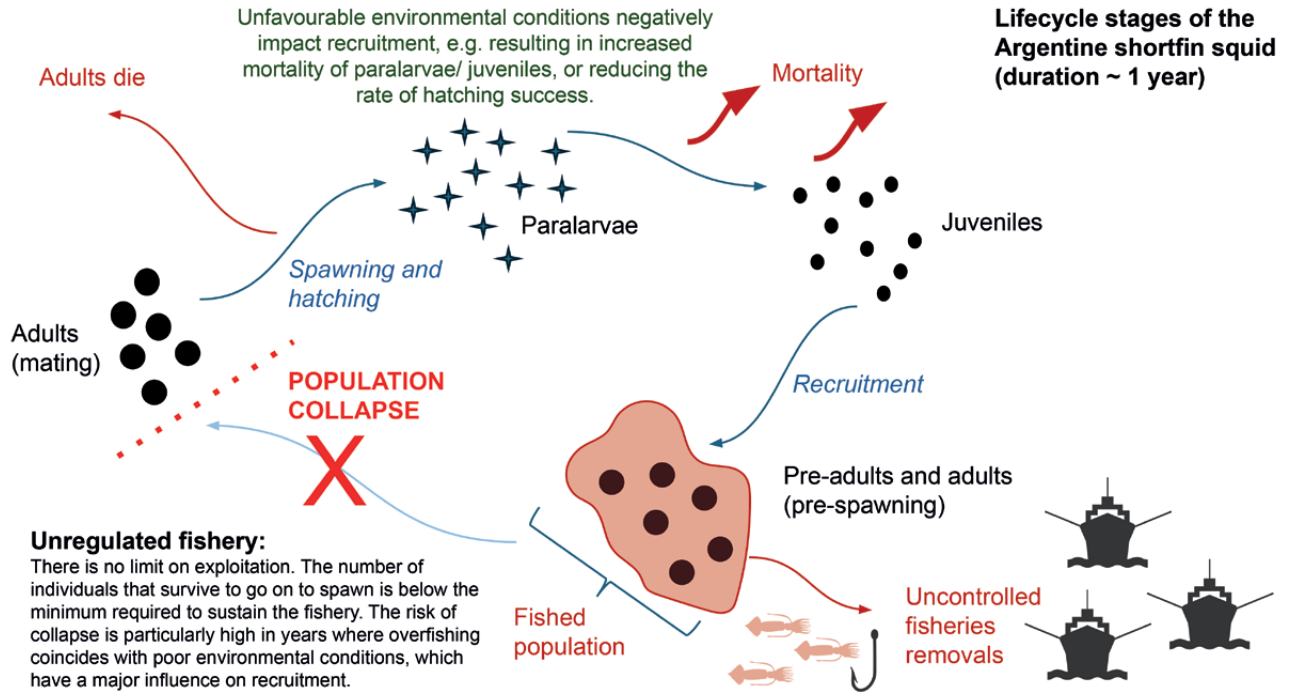


Figure 4b: Diagram illustrating the vulnerability of Argentine shortfin squid populations to overfishing and potential collapse in the context of weak or no management and unfavourable environmental conditions



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Like other squids in the Southwest Atlantic, the Argentine shortfin squid is considered a keystone species,[64] underpinning vital ecosystem functions across the region.[65] It is one of the few species occupying an intermediate position in the food chain, linking organisms at low trophic levels such as zooplankton and crustaceans with top predators such as seabirds, sharks, seals and dolphins.[66] The squid is an important prey for the Argentine hake (*Merluccius hubbsi*),[67] one of the most important commercial species in Argentina and the most consumed fish in the country.[68] In southern Brazil, the shortfin squid is found in the diet of 32 species, including commercially important swordfish and tunas that account for a major proportion of fish landings.[69] Beyond its key role in marine food chains, the species serves as a transient biological pump, transferring energy and nutrients between spatially distinct ecosystems during its lengthy migrations – spanning several thousands of kilometres – between feeding and spawning grounds (**Figure 5**).[70]

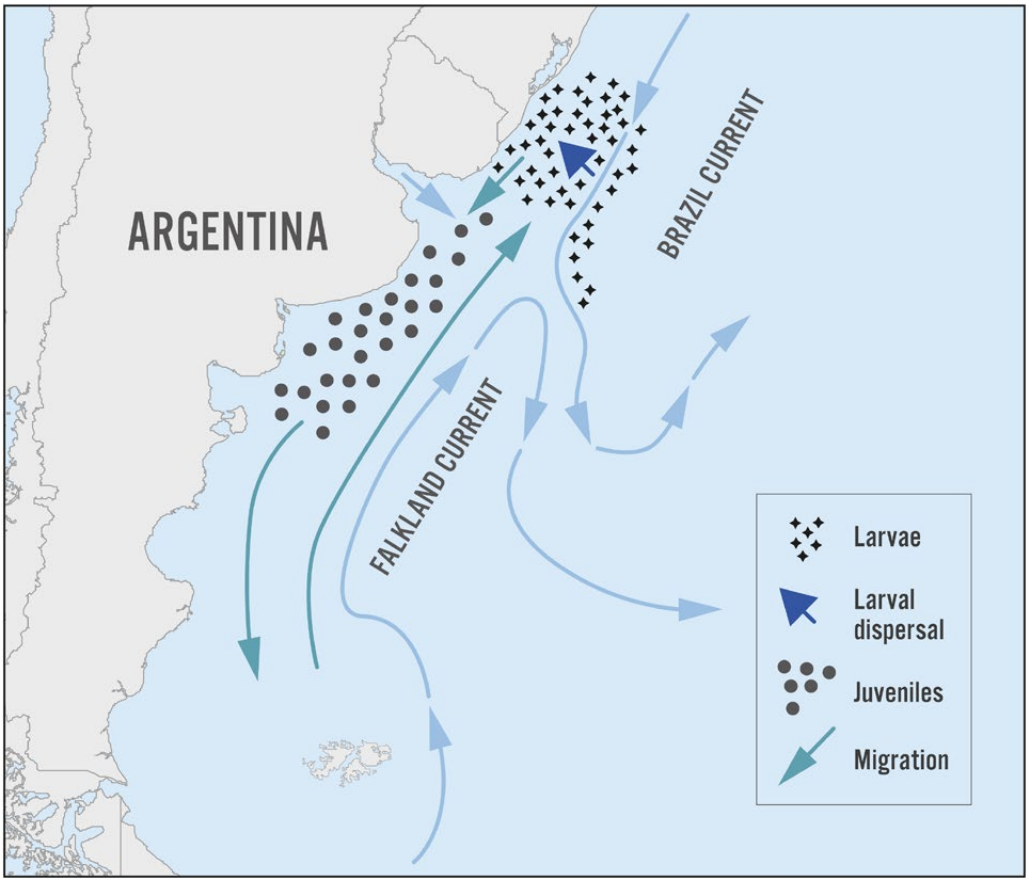
The Argentine shortfin squid is a prey species for Magellanic penguins (*Spheniscus magellanicus*). Credit: Dario Nessi (Kogia)

The Argentine shortfin squid supports one of the world's most important commercial squid fisheries,[71] comprising 12.2% of the global squid catch – and 10.8% of the catch of all cephalopods – in 2023.[72] It is of significant regional importance, accounting for around a fifth of total landings of all species in the Southwest Atlantic – a figure reaching up to 45% in some years[73] – second only to Argentine hake.[74] In Argentina, squid contributes significantly to the national economy,[75] with exports in 2023 valued at US$309 million, accounting for around 18% of the country's total fisheries export value in the same year.[76]

The shortfin squid fishery is centred on the temperate waters of the Patagonian shelf and adjacent oceanic areas.[77] Here, the formation of a thermal front between the warm Brazilian Current from the north and the cold Falklands (Malvinas) Current from the south creates some of the most productive fishing grounds in the world's ocean.[78] There are considered to be two distinct populations of Argentine shortfin squid: a larger winter spawning population (more than 95% of the total population) and a smaller summer spawning population. The winter spawning population is divided into two stocks distinguished by their feeding grounds and size of adults, the most abundant being the South Patagonian Stock.[79] The total biomass of the South Patagonian Stock has fluctuated between 100,000 and 400,000 tonnes in recent years[80] – equivalent in weight to between 20,000 and 80,000 African elephants – illustrating the sheer scale of shortfin squid populations in the Southwest Atlantic.

Like other squids, the species undertakes long-distance migrations during its short (single-year) life cycle between feeding and spawning grounds.[81] Juvenile squids from the South Patagonian Stock migrate south to their adult feeding grounds to the north of the Falkland (Malvinas) islands in February-March, before migrating northwards with the Falkland (Malvinas) Current to deeper water on the shelf slope and, from there, further north to their spawning grounds (**Figure 5**).[82] Spawning takes place on the shelf and continental slope off northern Argentina, Uruguay and Brazil in July-August.[83]

Figure 5: Life history and migration pattern of the South Patagonian stock of the Argentine shortfin squid in the Southwest Atlantic



Adapted from Agnew et al. (2005)[84]

Box 3: Sensitivity of Argentine shortfin squid to environmental conditions

As with other cephalopod species, Argentine shortfin squid, due to their rapid growth and short life cycle, are highly sensitive to marine environmental conditions, which have a major influence on the spatial and temporal distribution of fishing grounds, as well as resource abundance.[85] The squid is particularly sensitive to sea surface temperature and the concentration of chlorophyll in seawater, the latter representing the quantity of phytoplankton and serving as an indicator of marine primary productivity. Research has shown that when the Brazil Warm Current is strong, the growth and foraging range of the species expands accordingly.[86] Chlorophyll concentration, meanwhile, has been shown to have a strong influence on the shortfin squid's reproductive capacity.[87]

Development of the international fishery began from 1980, and in the early 1990s, the Argentine government opened its EEZ to foreign vessels together with the establishment of a domestic squid jigging fleet.[88] In addition to jigging, the shortfin squid is caught in smaller proportions in the Argentine EEZ by trawlers,[89] as part of a mixed-species catch[90]. In Uruguay, the species is exploited by a local fleet,[91] which has reported steadily increasing catches in recent years.[92] In the high seas area beyond the Argentine EEZ, a large international fleet of jigging vessels from China, South Korea and Taiwan and trawlers from Spain, Falkland Islands, China and South Korea, among others, are also active in the fishery (see **Section 4.1**). China initiated squid jigging operations for the species in 1997, and a high seas trawling fishery for the species in 2008.[93] The main fishing season begins in December and continues to June,[94] targeting concentrations of pre-adults and adults.[95]

Close up of squid jigging machines on a Chinese vessel operating in the Southwest Atlantic.

© EJF

4. Recent trends and status of the fishery

4.1. Chinese vessels dominate the high seas fleet at Mile 201

Analysis of AIS data in Global Fishing Watch identified an average of 343 squid jigging vessels operating at Mile 201 each year during the period 2019-2024. Over this period, a total of 539 individual squid jigging vessels were observed operating in the area on AIS, the majority of which were flagged to China (74.6%), with vessels from Taiwan (18.0%) and South Korea (6.7%) also making up a significant portion of the fleet (**Figure 6**). As this only includes vessels transmitting their positions on AIS, the actual size of the fleet may be (substantially) larger.[96] Around a decade ago, for example, the number of squid jigging vessels flagged to China alone was believed to have surpassed 400.[97]

In 2022, China trialled a restriction on the number of squid vessels fishing in the high seas, a figure which was set to 300 vessels for the Southwest Atlantic; however, this appears to have been discontinued.[98] Chinese interests also dominate the Argentine-flagged squid jigging fleet operating within the Argentine EEZ – see **Box 4** for further information.

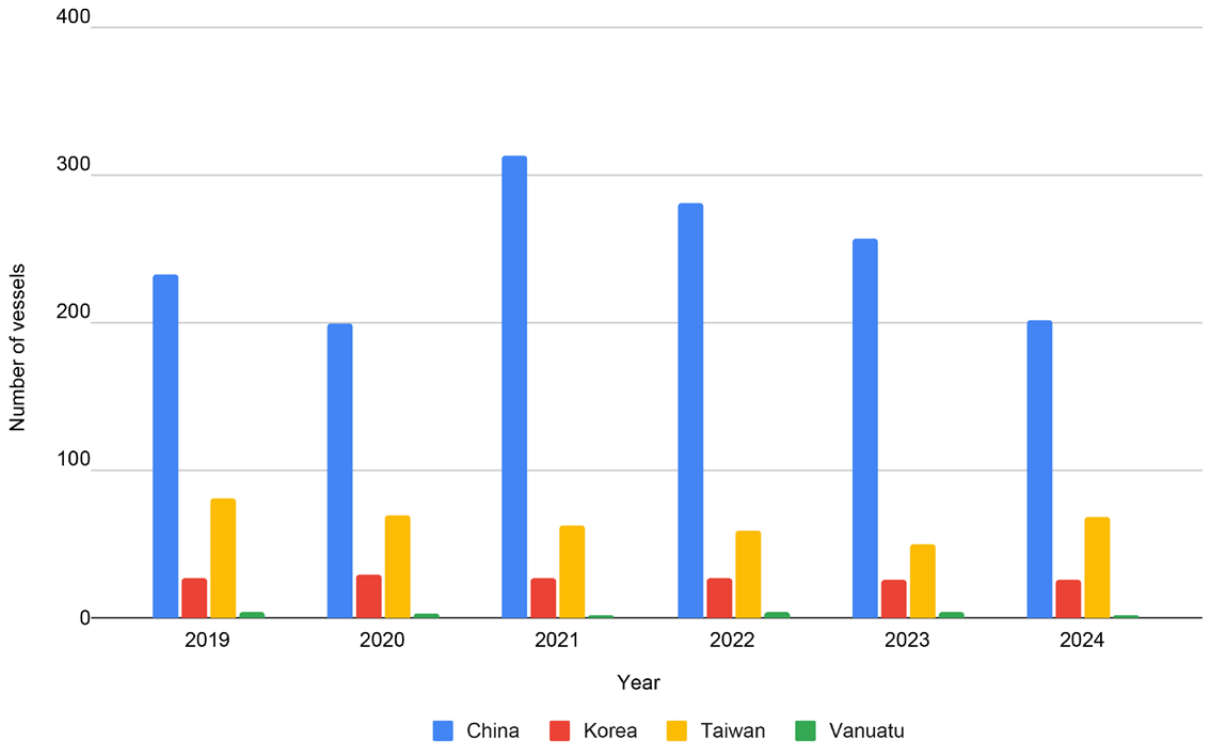
A Chinese-flagged squid jigging vessel operating in the Southwest Atlantic.

In addition to the squid jigging fleet operating at Mile 201, there is a significant trawl fleet operating on the high seas that also exploits the Argentine shortfin squid as part of its catch,[99] alongside Argentine hake, with other species caught in smaller quantities.[100] According to Global Fishing Watch data, in 2024, 82 trawlers were active in the area during the squid fishing season between January and August, accumulating a total of 174,221 apparent fishing hours. A third of these vessels were flagged to Spain (27 vessels), and the remaining to Falkland Islands (17 vessels), China (15 vessels), South Korea (10 vessels), and other flag states (13 vessels). These figures are likely even higher in reality: according to one industry source, the Chinese trawl fleet in the area may number as many as 50 vessels.[101]

Based on available AIS data, Chinese-flagged trawlers had the highest fishing hours during the period 2019-2024, accounting for 39.6% of total trawling effort, followed by Spain (32.4%) and South Korea (21.3%).[102] Notably, while Spain has a significant trawl fleet operating in the region, it accounts for just 4% of Argentine shortfin squid catches each year (see **Section 4.4** below).[103] A fleet of trawlers flagged to the Falkland Islands and owned by Spanish-Falklands joint ventures also operates in the region but primarily targets the smaller Patagonian squid (see **Section 2.1**).[104]

In addition to squid jiggers, there is a significant trawl fleet operating on the high seas that also exploits the Argentine shortfin squid as part of its catch.

Figure 6: Number of squid jigging vessels operating at Mile 201 by flag state (2019-2024)



Source: Global Fishing Watch

Image showing how squid are brought on board after being caught by automatic squid jigging machines – Chinese-flagged vessel operating in the Southwest Atlantic.

Box 4: Chinese ownership of squid jigging vessels operating within the Argentine EEZ

In mid-2024, there were 80 vessels with licenses to fish using squid jigging gear in the Argentine EEZ.[105] These vessels were all operating under the flag of Argentina – in order to obtain a fishing licence in Argentina, vessels must be registered to the national flag and be operated by a natural person domiciled in Argentina or by an Argentine company.[106] Based on available data on ownership, it is estimated that around 43 of the vessels operating within the Argentine EEZ during the 2024 fishing season – equating to 54% of the Argentine-flagged squid jigging fleet – were owned by Chinese parent companies.[107]

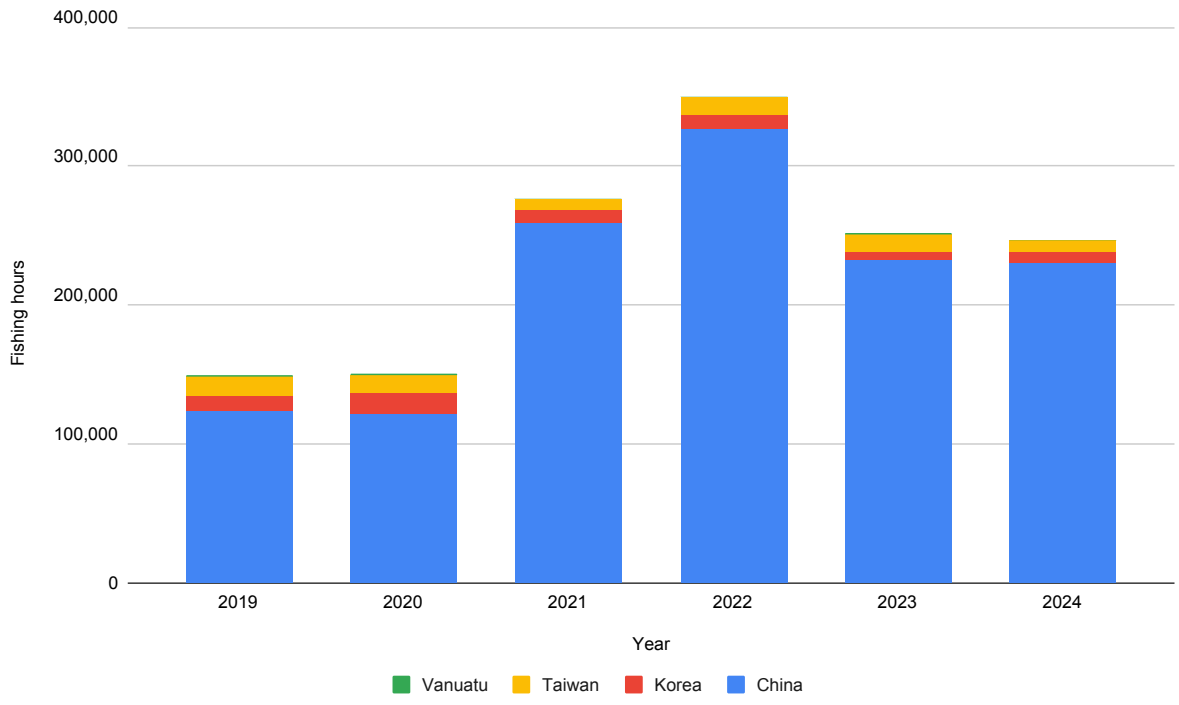
The operations of one of the larger Chinese fishing companies – Qingdao Haoyang Fisheries ('青岛浩洋远洋渔业有限公司'), owned by Chinese conglomerate Shandong Bodelong Group – provides insights into the dynamics of the squid fishing fleet in the study area. In 2019, Qingdao Haoyang bought 95% of the shares of Argentine fishing company Patagonia Fishing SA, scrapped the company's two existing vessels and replaced them with two jiggers built in China, allowing them to take advantage of previously issued squid fishing quota.[108] Again, in 2024, via similar 'flagging-in' arrangements, Qingdao Haoyang bought another Argentine company, Pesquera Latina SA, from Spanish seafood giant Pescanova S.A.[109] Between November 2018 and April 2024, Shandong Bodelong steadily flagged almost all of their squid jiggers to Argentina, taking advantage of the abundant squid resources inside the EEZ. As of the 2024 fishing season, Pesquera Latina SA operates at least seven and Patagonia Fishing SA operates at least two Argentine-licensed squid jiggers for the Shandong Bodelong Group.[110] Vessels owned by the Shandong Bodelong Group have been implicated in alleged human rights and environmental abuses while previously flying the flag of China – see **Section 5.3** below.

Squid jiggers use lights to attract squids. The lights are so bright they are clearly visible from space.

4.2. Uncontrolled expansion of high seas fishing effort

Between 2019 and 2024, a total of 1.43 million hours of fishing activity by squid jiggers took place in the study area, based on estimated fishing effort data in Global Fishing Watch, corresponding to an annual average of around 238,000 hours. Vessels flagged to China were responsible for the vast majority (90.9%) of estimated fishing effort, followed by vessels flagged to Taiwan (4.8%) and South Korea (4.1%) (**Figure 7**). Fishing hours increased by 65% between 2019 and 2024, peaking at 350,528 hours in 2022, an increase almost entirely attributable to the Chinese squid jigging fleet, which saw a 85% increase in effort over the period. In contrast to other distant water fleets, Chinese squid jiggers appear to have intensified their effort at Mile 201: the number of fishing hours per vessel more than doubled over the study period, from 534 hours per vessel in 2019 to 1142 hours per vessel in 2024 (**Table 1**). Meanwhile, South Korean and Taiwanese fishing effort per vessel declined or remained somewhat stable over the same period, respectively.

Figure 7: Number of fishing hours at Mile 201 by flag state (2019-2024)



Source: Global Fishing Watch

Table 1: Average number of fishing hours per squid jigging vessel at Mile 201

Flag state	2019	2020	2021	2022	2023	2024
China	534.3	610.7	827.4	1162.4	906.1	1141.7
South Korea	374.2	503.2	341.9	400.3	224.3	289.5
Taiwan	176.3	185.7	115.9	207.3	248.7	126.5
Vanuatu*	124.0	219.7	44.0	214.0	249.3	156.0

Source: Global Fishing Watch

* Vessels flagged to Vanuatu are suspected to be owned by Taiwanese individuals or companies.[111] Vanuatu is considered a flag of convenience (FoC) according to the International Transport Workers' Federation (ITF).[112]

4.3. Unregulated vs. regulated fishing activity

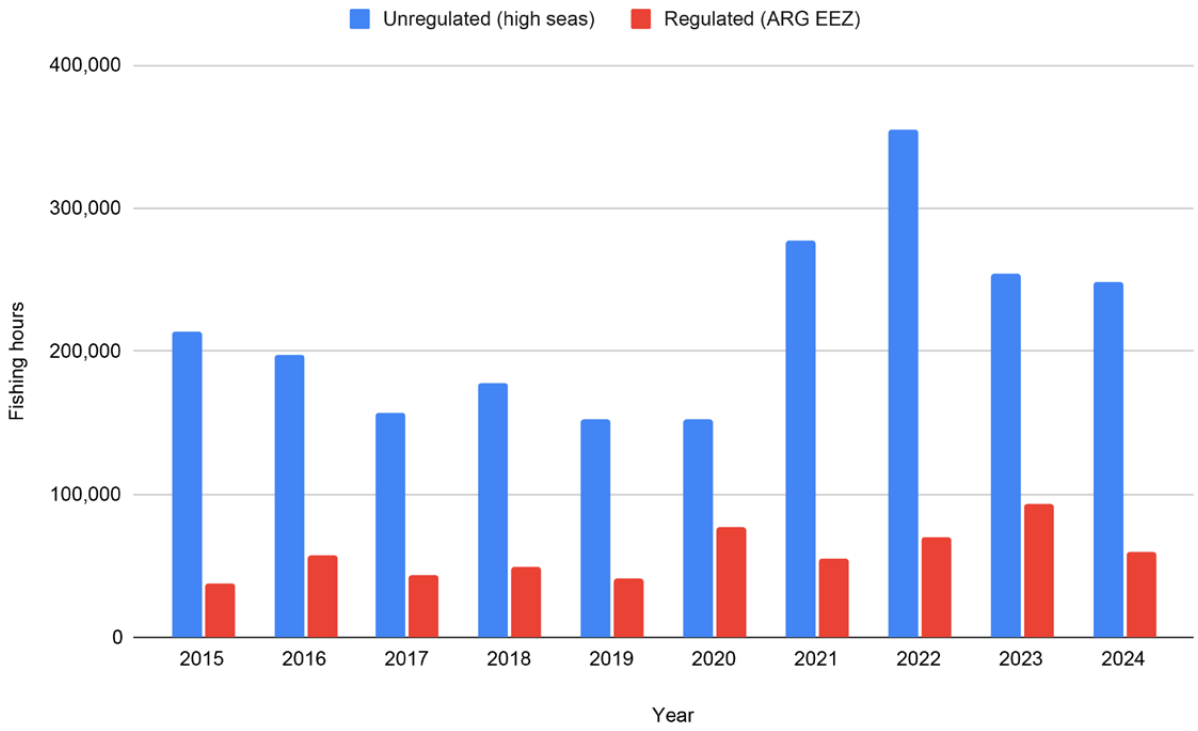
EJF's analysis reveals the intensity of squid jigging activity in the unregulated high seas fishery, compared to regulated fishing activity within the Argentine EEZ. According to AIS data, during the 2024 fishing season, 68 Argentine-flagged squid jigging vessels operating within the country's EEZ (see **Box 4**) recorded 59,277 hours of apparent fishing effort (**Figure 8**). Meanwhile, in the adjacent high seas area, fishing activity was over four times greater, with 296 foreign-flagged squid jiggers active during the same period, carrying out 248,124 hours of apparent fishing effort. This largely uncontrolled fishing activity presents a significant threat to the sustainability of the resource, and undermines all efforts to sustainably manage the fishery within the Argentine EEZ (see **Section 5.1** for further discussion).

In 2023, around 47.5% of the total reported Argentine shortfin squid catch was estimated to be taken from the high seas.[113] Given that much of the high seas catch may go unreported, the true scale of exploitation is likely even higher. Interviews with workers on board the high seas fleet revealed how vessels would catch more squid than they could process, with any excess catch being thrown back into the sea (discarded).

> ***"The deck was already full of squids. They were only good for two days. If they have not been put inside the freezer, of course, it would stink. If we leave them outside, it would still stink. The captain would tell us to throw it away."***
>
> Crew member on a Korean squid jigging vessel, interviewed by EJF in August 2024

Argentine shortfin squid caught by a Chinese squid jigging vessel. Crew members reported how excess catch that could not be processed would be thrown back into the sea.

Figure 8: Comparison of apparent fishing hours taking place within the Argentine EEZ and in the adjacent high seas area 'Mile 201' (2019-2024)



Source: Global Fishing Watch

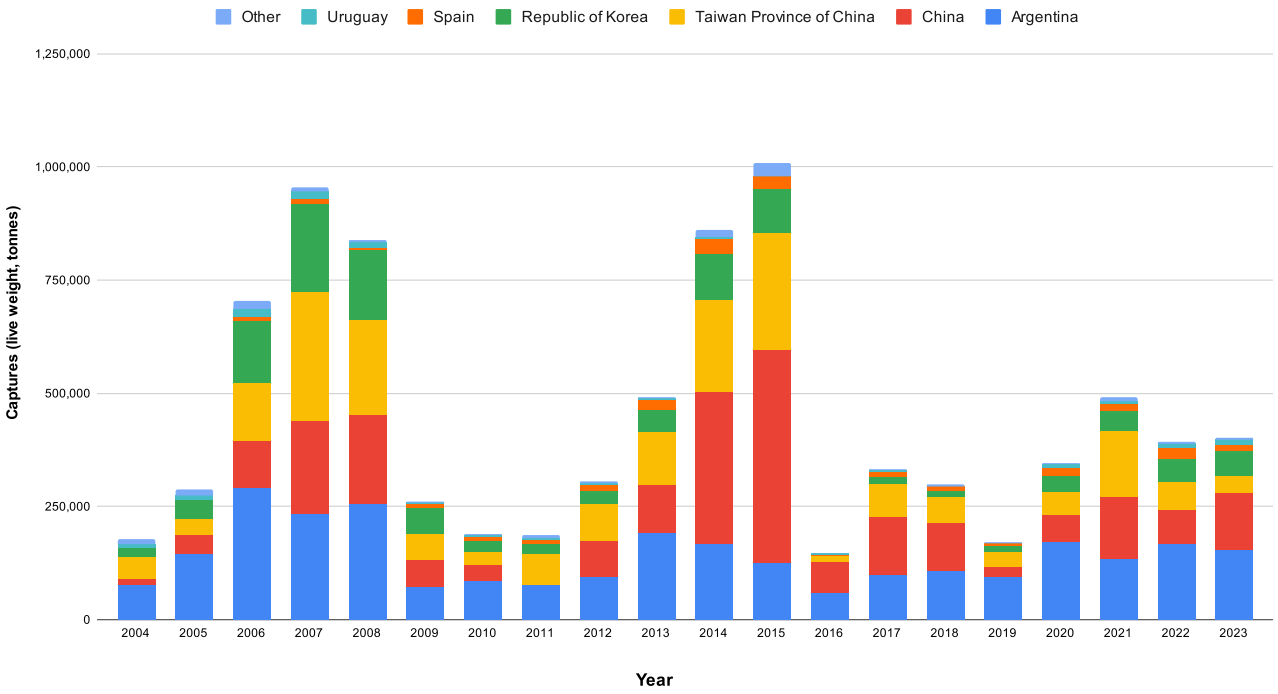
4.4. Shortfin squid landings – a boom and bust trend

According to data reported in FAO Fishstat, China was responsible for nearly a quarter (23.5%) of the total reported Argentine shortfin squid landings during the period 2019-2023,[114] behind Argentina with 40.0% of the total.[115] Taiwan, South Korea and Spain were responsible for 18.5%, 10.8% and 4.2% of landings, respectively, during this period.[116] Species-specific trade data is generally lacking for Argentine shortfin squid, however a tentative estimate for the EU suggests that, during the period 2019-2023, the bloc was the destination for around 17% of Argentine shortfin squid catches taken by the Chinese fleet operating on the high seas, with Spain alone the destination for an estimated 10% of this catch.[117]

Landings from the past two decades appear to follow a cyclical, boom and bust trend,[118] characterised by significant interannual fluctuations (**Figure 9**). The periods 2007-2008 and 2014-2015 saw peaks in landings which, in both cases, were followed by steep declines. The temporary collapse of the Argentine shortfin squid fishery in 2009 had a major bearing on global cephalopod landings in that year which also exhibited a sharp decline.[119] Concerningly, while landings had recovered within a few years of the 2009 crash, landings have not shown similar signs of recovery following the crash of 2016. Overfishing is considered a key driver of these trends, reflecting a lack of international collaboration in the region,[120] however environmental factors also play a role (**Box 3**).

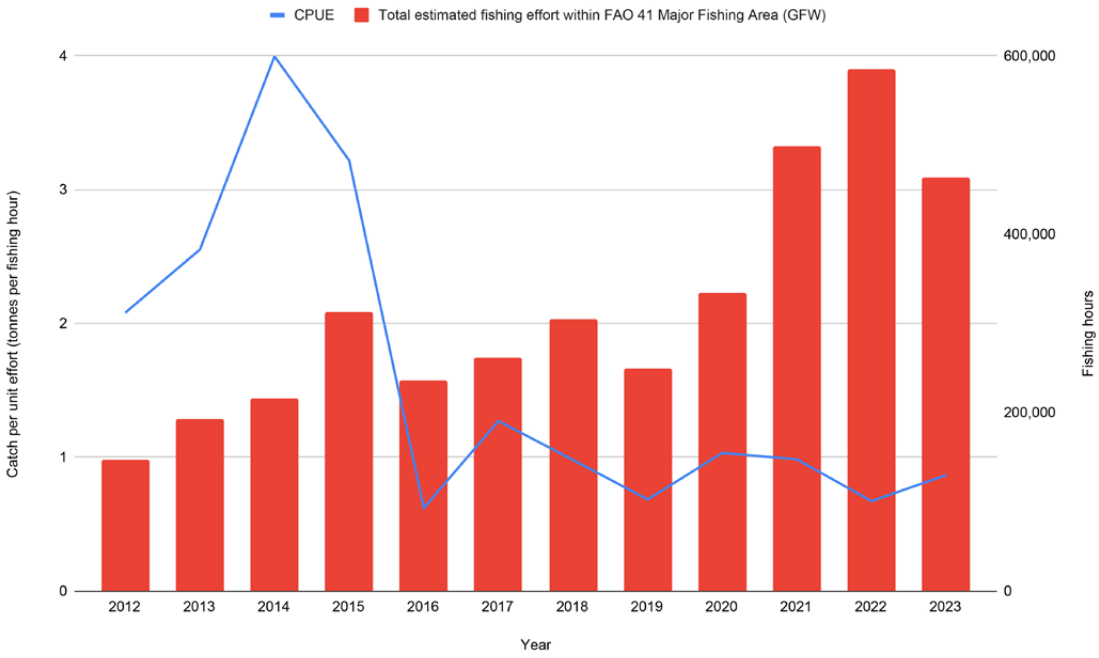
These observations are consistent with trends in CPUE, which show a steep decline in 2016, following which CPUE fluctuates, on average, at less than a third of the levels seen during the period 2012-2015 (**Figure 10**). Similar trends have been observed in other regions: under the NPFC and SPRFMO, for example, CPUE for squid jigging fleets has been declining for several years, a worrying indicator of declining abundance.[121] Meanwhile, data on Southwest Atlantic squid prices shows an increasing trend since 2018 which may be indicative of limited supplies, among other factors such as increasing labour and fuel costs, and rising demand (**Figure 11**).[122]

Figure 9: Landings of Argentine shortfin squid by reporting country (2004-2023)



Source: FAO Fishstat

Figure 10: Argentine shortfin squid catch per unit effort (CPUE) for squid jiggers operating in the Southwest Atlantic (FAO Major Fishing Area 41, 2004-2023)

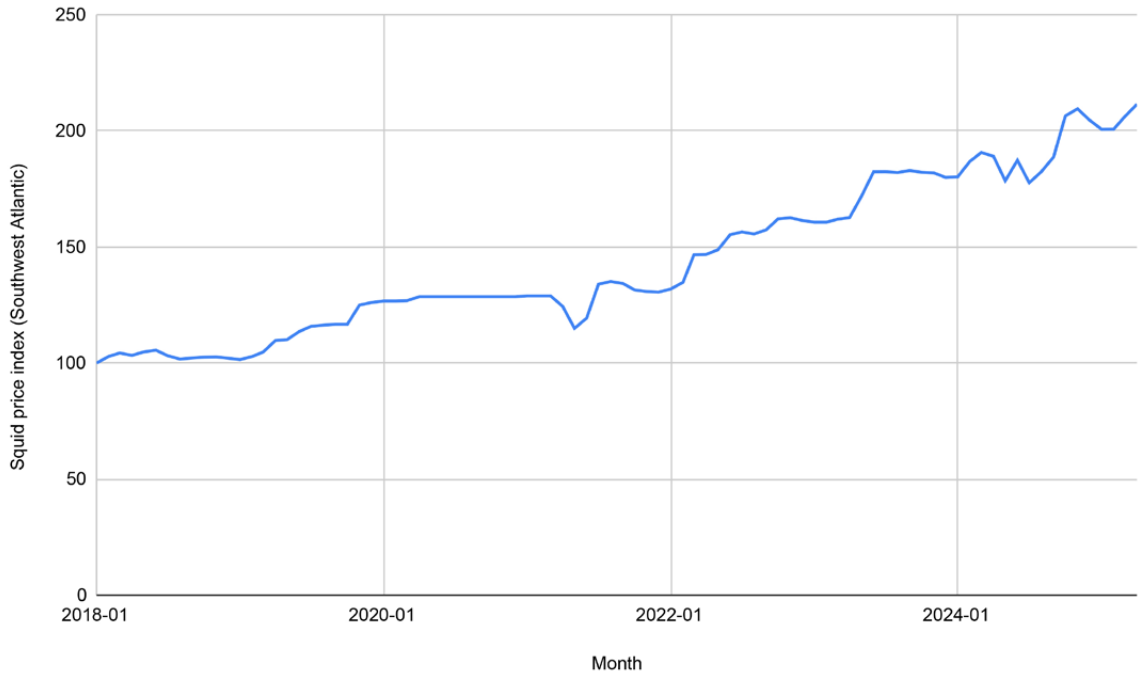


Source: Landings data from FAO Fishstat. Apparent fishing effort data from Global Fishing Watch.

Notes:
The CPUE figures are calculated based on total reported landings of Argentine shortfin squid and fishing effort data for the squid jigging fleet operating in the region. These figures should be interpreted with caution, as the rise in fishing hours during the early years of the Global Fishing Watch dataset (2012-2016) at least partially reflects an increase in satellite and terrestrial receivers.[123] It is noted that while trawlers also capture Argentine shortfin squid, the species represents only a portion of their total catch, and it was therefore not possible to include trawl fishing effort within the calculations of CPUE. In addition, the fishing effort data presented here is a conservative estimate as there are likely further squid jigging vessels operating in the region that do not transmit data on AIS and which are therefore not reflected in Global Fishing Watch apparent fishing effort data. As a result, CPUE figures likely represent an overestimate of Argentine shortfin squid CPUE per squid jigging vessel.

A tentative estimate for the EU suggests that, during the period 2019-2023, the bloc was the destination for around 17% of Argentine shortfin squid catches taken by the Chinese fleet operating on the high seas, with Spain alone the destination for an estimated 10% of this catch.

Figure 11: Evolution of China's monthly squid price index (January 2018 to April 2025)



Source: China's Oceanic Squid Index[124]

4.5. Assessments of stock status

The Argentine shortfin squid is a straddling resource, exploited by both domestic and distant water fishing fleets as it migrates between national waters and adjacent high seas areas. Assessing the health of straddling fisheries is complex, requiring the sharing of data between coastal states and fishing nations, and international collaboration to undertake scientific assessments. These complexities are compounded in the Southwest Atlantic, where the necessary frameworks for regional cooperation, data reporting and information exchange are severely lacking.[125]

"Both fleets [Argentine and foreign] are targeting the same population. For the correct management of the resource, we would need to know all the catches that take place. But we don't know about the catches occurring outside the EEZ, so we can just make an estimation."

Dra. Marcela Ivanovic, Head of Cephalopods Fisheries Programme at INIDEP

While most of the Argentine shortfin squid stocks are data poor,[126] a Marine Stewardship Council (MSC) pre-assessment[127] was able to evaluate the state of the South Patagonian Stock, the most abundant group within the winter spawning population (see **Section 3**). The pre-assessment report concluded that, based on data for 2019, the South Patagonian Stock appeared to be overfished, with low CPUE and below average estimates of pre-recruitment abundance.[128] While a more recent assessment by FAO considers the Argentine shortfin squid to be fished at biologically sustainable levels, scientists interviewed by EJF, alongside a growing body of literature, underline the precarity of squid populations in the face of uncontrolled harvest – especially in unregulated high seas fisheries[129] – and raise concerns about the declining trend in squid populations both in the Southwest Atlantic[130] and globally.[131] Overfishing in just a single year could trigger collapse of the population, were this to coincide with a period of unfavourable environmental conditions for squid reproduction and biology (see **Sections 3 and 5.2**).

"The activity of the large foreign fleet in the region surrounding the EEZ maintained the same pattern as in recent years. We reiterate that this situation represents a significant threat to the sustainability of the resource."

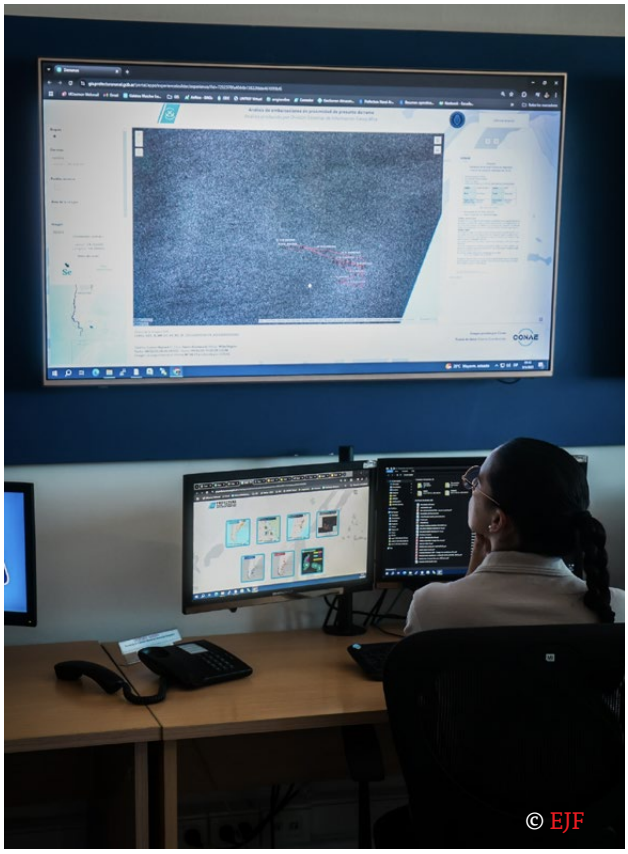
INIDEP (2022)[132]

5. Management of the fishery and associated impacts

Argentine shortfin squid populations are under intense pressure. Fishing effort is high and has increased substantially in recent years – particularly in the unregulated high seas fishery – with worrying signs of overfishing and declining abundance (see **Section 4**). Yet regional management is severely lacking, preventing the necessary action to respond quickly to signs of stress and ensure the long-term health of squid populations and the broader ecosystem.

5.1. Regulation is severely lacking on the high seas

> ***"In our EEZ, there are strict management plans and permanent controls on the Argentinian fleet. Outside the EEZ, none of this happens, even though we are talking about the same species. The difference in terms of regulation is abysmal between our EEZ and beyond the EEZ."***
>
> Captain Sergio Almada, Argentine Coast Guard



Argentine Coast Guard monitoring centre in Buenos Aires, where officers track fishing activity using a range of systems including AIS, VMS, satellite imagery, and radar from their own patrol vessels.

Within the Argentine EEZ, the shortfin squid fishery is subject to regulation and close management oversight. Vessels are subject to licensing, vessel monitoring system and electronic reporting requirements; landings and trans-shipments are controlled; and seasonal closures are implemented for specific areas of the Argentine EEZ to ensure the health of the squid population.[133] Enforcement is carried out by the Argentine Coast Guard, which uses a combination of methods including AIS data, satellite imagery, radar systems and at-sea patrols to prevent incursions into the EEZ by unauthorised vessels. In recent years this has largely eliminated incursions by foreign vessels into the Argentine EEZ.[134]

Squid populations are monitored and assessed by the INIDEP, with the aim of ensuring a percentage of the population (set at 40%)[135] can escape from exploitation to ensure successful recruitment the following year ('biological escapement'). At the beginning of the fishing season, the INIDEP conducts scientific surveys to assess the health of the shortfin squid population. During the fishing season, populations are monitored in real-time using catch and effort data from vessels that target squid, supported by biological sampling by onboard observers.[136] An estimate is also made of removals by squid jigging vessels beyond the Argentine EEZ.[137] Based on this information, if the level of biological escapement is at risk of not being met, the INIDEP informs the Federal Fisheries Council (Consejo Federal Pesquero) and the Undersecretary of Aquatic Resources and Fisheries (Subsecretaría de Pesca y Acuicultura), which have the authority to close the fishing season. While some areas for improvement have been identified – including the need for further limits on fishing effort/harvest control rules, a more precautionary escapement threshold, and monitoring of ecosystem impacts[138] – the system is a valid attempt to ensure the long-term viability of the fishery through early warnings and responsive management.

Yet, these efforts are severely compromised by the vast and largely uncontrolled exploitation of the very same squid population just beyond the Argentine EEZ. The high seas accounts for almost half of the

Argentine shortfin squid catch (see **Section 4.3**), yet fishing activity in these areas is not subject to regional management or oversight.[139] Some fleets have implemented unilateral conservation measures for squid, for example, Spain has designated nine zones that are closed to bottom trawling based on scientific mapping of the seabed.[140] In past years, China has also implemented an area-based moratorium on squid fishing from 1 July to 30 September.[141] While broadly corresponding to key spawning grounds, the moratorium has been criticised as excluding the main areas of Chinese fishing activity[142] and appears to have been discontinued since 2024.[143] The prevalence of illegal fishing and human rights abuses – particularly on the Chinese fleet – further calls into question claims by flag states that the squid fishery is properly managed (**see Section 5.3**). Most importantly, as a straddling resource, management of the shortfin squid demands international cooperation, both to determine the impacts of exploitation on squid populations, and to implement harvest controls. Without the necessary coordinated management and scientific assessments, the threat of collapse looms large, with likely catastrophic consequences for marine ecosystems – in which the shortfin squid plays a critical role (see **Section 3**) – and the communities and economies that rely on them.

Argentine shortfin squid on a Chinese-flagged squid jigger. Scientists warn that overfishing of the species could coincide with unfavourable environmental conditions, resulting in the collapse of the fishery.

5.2. The looming threat of collapse

Squid populations are particularly vulnerable to overfishing. As short-lived, single generation species, they are highly sensitive to environmental conditions (**Box 3**), and their populations often fluctuate significantly from year to year.[144] In good years, factors such as favorable ocean temperatures and high primary productivity can lead to population booms. However, in bad years, poor environmental conditions can cause populations to decline – sometimes dramatically. While squid have the ability to rebound quickly following a naturally weak year, intense fishing pressure during periods of low biomass can push populations past a critical tipping point.[145]

The past two decades have seen significant fluctuations in the abundance of Argentine shortfin squid (**Figure 9**), a 'boom and bust' cycle likely reflecting heavy fishing pressure, as well as environmental and climatic variation (**Section 4.4**).[146] While the relative importance of these factors remains poorly understood,[147] scientists warn that overfishing could coincide with unfavourable environmental conditions, resulting in the collapse of the fishery.[148] In this context, the absence of cooperation between coastal states and fishing nations to effectively respond to these fluctuations – and adjust fishing pressure accordingly – is highly concerning. The *Illex illecebrosus* (Northern shortfin squid) fishery should serve as a stark warning: in the early 1980s, the fishery collapsed following a period of intense, widely distributed fishing in the Northwestern Atlantic (**Box 5**).[149] Meanwhile global heating is acting as a threat multiplier, pushing already depleted populations into an ever more precarious state (**Box 6**).

"The last 10 years have been years with enormous fishing pressure. In some years the abundance of the resource has gone very low, but squid has surged again. Environmental conditions are probably saving squid. However, a situation could happen where the biological escapement is low and coincides with poor environmental conditions. This could lead to the collapse of the fishery."

Dra. Marcela Ivanovic, Head of the Cephalopods Fisheries Programme at INIDEP

As noted in **Section 3**, the Argentine shortfin squid is a keystone species,[150] occupying a central, intermediate position in marine food chains and playing a vital role in the transfer of nutrients across vast distances during its lifecycle migrations.[151] A collapse of the population would have cascading effects across the entire Southwest Atlantic ecosystem, disrupting oceanic food webs and impacting a wide range of ecologically interconnected fauna. This includes vulnerable dolphins, whales and seabirds which prey on the species, as well as commercially important fish, such as Argentine hake, that are critical in local diets and to coastal and national economies. Scientists emphasise the need for careful management of Southwest Atlantic squid populations due to their uniquely important role in the ecosystem and potential for significant disturbances should they collapse.[152]

"A dramatic decrease of squid populations would cause an imbalance in the whole food chain. This would affect species of commercial interest but also species not important commercially but key in the ecosystem, such as many marine mammals and seabirds."

Dra. Marcela Ivanovic, Head of Cephalopods Fisheries Programme at INIDEP

"If we are talking about overexploitation of the resource, we are going to have a problem with hake, because it would run out of food (it feeds on squid). Then we would be affecting another key fishery."

Lieutenant Jessica Paola Chiarandini Fiore, Scientist with the Argentine Coast Guard

The Argentine shortfin squid is one of the few species occupying an intermediate position in the food chain, linking organisms at low trophic levels with top predators such as whales.

Argentine shortfin squid is found in the diet of sperm whales *(Physeter macrocephalus)*. Credit: Jono Allen (Kogia)

Box 5: A warning from history – the decline of the Northern shortfin squid fishery in the Northwestern Atlantic

Initially underexploited in the early 1960s, the *Illex illecebrosus* (Northern shortfin squid) fishery became a target for Soviet and Japanese distant water fleets by the mid-decade, particularly in the Northwest Atlantic off Newfoundland, Nova Scotia, and the U.S. East Coast. What began as a modest fishery rapidly transformed into one of the fastest-growing squid industries in the world. However, this boom proved unsustainable – by 1979, signs of population decline were evident, with recruitment failures and falling catches. By the early 1980s, the fishery had collapsed, with landings reduced to a fraction of their peak levels.[153]

Box 6: Vulnerability of squid populations to global heating

Squids are extremely sensitive to changes in the marine environment and therefore highly vulnerable to the impacts of global heating. While some squid species may be able to adapt and potentially benefit, responses will likely be species-specific, dependent on physiology, life cycle characteristics, and behaviour.[154] At present, scientific data is largely insufficient to accurately predict the future responses of commercial squid to climate change.

In the case of Argentine shortfin squid, studies suggest that rising temperatures during key life-history stages could adversely affect the abundance and size of individuals,[155] while shifts in species distribution are likely.[156] According to one study, global heating poses a considerable threat to the Argentine squid and other southern hemisphere squid species, due to the lack of poleward continental platforms to colonise and the presence of other oceanographic features likely to prevent their expansion (e.g., the Antarctic Circumpolar Current).[157] Steep declines in habitat suitability are also projected to occur in areas of high shortfin squid abundance, posing a further threat.[158] Due to impacts on both range and abundance, and with the high seas fishery currently unregulated and at risk of overexploitation, the Argentine shortfin squid fishery is projected to be one of the hardest hit by climate change impacts, with a risk of local extirpations and associated economic hardship.[159]

5.3. Abuses abound in the absence of regional oversight

(a) Prevalence of illegal fishing and human rights abuses

The Argentine shortfin squid fishery operates under a critical lack of oversight, leaving the door open for egregious human rights abuses as well as illegal and unsustainable fishing. Vessels remain at sea for many months and sometimes years at a time, travelling across ocean basins to reach fishing grounds, while refueling, resupplying and offloading catch at sea.[160] These operations allow vessels to avoid controls at port, with oversight from authorities or observers either absent or minimal. Hundreds of miles from shore and thousands of miles from their homes, many crew are subjected to forced labour, violence and abuse.

EJF conducted 169 interviews with Indonesian (97.6%) and Filipino (2.4%) crew members who worked on 110 squid jigging vessels between 2019 and 2024, covering roughly 20.4% of the squid jigging fleet operating at Mile 201. The breakdown of interviews by flag state can be seen in **Table 2**. Coverage of the Chinese fleet was significantly lower than the other two fishing states, underscoring the massive scale of China's distant water fishing activities in the region.

The data nevertheless demonstrates the potentially widespread incidence of illegal fishing and human rights abuses in the fleet, particularly on Chinese-flagged squid vessels (**Tables 3–5**). The findings suggest that any claims made by flag states – and by China in particular – that the squid fishery is properly managed are unfounded. On the contrary, the evidence points to systemic failures that have allowed abuse to continue unchecked, and the need for urgent action to address these issues through improved management oversight.

Table 2: Overview of interview data for squid jigging vessels operating in the Southwest Atlantic

Flag	Number of crew members interviewed	Number of unique squid jigging vessels identified from crew interviews	Total number of squid jigging vessels operating at Mile 201*	Vessels identified in interviews as a % of flag state's squid jigging fleet operating at Mile 201
China	56	46	402	11.4%
South Korea	57	25	36	69.4%
Taiwan	56	39	97	40.2%

* According to AIS data in Global Fishing Watch.

"Another important problem is the issue of trans-shipments – of crew, catch, repairs, etc. – at sea. They allow the vessels to stay for long periods without moving, fishing without limit….and [also] keeps them away from ports. All kinds of controls – navigation security checks, health controls, working conditions, catch, etc. – are being avoided by staying at sea for [so] long."

Captain Sergio Almada, Argentine Coast Guard

High seas trans-shipment operation in the Southwest Atlantic captured by the Argentine Coast Guard. At-sea servicing, refuelling and offloading (trans-shipment) of catches is a major facilitator of illegal and unsustainable fishing and human rights abuses. Vessels can spend many months and even years at sea, evading inspection and oversight of authorities.[161]

(b) Illegal fishing and harm to marine wildlife

Interviews with crew provided insights into suspected illegal practices on the high seas squid jigging fleet in the Southwest Atlantic. Ten crew members working on nine different Chinese vessels reported being asked to obscure their vessel's identity by re-painting or covering up vessel names and/or serial numbers (**Table 3**). Changing a vessel's name or number without authorisation is a punishable offence under the Chinese Offshore Fisheries Management Regulations.[162] Such behaviour may further indicate that fishing activities took place in a prohibited area/ without authorisation. Of the Chinese vessels reported by crew members in connection with suspected illicit behaviour, two vessels are authorised to export their catch to the UK and one vessel is also authorised to export to the EU.

"Yes, the vessel operated in a prohibited area. And the name of the vessel and the IMO number were covered with a tarpaulin....[t]he captain told us that it was a prohibited area for fishing but had a lot of squids."

Crew member working on board a Chinese squid jigger, interviewed by EJF in September 2021

"Since there was no license, the captain instructed all the crew members to cover the vessel's serial number and vessel's name."

Crew member working on board a Chinese squid jigger, interviewed by EJF in November 2022

"I was on [Vessel A] when the vessels were stealing fish [fishing where not permitted]. At first, I had no idea – I didn't suspect that the vessel was stealing. But I just realised it when I saw the vessel number was covered with a cloth, even the hull was covered too – the vessel's identity was covered. Eventually, the police found us, and the vessels fled. [Vessel B] was caught."

Crew member working on a Chinese squid jigger, interviewed by EJF in October 2022

"There was one time when, maybe because there were no more squids in Argentina's waters, we moved to a location that wasn't permitted... It was in a nearby area, still within the same strait... we stole specifically in Falkland.... Sometimes we would cross the border, and if there was a patrol, we would move back to the other side of the border.... As part of the stealing method, the vessel's serial number would be covered, and the vessel's name would be painted over so the serial number wouldn't be visible."

Crew member working on board a Chinese squid vessel, interviewed by EJF in October 2022

"In the afternoon, we were told to paint the body of the vessel so the name wouldn't be visible. Then, the captain turned off the GPS. And finally, what really convinced us that we were stealing in that area was that, that night, we were chased by what looked like a military vessel from Argentina... At that time, a military vessel from Argentina had already gotten close. But there were a lot of vessels in the area, so many were being chased. We managed to escape the pursuit that time."

Crew member working on board a Chinese squid vessel, interviewed by EJF in May 2021

According to witness accounts, harpooning of seals and walruses is a relatively common practice, particularly on the Chinese and Taiwanese squid jigging fleets where it was observed on over 40% and 20% of vessels for which interview data was collected, respectively (**Table 3**). These mammals were caught deliberately and slaughtered for their teeth, tusks and/or fur for decorative/ornamental purposes and their bodies discarded. As squid jigging vessels are not equipped for the capture of large mammals, the process of hauling the animal onto deck is long and gruesome, with crew using ropes and hooks to drag the animal from the water, often wounded but still alive (**Figure 12**).

Table 3: Overview of alleged illegal fishing and harm to marine wildlife reported by crew members

	No. of Chinese vessels implicated	% Chinese squid jigging fleet at Mile 201 covered by interviews	No. of South Korean vessels implicated	% South Korean squid jigging fleet at Mile 201 covered by interviews	No. of Taiwanese vessels implicated	% Taiwanese squid jigging fleet at Mile 201 covered by interviews
Changing or covering vessel names/ numbers	9	19.6%	0	0.0%	0	0.0%
Harpooning of seals or walruses	20	43.5%	1	4.0%	8	20.5%
Shark finning	12	26.0%	0	0.0%	2	5.1%

Source: EJF interviews with crew members working on squid jigging vessels operating in the Southwest Atlantic

As squid jigging vessels are not equipped for the capture of large mammals, the process of hauling the seals onto deck is long and gruesome. Crew would use ropes and hooks to drag the animal from the water, often wounded but still alive.

Captured species included the South American fur seal (*Arctocephalus australis*), which is listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)[163] and Appendix II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS)[164].

Under the Taiwanese Wildlife Conservation Act,[165] it is an offence to hunt or kill any species in the list of protected wildlife, which includes the South American fur seal[166]; however the species is not protected under equivalent Chinese legislation. Of the vessels identified in connection with this cruel practice, five Chinese and five Taiwanese vessels are currently authorised to export to the UK[167] and to the EU.[168]

Penguins are occasionally captured during squid fishing operations, according to crew members working on board the Chinese-flagged squid jigging fleet, but are usually released. This is consistent with observer reports from squid jigging vessels operating in the Falkland (Malvinas) Islands, which recorded (limited) instances of entanglement/hooking of seabirds, including albatrosses, giant petrels and Magellanic penguins, which would become caught on the lures by the wing, leg, beak or webbing of their feet, occasionally resulting in major injury.[169]

Image of a penguin on board a Chinese squid jigging vessel.

Figure 12: Screen capture from a video of a seal being hauled from the water by workers on a Chinese-flagged squid jigger. The seal appears to have been harpooned but is still alive. It was later hit on the head repeatedly with a wooden mallet.

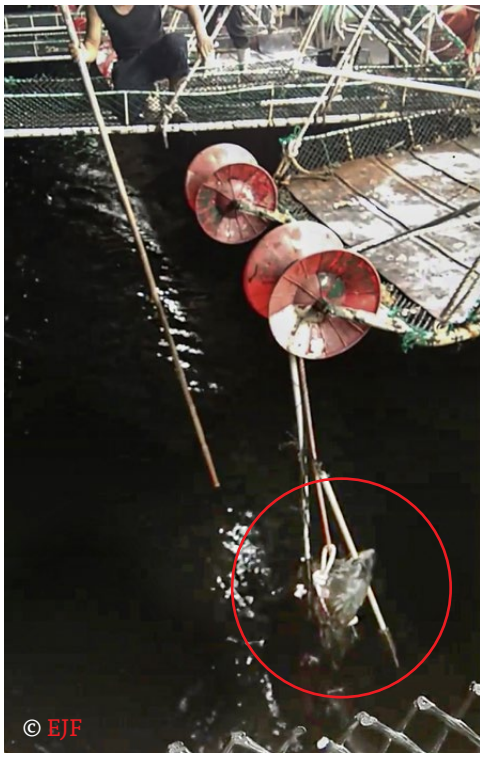


Figure 13: A South American fur seal captured by a Chinese-flagged squid jigger with injuries consistent with being harpooned. One crew member described how the vessel took hundreds of seals, intentionally hunting them as they passed the vessel.

"[It happened] often. If the seals got close to the vessel, the vessel would harpoon them. After the seals were brought on board, the teeth were pulled. The vice [captain] took the teeth and genitalia. Sometimes he also took the body and skin – but the (bodies) were often discarded."

Crew member working on board a Chinese squid jigger, interviewed by EJF in September 2021

"For other animals such as seals – the Chinese intentionally hunted them. The seals were harpooned. It often happened. When a seal passed the vessel, the Chinese would immediately harpoon them....I think hundreds. The Chinese took the teeth and skin. The meat was discarded."

Crew member working on board a Chinese squid jigger, interviewed by EJF in September 2021

"We used a harpoon. The bait was thrown into the water, once the seals got near the vessel they would be harpooned."

Crew member working on board a Taiwanese squid jigger, interviewed by EJF in November 2021

"11 seals in 5 months...they just take their head and throw the body."

Crew member working on board a Taiwanese squid jigger, interviewed by EJF in June 2023

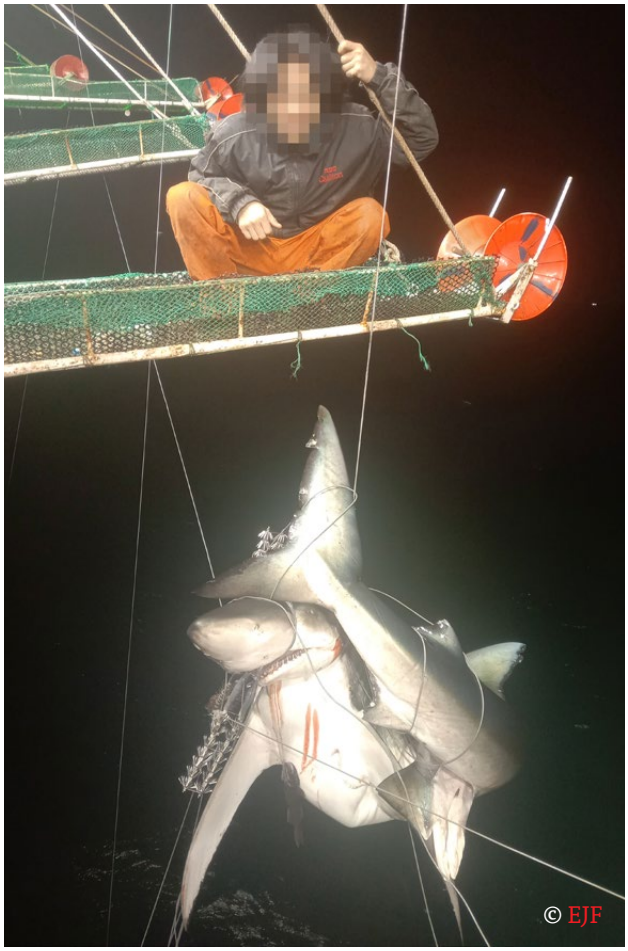
"For seals, they were harpooned – we usually got one seal a day. Squids were used as bait to lure them. That would attract them and they would roam around the vessel. Then they were harpooned. Their teeth were taken by the Chinese then their bodies were discarded."

Crew member working on board a Chinese squid jigger, interviewed by EJF in July 2021

Shark finning refers to the practice of removing a shark's fins – often while the shark is still alive – and discarding the body back into the ocean. According to interviews with crew, shark finning is practised on board squid jiggers fishing in the Southwest Atlantic, although the prevalence is lower than in the longline fisheries examined by EJF in previous reports.[170] Crew members on over a quarter (26%) of the Chinese vessels and 5% of Taiwanese vessels for which interview data was collected provided eye witness accounts of shark finning on the squid jigging fleet (**Table 3**). The sharks were generally caught as by-catch, and the fins dried or frozen and kept by the Chinese or Taiwanese officers. According to footage shared by crew and testimony, the most commonly caught shark by squid jigging vessels is the Blue Shark (*Prionace glauca*), which is listed in Appendix II of the CMS (**Figure 14**). Seven Chinese and two Taiwanese squid jigging vessels identified as having engaged in shark finning were authorised to export their catch to the EU and UK in 2025, and one Chinese vessel was authorised to export to the EU but not to the UK.[171]

A Blue Shark caught by a Chinese squid jigging vessel.

Both China and Taiwan have adopted regulations to require shark fins and bodies to be kept together. For China, these largely follow the requirements of RFMO conservation and management measures (CMMs) and only apply to tuna vessels and not to squid jiggers.[172] Taiwan, on the other hand, has had regulations in place since 2017 that specifically prohibit the removal of shark fins on board squid jigging vessels: therefore all examples of shark finning observed on Taiwanese squid jigging vessels are illegal according to Taiwanese law.[173] The International Commission for the Conservation of Atlantic Tunas (ICCAT) has also adopted CMMs for sharks caught in the Atlantic, including catch limits for the South Atlantic Blue Shark[174] and a requirement to retain on board all parts of the shark (except the head, guts and skins) to the point of first landing.[175] However, again, these CMMs only apply to sharks caught by ICCAT contracting parties authorised to fish for tuna and tuna-like species in the ICCAT Convention area, and not to the squid jigging and trawl fleets operating in the Southwest Atlantic that fall outside ICCAT's mandate.[176]



Shark tangled in a fishing line on a Chinese squid jigging vessel.

"The sharks were caught. We [Indonesian crew] did not process the sharks nor were we allowed to document the process – the Chinese were the ones who processed the sharks. Some of the fins were sun dried first, some were processed right away – they shredded the fins but I am not sure. The bodies were...mostly discarded. Sometimes the Chinese crew members who liked the shark body would dry it – one shark body was big enough."

Crew member working on a Chinese squid jigger, interviewed by EJF in September 2021

"We often caught sharks...the fins were taken."

Crew member working on a Chinese squid jigger, interviewed by EJF in June 2024

"Yes often, but they were accidentally stuck and pulled; the sharks were processed by the Chinese, they only took the fins and discarded the body. The Chinese took them."

Crew member working on a Chinese squid jigger, interviewed by EJF in September 2021

"The sharks got stuck in the fishing line. We did not intentionally target the sharks...The sharks were cut, the fins were taken. The bodies were usually discarded."

Crew member working on a Chinese squid jigger, interviewed by EJF in September 2021

"We only cut the fins and threw the bodies away."

Crew member working on a Chinese squid jigger, interviewed by EJF in October 2022

"It was intentional. When we had nothing left to catch, we would set the rod for the sharks. We used the squid as bait. We did that during break time or when the storm struck. We caught them using fish gaff... We took [the shark] fins and then threw away the bodies. The captain told us to cut the fins, boil them and then dry them. After that, we handed them to the foreman, he would keep them in his room."

Crew member working on a Taiwanese squid jigger, interviewed by EJF in March 2021

"Only the fins were taken. If they [the fins] were all gathered, there would be a lot, probably around a tonne. There really were quite a lot of them... They [the fins] were stacked with squids because they [the sharks] are protected animals."

Crew member working on a Taiwanese squid jigger, interviewed by EJF in January 2023

Taiwan has had regulations in place since 2017 that specifically prohibit the removal of shark fins on board squid jigging vessels.

Figure 14: Image of a Blue Shark caught by a Chinese squid jigger

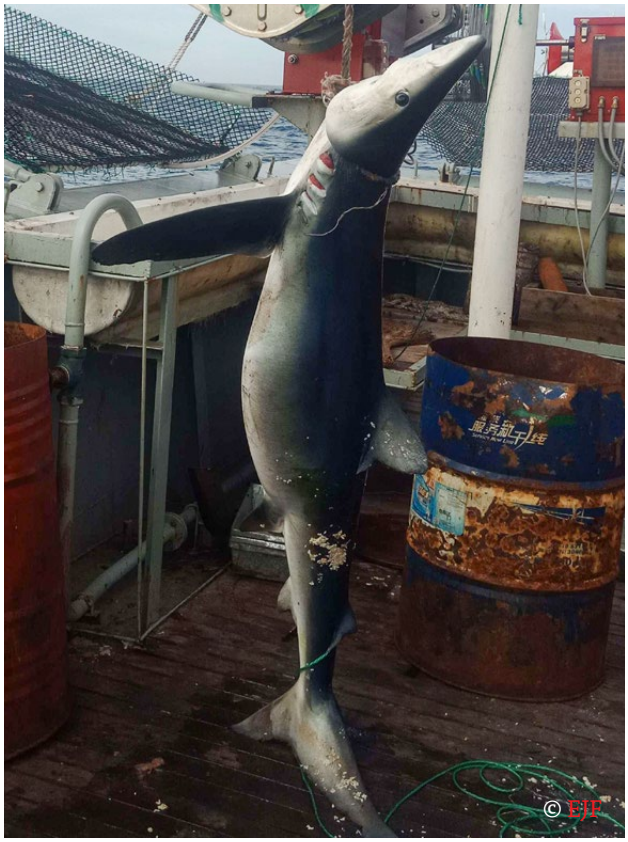


Figure 15: Image of shark fins and liver captured by a crew member on board a Chinese squid jigger

(c) Human rights abuses

Physical abuse – one of the most severe indicators signalling forced labour[177] – is pervasive on squid jiggers operating in the Southwest Atlantic. Of the 56 crew members interviewed that worked on Chinese-flagged squid jiggers, half reported either experiencing or witnessing the use of physical force to control and repress workers on board. Such abuse was reported by crew members on 56.5% of Chinese vessels, 30.8% of Taiwanese vessels and 16.0% of South Korean vessels for which interview data was collected. Senior officers from these vessels would hit, punch, kick or slap crew on the head or other parts of the body for reasons such as failing to grasp the content of the work as a newcomer, being late to work, being too sick to work, or for sorting the catch incorrectly. Alleged abuse was reported to be particularly rife on a fleet of vessels owned by Chinese fishing company Qingdao Haoyang Fisheries ('青岛浩洋远洋渔业有限公司'), a subsidiary of Chinese conglomerate Shandong Bodelong Group (**Box 7**). Abusive and exploitative working conditions often intersect with illegal fishing and harm to marine wildlife, aided by a chronic lack of transparency and oversight of the high seas squid fishery.

"He was held. I mean he was tied. He was tied to the pole once and was doused with a hose."

Crew member working on a Taiwanese squid jigger, interviewed by EJF in November 2023

"My friend was beaten with an object – a plastic shovel – and was kicked because the senior crew thought the person cut the parachute line. The person was eating in his room while others were working, he got so angry and started to beat him up. The person was not even the one who cut the parachute line."

Crew member working on a Chinese squid jigger, interviewed by EJF in October 2021

"They hit me because I made a mistake. They spoke in Chinese, I could not understand what he meant."

Crew member working on a Chinese squid jigger, interviewed by EJF in October 2021

Almost two thirds (63.0%) of Chinese squid vessels identified from crew interviews were linked to physical violence or deaths of workers on board.

"Yes, I often get kicked and my head got smacked."

Crew member working on a Chinese squid jigger, interviewed by EJF in November 2022

"The deputy of the foreman hit me. He was angry at me because I did not have a jacket used to work on the cargo hold…He was drunk."

Crew member working on a Chinese squid jigger, interviewed by EJF in June 2023

"My friend was kicked because he did not understand the job."

Crew member working on a Chinese squid jigger, interviewed by EJF in September 2021

"I was cursed and verbally abused twice in 8 months. I was once slapped on the butt. Other people experienced this a lot too. They would often slap with open hands on the head. Slapping the head really [affected] my self pride. This was often done by the foreman."

Crew member working on a South Korean squid jigger, interviewed by EJF in June 2020

On one South Korean vessel, a worker alleged that he was severely beaten by the captain, following a period of abuse and intimidation at the hands of the bosun. The captain reportedly slapped, strangled and kicked the crew member in the face, head and torso while he was on the floor, resulting in fractures to his ribs. Three other South Korean officers reportedly stood by and watched. The crew member was able to send photos of his injuries to his wife and a rescue was initiated with the assistance of the Falkland Island authorities. According to the worker, he did not receive

any compensation from the company and the Filipino manning agency has been avoiding contact. The vessel is authorised to export its products – mostly squid rings and cleaned tubes – to the EU market.[178]

> ***"I thought I would die that day…No one from his [the captain's] fellow officers stopped him. He continuously kicked me. My 5th or 6th rib was fractured. Up to now my left face is still painful. It seems something is swollen inside the nose. Sometimes, when I lay down, I cannot breathe normally."***

Crew member working on a South Korean squid jigger, interviewed by EJF in June 2022

Three vessels owned by Taiwanese squid jigging company An-Fong Fisheries Group – which has 16 active vessels operating in the study area – were also implicated in alleged physical abuse, with crew members reporting violent behaviour by the Chinese and Indonesian bosuns working on the vessels. The vessels are currently enlisted in the Fishery Improvement Program for the region's shortfin squid[179] and are authorised to export their products to the EU and UK markets.[180]

> ***"The bosun was angry. Sometimes, he hits. Back, this part. Using cable."***

Crew member working on a Taiwanese squid jigger, interviewed by EJF in August 2023

Table 4: Prevalence of worker deaths or physical violence on board squid jigging vessels operating in the Southwest Atlantic reported by crew

Type of incident	No. of Chinese vessels implicated	% Chinese squid jigging fleet at Mile 201 covered by interviews	No. of South Korean vessels implicated	% South Korean squid jigging fleet at Mile 201 covered by interviews	No. of Taiwanese vessels implicated	% Taiwanese squid jigging fleet at Mile 201 covered by interviews
Death on board or physical violence	29	63.0%	4	16.0%	11	28.2%

Source: EJF interviews with crew members working on squid jigging vessels operating in the Southwest Atlantic

Deaths of five crew members were reported in connection with four of the Chinese vessels identified in crew interviews. On one Chinese vessel, a Filipino crew member died following a lengthy illness, following which his body was kept in the freezer before being thrown overboard. According to witnesses, the crew member asked to be sent home multiple times prior to his death, but his requests were ignored. The captain of this same vessel also refused to let go of workers whose contracts had ended, resulting in six crew jumping off the vessel out of desperation when it anchored close to shore at Lima, Peru. The crew were subsequently rescued by Peruvian officials and repatriated by the Indonesian embassy. In another case, a crew member died following a prolonged illness during which he was forced to continue working and was denied meaningful medical attention: the vessel belonged to a Chinese state-owned company and was authorised to export to the EU and UK as of 2025. On another vessel, an Indonesian crew member died after developing symptoms of appendicitis, with his requests for medical repatriation and treatment refused. A week later, another crew member, a Filipino national, died on board under unexplained circumstances.

> ***"At that time [the deceased] was suffering from appendicitis and asked to go home, but the captain did not approve it. The captain only gave him…medication instead. A week after that incident, [a] Filipino crew [also] passed away. His legs were swollen.***
>
> ***The embassy did an autopsy on [the deceased] and the Filipino crew, they were asking where our office was, how did [he] pass away, etc. I felt sad, because he was my colleague for one year, we struggled together. Actually I was upset, why did the captain not allow him to go home? He could be saved."***

Crew member working on a Chinese squid jigger, interviewed by EJF in October 2020

Reports from the media and other sources corroborate these findings, revealing the sheer extent of abuse on the Southwest Atlantic squid fleet. The bodies of deceased crew members have been systematically disembarked at the port of Montevideo in Uruguay: an average of one body every other month for almost a decade, mostly from Chinese squid fishing vessels, according to an investigation by the Outlaw Ocean project.[181] In March 2021, an Indonesian deckhand was disembarked alive at Montevideo but with horrific injuries consistent with physical violence, as well as symptoms of beriberi caused by thiamine (vitamin B1) deficiency. He later died in hospital. Another deckhand who received beatings on board was disembarked in Peru as a result of illness. The vessel involved, the Zhen Fa 7, was suspected of supplying squid to major retailers in North America and Europe.[182] In May 2025, U.S. Customs and Border Protection issued an order to detain seafood harvested by the vessel, based on reasonable suspicion of the use of forced labour in its activities.[183]

"The deckhand, a slight 20-year-old Indonesian named Daniel Aritonang, had been at sea for the previous year and a half, working on a Chinese squid-fishing ship called the Zhen Fa 7. Now he was dumped dockside, barely conscious, with two black eyes, bruises along the sides of his torso, and rope marks around his neck. His feet and hands were bloated, the size of melons."

The Outlaw Ocean Project[184]

Testimony from crew members interviewed by EJF provides evidence of a high risk of forced labour in distant water squid jigging fleets operating in the Southwest Atlantic. Workers are particularly vulnerable to exploitative and abusive labour practices due to the characteristics of squid fishing operations, namely isolation of the workplace, length of time at sea and the operation of vessels across multiple maritime zones.[185] Crew members described conditions indicative of forced labour according to the International Labour Organization (ILO) definition, including debt bondage, withholding of wages, excessive working hours and abusive working and living conditions. Often multiple indicators were present on a single vessel. An overview of the findings is provided in **Table 5**.

"There was no Wi-Fi. I never communicated with my family during the fishing operation. I could communicate when the vessel docked. It took a year for the vessel to dock."

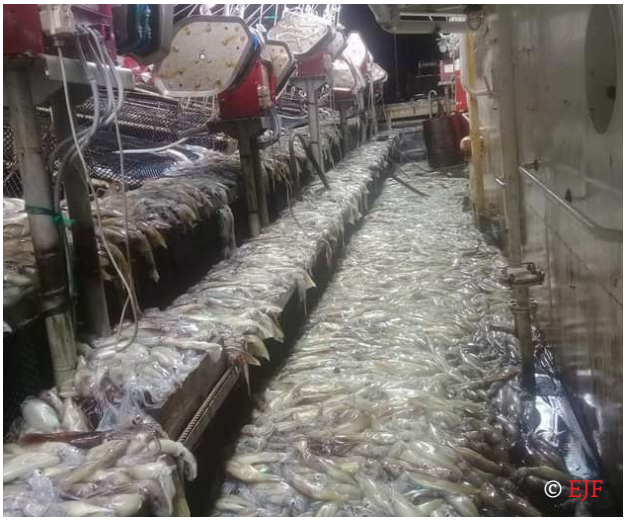
Crew member working on a Chinese squid jigger, interviewed by EJF in August 2024

"When we had a lot of catches, we had to squat. We were not allowed to sit. When we tried to sit for a while, we would be thrown by the squid... when packing the squid... Our legs were bent until the afternoon... We even slept for only two hours."

Crew member working on a Taiwanese squid jigger, interviewed by EJF in September 2024

"12 hours per day if there is no squid, when there are a lot of squid, we don't sleep for 3 days and 3 nights, depending on the squid."

Crew member working on a Chinese squid jigger, interviewed by EJF in September 2022



Argentine shortfin squid on a Chinese-flagged squid jigger operating in the Southwest Atlantic

Table 5: Conditions indicative of forced labour reported by crew members working on board the high seas squid jigging fleet operating in the Southwest Atlantic

Indicator of forced labour (ILO)	Examples	No. of crew	% of crew interviewed on Chinese vessels (n=56)	No. of crew	% of crew interviewed on South Korean vessels (n=57)	No. of crew	% of crew interviewed on Taiwanese vessels (n=56)
Abuse of vulnerability	Denial of essential medical care; repeated dismissal of crew's requests for termination of contract and repatriation; lack of health insurance	8	14.3%	1	1.8%	4	7.1%
Deception	Requirement to work on a different vessel than stated in the contract; deduction of salary	44	78.6%	13	22.8%	31	55.4%
Physical violence	Hitting, punching, slapping, kicking, or strangulation; using hand, feet or an object	28	50.0%	5	8.8%	12	21.4%
Intimidation and threats	Crew threatened with being sent home or salary/bonus deducted	27	48.2%	16	28.1%	21	37.5%
Retention of identify documents	Confiscation of passports and seaman's books of crew by senior officials	53	94.6%	50	87.7%	51	91.1%
Withholding of wages	Failure to pay worker or his family according to prior agreement; payment interval is more than two months	32	57.1%	4	7.0%	11	19.6%
Debt bondage	Payment of high recruitment fee and/or guarantee money as collateral in return for promise to finish the contract	53	94.6%	37	64.9%	47	83.9%
Abusive working and living conditions	No option but to drink filtered seawater, often containing rust from the filtration unit; Muslim workers forced to eat pork	43	76.8%	5	8.8%	19	33.9%
Excessive overtime	Regularly required to work for more than 14 hours a day	47	83.9%	47	82.5%	49	87.5%

Illex squid for consumption.

Potential supply chain linkages were identified for 40% of the vessels identified in connection with worker deaths and/or physical abuse. A rapid assessment identified 187 importers and buyers potentially implicated in supply chains for products from these vessels (**Table 6**). The majority of importers and buyers were based in the USA (44.4%) and Canada (31.6%), with multiple importers and/or buyers also based in the EU (12.8%), Australia (4.3%), the UK (1.6%), South Korea (1.6%) and South Africa (1.6%). Of the vessels implicated in physical abuse, 12 Chinese, three South Korean and nine Taiwanese vessels were authorised to export to the EU. All except one of these vessels were also authorised to export to the UK.

Table 6: Location of importers and buyers with supply chain links to Southwest Atlantic squid jigging vessels implicated in physical abuse and/or worker deaths

Location	Importers	Buyers	Total (importers and buyers)	% of total
USA	50	33	83	44.4%
Canada	15	44	59	31.6%
EU	16	8	24	12.8%
Australia	3	5	8	4.3%
UK	2	1	3	1.6%
South Korea	2	1	3	1.6%
South Africa	3		3	1.6%
Russia	1		1	0.5%
Mexico	1		1	0.5%
Belize		1	1	0.5%
Japan		1	1	0.5%
Total	**93**	**94**	**187**	**100%**

Source: TradeDataPro and The Outlaw Ocean Bait-to-Plate database

Box 7: Shandong Bodelong Group – alleged abuses and supply chain links

Six of the 26 Chinese vessels identified in connection with alleged physical abuse and one of the four vessels implicated in deaths onboard were found to be owned by a single company, Qingdao Haoyang Fisheries ('青岛浩洋远洋渔业有限公司'), a subsidiary operating in the Southwest Atlantic belonging to the Chinese conglomerate Shandong Bodelong Group.

EJF interviewed nine crew members who had worked across eight vessels owned by the company. Seven out of the nine crew members had experienced or witnessed physical violence onboard, and all of them endured being shouted at, threatened or intimidated on a daily basis.

> ***"My friend who was threatened was actually fishing next to me, so I saw it with my own eyes. I think he was tired from working and he fell asleep – he had firecrackers thrown at him to wake him up and was also threatened that he would be sent home, his salary would be deducted, and they would report his bad performance to the Indonesia agency."***

Crew member on a Chinese squid jigger, interviewed by EJF in September 2021

As detailed in **Box 3**, Shandong Bodelong Group has gradually flagged its vessels to the Argentine flag to access the abundant squid resources within the Argentine EEZ. In 2024 and 2025, six of its vessels implicated in physical abuse and/or a death onboard were included in the lists of establishments in Argentina authorised to export their products to the EU and the UK. An additional vessel implicated in physical abuse was included in the list of authorised establishments for exports to the UK from China (but not the EU).

Squid caught by Shandong Bodelong Group makes its way to the European market via processing company Rongcheng Guangrun Aquatic Foods ('荣成广润水产食品有限公司'), which produces frozen squid products for its wholesaler clients' brands. For instance, Rongcheng Guangrun produced 'Holmes' brand of frozen Argentine shortfin squid for Holmes Seafood – a well-established seafood distributor based in London and acquired by the Portugal-based Brasmar Group in 2023.[186] In recent years, Rongcheng Guangrun has sold Argentine shortfin squid products to a number of US[187] and Canadian[188] importers, as well as to clientele in Mexico[189] and Russia[190]. Most of these importers provide raw or preliminarily processed squid for local wholesalers, restaurants and catering service providers, while some US importers stock for online supermarkets.[191] Rongcheng Guangrun has also manufactured and exported dried squid snacks for the Japanese retail market.[192]

Table 7: Overview of alleged human rights abuses, illegal fishing or harm to marine wildlife reported by crew on squid jigging vessels owned by Shandong Bodelong Group in the Southwest Atlantic

	Number of squid jigging vessels operating at Mile 201	% of company's squid jigging vessels operating at Mile 201	Number of vessels implicated authorised to export to the EU[193]	Number of vessels implicated authorised to export to the UK[194]	Location of importers and buyers[195]
Physical violence	7	87.5%	6	7	***Importers:*** USA: 16 Canada: 4 EU: 2 South Korea: 1 Mexico: 1 UK: 1 Russia: 1 ***Buyers:*** USA: 10 Canada: 8 Belize: 1 Japan: 1
Deaths on board	1	12.5%	1	1	
Shark finning	6	75%	6	6	
Harpooning seals or walruses	7	87.5%	6	7	
Illegal fishing (concealing vessel name/ number)	8	87.5%	7	8	

Source: EJF interviews with crew

6. Conclusion

The findings of this investigation have highlighted the precarity of the shortfin squid fishery in the Southwest Atlantic and the need for collective action to avert the potentially imminent collapse of squid populations, as has been the fate of similar fisheries elsewhere.

The Argentine shortfin squid is a critical component of the region's marine ecosystems, the loss of which would have cascading and likely catastrophic impacts on a range of interconnected species, including species of commercial importance that feed on the squid, such as tuna and hake. Fishing pressure on the high seas has increased significantly in recent years and is largely uncontrolled: unlike for other transboundary fisheries, such as tuna, there are currently no regional management arrangements for the shortfin squid fishery, despite its considerable scale and implications for the broader ecosystem. An absence of regulatory oversight and transparency has allowed fishing activity to intensify to likely unsustainable levels, while harmful and abusive practices – both for marine wildlife and workers on board the distant water squid fleet – abound.

There is an urgent need to close this critical regulatory gap and improve governance of the shortfin squid fishery, in line with state obligations under international law. Coastal and flag states are urged to cooperate, through relevant multilateral mechanisms and/or agreements, to ensure exploitation is sustainable – both for squid populations themselves, and for the functioning of the broader ecosystem. Collective management measures must include centralised reporting requirements on catch and fishing effort, joint scientific assessments on the health of squid populations, and science-based harvest controls that respond, in real-time, to fluctuations in squid abundance. Critically, all stakeholders, including major market states and industry players, should advocate for increased transparency and accountability in the Southwest Atlantic squid fishery, with a view to eliminating illegal and harmful fishing practices, and the widespread incidence of forced labour in the fleet.

7. Recommendations

Managed properly, the Argentine shortfin squid fishery can thrive well into the future, sustaining the broader ecosystem and providing crucial economic benefits for communities, as well as local and distant economies. To strengthen fisheries governance, and help end human rights abuses at sea, EJF recommends that all governments fully support, adopt and implement the provisions of the Global Charter for Transparency[196] and advance each of its principles in a time-bound, proven manner.

Based on the findings of this report EJF further urges stakeholders to implement the following actions, as a matter of priority:

To coastal states and nations with fishing vessels operating on the high seas:

1. Improve transparency and accountability of squid fishing activities, including through endorsement and implementation of the Global Charter for Fisheries Transparency, with specific attention given to eliminating at-sea trans-shipment of squid unless pre-authorised and closely monitored by human observers and/or remote electronic monitoring (REM), and the publication of data on fishing authorisations, trans-shipments, sanctions, catch and fishing effort, and the results of scientific assessments.

2. Initiate immediate negotiations to establish, in the near-term, appropriate multilateral governance structures for the effective regional conservation and management of marine resources and, more specifically, straddling populations of Argentine shortfin squid in the Southwest Atlantic to ensure sustainability of the resource as required by the UN Convention on the Law of the Sea and UN Fish Stocks Agreement.

3. Implement robust and collective approaches to data collection, assessments of the health of squid populations and establishment of science-based harvest controls consistent with an adaptive, ecosystem-based approach to fisheries management and the precautionary principle, in line with international law.

4. Strengthen capacity and partnerships for at-sea monitoring and inspections, supported by the timely exchange of information and intelligence and improved cooperation between agencies responsible for fisheries and labour issues.

5. Ratify the ILO Work in Fishing Convention C188, other fundamental ILO conventions, and the Cape Town Agreement on fishing vessel safety to combat human rights abuses and forced labour in the squid fishing industry.

6. Require details of beneficial ownership, including records of the destination of profits from fishing activities, and compliance history upon registering a vessel to the national flag, and scrutinise vessels with a history of flag-hopping to combat abusive reflagging.

7. Ensure that government support in the form of subsidies, loans and other funds are not available to companies with a history of IUU fishing infringements and/or documented labour abuses, in the context of eliminating harmful subsidies.

To markets for squid products originating from the Southwest Atlantic:

1. Adopt or reinforce existing import control mechanisms, ensuring they include squid species, such as Argentine shortfin squid, that are at high risk of being associated with forced labour and IUU fishing practices. This should include expanding the coverage of the U.S. Seafood Import Monitoring Program and the South Korean Catch Documentation Scheme which currently only apply to a limited number of species.

2. Enhance scrutiny of squid imports originating from poorly regulated and unregulated high seas fisheries, undertaking additional, detailed verifications of consignments as well as audits, and investigating suspected cases of illegal fishing and forced labour. In the EU, the European Commission and Member States should exploit all possibilities offered by the Mutual Assistance System under the EU IUU Regulation and explore the legal feasibility of using the Community Alert System under the same regulation to more effectively target verifications and inspections towards establishing compliance of squid products originating from specific vessels or flag states with national or international laws/CMMs.

3. Prohibit the import of squid products found to be associated with abuses, including through the rejection of consignments under the EU IUU Regulation catch certification scheme, and application of U.S. Customs and Border Protection Withhold Release Orders on squid products obtained through the use of forced labour.

4. Increase cooperation through relevant bilateral mechanisms to leverage market power and demand key fishing nations of Argentine shortfin squid to undertake necessary governance reforms.

To port states receiving vessels engaged in fishing for squid on the high seas and reefers involved in at-sea trans-shipments with these vessels:

1. Ratify and effectively implement the FAO Agreement on Port State Measures to prevent, deter and eliminate IUU fishing.

2. Increase scrutiny of companies or vessels associated with IUU fishing activities and/or human rights abuses, carrying out vessel inspections on the basis of robust risk management and strengthening interagency cooperation between competent authorities for fisheries and labour.

3. Cooperate with key port, flag and coastal states, other nations with capacity at sea, and non-governmental and industry stakeholders to facilitate and target inspections with respect to high risk vessels.

4. Leverage the potential of regional and international information-sharing platforms, including the Global Information Exchange System (GIES) established under the PSMA, to conduct due diligence checks and issue prompt alerts regarding potential instances of non-compliance.

5. Publish records of port visits to assist in tracking the movement of vessels, the destination of catches and supply chains.

To all states:

1. Formally accept the World Trade Organization (WTO) Agreement on Fisheries Subsidies, which prohibits the granting and maintenance of subsidies in the case of IUU fishing and for fishing activities in the unregulated high seas, and promote its acceptance to allow entry into force.

2. Sign and ratify the Biodiversity Beyond National Jurisdiction (BBNJ) Agreement (**Box 8**) as soon as possible and push for its swift implementation once in force, including the rapid designation of high seas Marine Protected Areas (MPAs). Environmental impact assessments (EIAs) should also be carried out for squid fisheries in accordance with the Agreement.

3. Mobilise efforts towards the target of protecting 30% of the ocean by 2030 set out in the Kunming-Montreal Global Biodiversity Framework (KM-GBF), including for high seas areas under the BBNJ Agreement once in force, ensuring that the designation of MPAs gives adequate consideration to the key ecosystem functions of many squid species, including as prey for marine mammals and seabirds.

Box 8: The High Seas Treaty and unregulated squid fisheries

The Biodiversity Beyond National Jurisdiction (BBNJ) Agreement, also known as the High Seas Treaty, contains key provisions that can help address the impacts of squid fisheries on marine biodiversity in areas beyond national jurisdiction (ABNJ). It sets out relevant procedures and mechanisms to establish an ecological representative network of high seas MPAs – which is critical to achieving Target 3 of the KM-GBF on protecting 30% of the ocean by 2030 – and obligations to conduct EIAs for activities in ABNJ, or that may affect ABNJ, such as fishing. The Treaty also stresses the importance of international cooperation, requiring states to cooperate in the conservation and sustainable use of biodiversity, including through marine scientific research.

To importers and retailers of squid products originating from the Southwest Atlantic:

1. Immediately endorse the Global Charter for Fisheries Transparency, and call publicly for its adoption and implementation by governments, including states with important squid fishing fleets. In line with the Charter, importers and retailers should work towards ensuring full supply chain traceability and transparency.

2. Carry out effective due diligence to identify, prevent, and address risks of IUU fishing and associated abuses in squid supply chains. This due diligence should be aligned with relevant international frameworks such as the UN Guiding Principles on Business and Human Rights, as well as national regulations and established voluntary guidance.[197]

3. Advocate for regional cooperation and management of the Southwest Atlantic shortfin squid fishery, leveraging market influence through existing platforms such as the Global Squid Supply Chain Roundtable.

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