MarinTrust Standard V2

Whole fish Fishery Assessment

Sardina Austral / Falkland sprat (*Sprattus fueguensis*)
FAO 87 Div. 87.3.3 Region X (Los Lagos)

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Table 1 Application details and summary of the assessment outcome

Application details and summary of the assessment outcome			
Name: Fiordo Austral, Pesquera La Portada S.A			
Address:			
Country: Chile		**Zip:**	
Tel. No.		**Fax. No.**	
Email address:		**Applicant Code**	
Key Contact:		**Title:**	
Certification Body Details			
Name of Certification Body:		Global Trust Certification	
Assessor Name	**CB Peer Reviewer**	**Assessment Days**	**Initial/Surveillance/ Re-approval**
Jose Peiro Crespo	Vito Romito	4	Initial
Assessment Period	To May 2022		
Scope Details			
Management Authority (Country/State)		Chilean Subsecretariat de Pesca (SUBPESCA).	
Main Species		Sardina Austral /Falkland sprat (*Sprattus fueguensis*)	
Fishery Location		Area FAO 87.3.3 Chile Region X (Los lagos)	
Gear Type(s)		Purse seine	
Outcome of Assessment			
Overall Outcome		Pass	
Clauses Failed		None	
CB Peer Review Evaluation		Agree with recommendation	
Fishery Assessment Peer Review Group Evaluation		Approve	

Recommendation	**APPROVE**

Table 2. Assessment Determination

Assessment Determination
This report assesses the purse seine fishery of Sardina Austral /Falkland sprat (*Sprattus fueguensis*) in Chilean waters. The species is a small pelagic clupeid with similar spatial distribution in both South Pacific and Atlantic Oceans. In Chile, this species occurs from far south in the fjords and channels to approximately 42ºS. Sardina Austral /Falkland sprat is currently managed in Region X as a component of the multispecies small pelagic fishery. The species represents more than 95% of the catch in that fishery, with relatively low catches of other species, such as anchovy (*Engraulis ringens*) and Araucanian herring (*Strangomera bentincki*), both representing less than 5% of the catch (assessed under category C). Chilean fisheries are governed through three agencies: the Undersecretary of Fisheries (Subsecretaria de Pesca) – SUBPESCA, which creates the management policy and the regulatory framework; the National Fisheries Service (Servicio Nacional de Pesca) – SERNAPESCA, which implements and enforces regulations; and the Fisheries Development Institute (Instituto de Fomento Pesquero) - IFOP), the research institution that assesses fish stocks and provides scientific advice to the government. A General Law on Fisheries and Aquaculture (GLFA) was first promulgated in Chile in 1991 to establish the legal framework for fisheries management in the country {Law 18,892 - 1991}; and updated in 2019 {Law 21.287-2019}. This is a very complete law which main objective is the conservation and sustainable use of fishery resources in the country through the application of precautionary and ecosystem approaches. The National Fisheries and Aquaculture Service (SERNAPESCA) deals with monitoring, surveillance, and control in the country (VMS, landing & quota control, enforcement and statistics). Moreover, the Chilean Navy monitors Chile's Exclusive Economic Zone (EEZ) to protect natural resources and ecosystem unauthorized activities. The management framework and the surveillance, control and enforcement system meet minimum requirements set by the MARINTRUST Standard, **clauses M1-M2 are passed**. The assessment of the Sardina Austral /Falkland sprat stock considers all fishery removals and the biological characteristics of the target species. Commercial catches are collected by the authorities. In addition to catch data, information collected at landing sites and also directly from fishing vessels includes location and time of catch, length, weight, sex, and age data, and size frequency distribution data and biomass estimates from hydroacoustic surveys. The LGPA includes a commitment to develop a management plan for any fishery with restricted access. However, the development of a management plan for the small pelagic fishery in Region X is still in development. The IFOP assesses the stock in reference to a biological reference framework (target and limit reference points) established by the authorities. In 2021, the Scientific and Technical Committee for Small Pelagic Fisheries (CCT-PP) considered that the Falkland sprat stock in the Los Lagos Region (X) was in a state of full exploitation (SSB/SSB_{MSY}=1.125 and F/F_{MSY}=1.079) with a high probability of overfishing (p-0.47). There is a mechanism in place by which total fishing mortality of this species is restricted. In recognition of the state of full exploitation of the fishery, registration in the Artisanal Fishing Register and entry of new applications is prohibited until 19 July 2025. Since 2008, the catch in this area has been regulated through an annual TAC set by the authorities based on the IFOP and the CCT-PP recommendations. In general terms, catches are below the set TAC, except for 4 years (2008, 2012, 2014, and 2019). **Clauses A1-A4 are passed for Falkland sprat.** Category C species (managed species representing <5% of the catch) include anchovy and Araucanian herring. For both species, fishery-dependent data is collected through port sampling of landings (SERNAPESCA

Inspectors) and observer reports (IFOP). Mandatory logbooks are required for all the vessels. Furthermore, there is a no-discard policy in place in the country.

The CCT-PP met in October 2021 to assess the state of the anchovy stock (V-X) and to determine a Biologically Acceptable Catch (TAC) for the fishery in 2022. The Committee established that the anchovy stock in the south-central zone was in a state of full exploitation (SSB/SSB_{MSY} = 1.37 and F/F_{MSY} =0.842), with a low probability of overfishing (p=0.09) for the year 2020/21. The spawning biomass was 37% above SSB_{MSY} and the fishing mortality was a 16% below F_{MSY}.

In the case of Araucanian herring, based on the stock assessment provided by IFOP, the Committee established that after twelve years the stock of Araucanian herring in the central southern zone moved from fully exploited to overfished status (SSB/SSB_{MSY} = 0.601 and F/F_{MSY} = 1.108), with a high probability of overfishing (p=0.51) by 2020/21. Spawning biomass is below the historical average of the series, 40% below SSBMSY and fishing mortality (F=0.33) slightly above F_{MSY}.

Both species are therefore considered, in the most recent stock assessment, to have a biomass above the limit reference point and pass **clause C1.**

IFOP's observer program record interactions with protected species. These interactions are also self-reported by the fishery (logbooks). **Sub-clauses F1.1 is met.**

The fishery interacts with marine mammals and seabirds. Informe técnico (R.Pesc) N 187/2021 indicates that between February 2017 and December 2019, 187 sets were monitored by fisheries observers in the fishery. In the observed sets, 518 South American sea lions (2 dead) and 15 coastal birds (Kelp gull and brown-headed gull, both species listed as LC) (all but 2 dead) were caught (Vega et al., 2020). However, none of these species is considered ETP by the MT standard. Therefore, **sub-clause F1.2 is met.**

A discard and bycatch reduction plan has been recently approved for the fishery {R.Ex.2490/2021}. It includes a number of measures, such as the prohibition of discarding any species, continue monitoring bycatch, introduce good practices to avoid the catch of seabirds and marine mammals, and conducting awareness activities to reduce bycatch, among others. Compliance with discard reduction plans will be monitored by electronic monitoring systems (EMS) on board all vessels of the industrial fleet, while artisanal boats larger than 15m in length will be required to carry EMS by 2022. **Sub-clause F.1.3 is met.**

In the case of the habitat impacts of the fishery, purse seines are designed to catch shoals of pelagic species and they use to operate in the water column without contacting the seabed. Therefore, physical impacts of pelagic fisheries on habitats are considered insignificant or limited. **F2 clauses are met.**

Falkland sprat, anchovy and Araucanian herring are coastal pelagic fish, which form large schools. Small pelagic species play a key role in the general health of marine ecosystems, as they feed from plankton and are a prey for other fish, birds, reptiles and marine mammals. The on-board observer program currently in place collect data on ETP and habitat interactions, which is used to assess the impact of the fishery on key elements of the ecosystem. Reference points set during the most recent assessment of the target species where set taking into consideration the role of these species in the ecosystem, and a precautionary biomass target of 55% of the virgin spawning stock biomass was used for assessing stock status. The target species is above the MSY level. Therefore, it is considered that the broader ecosystem within which the fishery occurs is considered during the management decision-making process, there is no substantial evidence that the fishery has a significant negative impact on the marine ecosystem and the key role of the target species is considered by the authorities when recommending the total permissible fishery removals. **F3 clauses are met.**

Sardina Austral /Falkland sprat **is recommended** by the assessor for the production of fishmeal and fish oil under the IFFO-RS v 2.0 whole fish standard.

Fishery Assessment Peer Review Comments
The peer reviewer agrees with the findings of the assessment. The species have been correctly assessed as Category A for Sardina Austral and as Category C for Anchovy and Araucanian herring. The General Law on Fisheries and Aquaculture (GLFA) updated in 2019 {Law 21.287-2019} has as main objective the conservation and sustainable use of fishery resources in the country through the application of precautionary and ecosystem approaches. Chilean fisheries are governed through three agencies: SUBPESCA, which creates the management policy and the regulatory framework; the SERNAPESCA, which implements and enforces regulations; and the IFOP, the research institution that assesses fish stocks and provides scientific advice to the government. SERNAPESCA deals with monitoring, surveillance, and control in the country (VMS, landing & quota control, enforcement and statistics). There is a clear and effective management system in place and the enforcement outputs indicate compliance of the fleet with existing management regulations. The assessment of the Sardina Austral /Falkland sprat stock considers all fishery removals and the biological characteristics of the target species. The IFOP assesses the stock in reference to a biological reference framework (target and limit reference points) established by the authorities. In 2021, the Scientific and Technical Committee for Small Pelagic Fisheries (CCT-PP) considered that the Falkland sprat stock in the Los Lagos Region (X), was in a state of full exploitation (SSB/SSBMSY=1.125 and F/ FMSY=1.079) with a high probability of overfishing (p-0.47). The anchovy stock in the south-central zone was assessed in 2022 in a state of full exploitation (SSB/SSB_{MSY} = 1.37 and F/F_{MSY} =0.842), with a low probability of overfishing (p=0.09) for the year 2020/21. The spawning biomass was 37% above SSB_{MSY} and the fishing mortality was a 16% below F_{MSY}. In the case of Araucanian herring, based on the stock assessment provided by IFOP, the Committee established that after twelve years the stock of Araucanian herring in the central southern zone moved from fully exploited to overfished status (SSB/SSB_{MSY} = 0.601 and F/F_{MSY} = 1.108), with a high probability of overfishing (p=0.51) by 2020/21. Spawning biomass is below the historical average of the series, 40% below SSBMSY and fishing mortality (F=0.33) slightly above F_{MSY}. As per the most recent stock assessments and related management measures, all three species have a biomass above the limit reference point and harvest control rules and methods to control harvest, and pass the MT standard requirements. The assessed fishery seems to interact with a number of marine mammals and seabirds, none considered ETP species based on MarinTrust guidance. Informe técnico (R.Pesc) N 187/2021 used as a base for developing the bycatch and discard plan for the fishery indicates that between February 2017 and December 2019, 187 sets were monitored by fisheries observers in the fishery. In the observed sets, 518 South American sea lions *Otaria flavescens* were caught (2 dead) as well as 15 coastal birds (Kelp gull *Larus dominicanus* (7 caught - all dead) and brown-hooded gull *Larus maculipennis* (6 dead of 8 caught), both species listed as Least Concern on the IUCN Red List) (Vega et al., 2020).

None of these species is classified as ETP species in this assessment as only the IUCN categories (EN and CR) and CITES listed species are considered as ETP species by the MT standard. The fishery has an impact on marine mammals and seabirds; marine mammals are mostly released alive, and while the catch of certain seabirds may be somewhat of a concern these species are not considered ETP species by the MT standard. Habitat effect of purse seine fisheries are generally considered negligible due to limited to no contact of the fishing gear with the seabed, hence the habitat effects are considered negligible. The foodweb effects of the fishery are also not considered significant. Due to the low trophic level of the species under consideration there can be an effect on other species which prey on the species under assessment. To account for the predation of these species' models have been adapted and in recent years ecosystem consideration has been considered to set up total fishery removals to ensure no impact on key roles of these species in the ecosystems. All in all, the Peer Reviewer agrees with the Assessor that the fishery under assessment here shall be APPROVED for the production of fishmeal and fish oil under the IFFO-RS v 2.0 whole fish standard.
Notes for On-site Auditor
No notes for auditor.

Table 3 General Results

General Clause	Outcome (Pass/Fail)
M1 - Management Framework	Pass
M2 - Surveillance, Control and Enforcement	Pass
F1 - Impacts on ETP Species	Pass
F2 - Impacts on Habitats	Pass
F3 - Ecosystem Impacts	Pass

Table 4 Species- Specific Results

List all Category A and B species. List approximate total percentage (%) of landings which are Category C and D species; these do not need to be individually named here

Category	Species	% landings	Outcome (Pass/Fail)	
Category A	Sardina Austral /Falkland sprat (*Sprattus fueguensis*)	90%	A1	Pass
			A2	Pass
			A3	Pass

			A4	Pass
Category B	NA			
Category C	Anchovy (*Engraulis ringens*)	<5%	Pass	
Category C	Araucanian herring (*Strangomera bentincki*)	<5%	Pass	
Category D	NA			

Table 5 Species Categorisation Table

Common name	Latin name	Stock	IUCN Redlist Category[1]	% of landings	Management	Category
Sardina Austral /Falkland sprat	*Sprattus fuegensis*	Region X (Los Lagos)	Least concern	90%	SUBESCA	A
(Peruvian) anchovy	*Engraulis ringens*	Region V - X (Valparaiso - Los Lagos)	Least concern	<5%	SUBPESCA	C
Araucanian herring	*Strangomera bentincki*	Region V - X (Valparaiso - Los Lagos)	Least concern	<5%	SUBPESCA	C

Species categorisation rationale

The species categorisation table has been based on the catch profile shown in previous MT assessments for the same fishery. No other catch profiles have been found. Sardina Austral (*Sprattus fuegensis*) represents 90% of the catch with other two species: anchovy (*Engraulis ringens*) and Araucanian herring (*Strangomera bentincki*) completing the catch, both of them with less than 5% of the total landings.

References

Links to the IUCN red list are provided in the table above.

SUBPESCA 2022. Estado de situacion de las principales pesquerias Chilenas ano 2021. 108 pp.

[1] https://www.iucnredlist.org/

MANAGEMENT

The two clauses in this section (M1, M2) relate to the general management regime applied to the fishery under assessment. The clauses should be completed by providing sufficient evidence to justify awarding each of the requirements a pass or fail rating. A fishery must meet all the minimum requirements in every clause before it can be recommended for approval.

M1	Management Framework – Minimum Requirements		
	M1.1	There is an organisation responsible for managing the fishery.	Yes
	M1.2	There is an organisation responsible for collecting data and assessing the fishery.	Yes
	M1.3	Fishery management organisations are publicly committed to sustainability.	Yes
	M1.4	Fishery management organisations are legally empowered to take management actions.	Yes
	M1.5	There is a consultation process through which fishery stakeholders are engaged in decision-making.	Yes
	M1.6	The decision-making process is transparent, with processes and results publicly available.	Yes
		Clause outcome:	**Pass**

M1.1 There is an organisation responsible for managing the fishery.

In Chile the Ministry of Economy, Development and Tourism (MINECON) is in charge of promoting the development of the fisheries sector, along with the protection, conservation, and full use of resources and the marine environment. Under the MINECOM, three main organisations govern the fisheries sector in the country, with several other institutions providing additional research and enforcement:

- The Subsecretaria de Pesca (Undersecretariat of Fisheries, SUBPESCA or SSP); is tasked with the objectives of regulating and managing fishing and aquaculture activity, through policies, regulations and administration measures, under a precautionary and ecosystem approach that promotes the conservation and sustainability of hydrobiological resources for the productive development of the sector.
- The Servicio Nacional de Pesca (National Fisheries Service, SERNAPESCA) is responsible for executing fisheries policy through enforcement, and monitoring operators' activities, catches and quotas.
- The Instituto de Fomento Pesquero (Fisheries Development Institute, IFOP) is the research arm of the institutional framework and the primary source of scientific advice to SUBPESCA.

The management Committees are composed of SUBPESCA and IFOP members, artisanal and industrial fishermen and the processing industry. Scientific and Technical Committee for Small Pelagic fisheries (Comité Científico Técnico de Pesquerías de Pequeños Pelágicos, CCT-PP), analyse IFOP's updates on stock status and catch projections and make official recommendations to the Chilean authority on TAC's. The report of the last meeting is posted on SUBPESCA website.[2]

The National Fisheries Council; created by the Fisheries and aquaculture Law LGPA No. 18.892, ensures the participation of all stakeholders in the fisheries and aquaculture sector. The Falkland sprat stock is managed as a single stock from Los Lagos Region in the Central/South (X). Regional Government Areas in Chile corresponding to fishery management units have been defined (Figure 1).

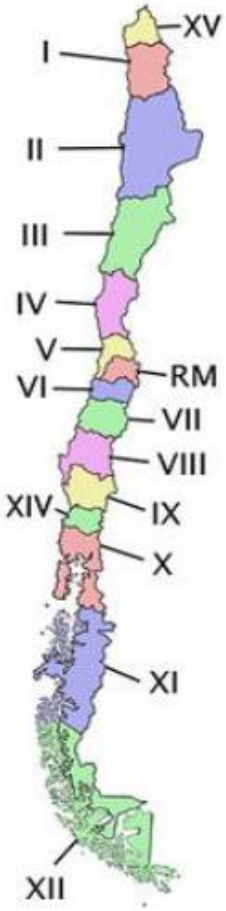


Figure 1: Regional Government Areas in Chile corresponding to fishery management units. Adapted from https://pepeschile.com/es/regiones-chilenas-de-que-son-todos-estos-numeros/

There is an organisation responsible for managing the fishery. **Sub-clause M1.1 is met.**

[2] https://www.subpesca.cl/portal/616/w3-propertyvalue-51142.html#collapse04
[3] https://www.sprfmo.int/about/

M1.2 There is an organisation responsible for collecting data and assessing the fishery.

The Instituto de Fomento Pesquero (IFOP) is the organization responsible for sampling stocks and carrying out annual acoustic surveys (IFOP 2022) . IFOP is a non-profit organisation created in 1964 under a joint agreement between the Chilean government, the FAO, and the UN Development Program (UNDP). IFOP's public role is to support sustainable development of Chile's fishing sector.

The Instituto de Investigación Pesquera (INPESCA) is a privately funded organisation which undertakes scientific studies in many areas, including fisheries research. INPESCA is a private institution that since its creation in 1989, has carried out its activities as an intermediary body between the regional fishing industry and state and university institutions that are dedicated to research in fishery resources (INPESCA 2022) . INPESCA currently has a team of 60 staff which includes researchers, technicians and administrators.

Finally, the Scientific and Technical Committee for Small Pelagic fisheries (Comité Científico Técnico de Pesquerías de Pequeños Pelágicos, CCT-PP) is made up of 12 institutional members (IFOP and SUBPESCA), 2 non-voting members and 7 members nominated through public contest (including three current vacancies) (SUBPESCA 2022b). The CCT-PP analyse updates on stock status and catch projections provided by IFOP Scientists and make official recommendations on harvest controls to the Competent Authorities in SUBPESCA. These recommendations are termed Biologically Acceptable Catches (BAC, CBA in Spanish). BACs are set up annually following scientist recommendations and data from historical series and biannual surveys. BACs are divided into three categories: research, industrial and artisanal. The number of commercial landings permitted are subject to change depending on survey results.

There is an organisation responsible for collecting data and assessing the fishery. **Sub-clause M1.2 is met.**

M1.3 Fishery management organisations are publicly committed to sustainability.

A General Law on Fisheries and Aquaculture (GLFA) was first promulgated in Chile in 1991 to establish the legal framework for fisheries management in the country {Law 18,892 - 1991}; and updated in 2013 {Law 20,657 - 2013} and 2019 {Law 21.287-2019}. This is a very complete law which main objective is the conservation and sustainable use of fishery resources in the country through the application of precautionary and ecosystem approaches. The fisheries requires that fishery policies in the country account for a number of issues:

- long-term objectives for the conservation and management of fisheries and protection of the ecosystems;
- the use and conservation of the marine resources based on the concept of maximum sustainable yield (MSY);
- the consideration of the impacts of fishing on associated or dependent species and the minimization of discards through the development of discard management plans;
- the management of fisheries resources in a transparent and inclusive manner.

Fishery management organisations are publicly committed to sustainability. **Sub-clause M1.3 is met.**

M1.4 Fishery management organisations are legally empowered to take management actions.

Legal instruments:

As indicated above, the primary legal instrument for fisheries management in Chile has been la Ley General de Pesca y Acuicultura (LGPA) No. 20.657. It was adopted in 2013 and it is a modification of previous fisheries legislation, and includes:

- Commitments convened to manage the sustainable use and conservation of marine resources.
- Commitments convened to make key decisions on conservation measures based on scientific information above all other considerations. Recommendations of CCT-PP's have been made mandatory for all stakeholders.

The LGPA also includes commitments to develop management plans for any fishery with restricted access, and to review and update these plans every five years. The last Falkland sprat "IFOP" assessment report was published in 2018. Article 5 of the LGPA states that SUBPESCA should determine Biological Reference Points (BRPs) for all targeted stocks. Biologically Acceptable Catches (BACs) and resource recovery plans are implemented under Article 9.

The LGPA does not legislate for catch restrictions when stocks are below limit biomass. Fisheries are not closed below this limit for social and economic reasons, and in order to monitor the recovery of the resource according to recovery plans. Recovery plans imply reductions in fishing mortality at levels below or equal to FMSY according to the expected time of recovery established by Management Committees.

Fishery management organisations are legally empowered to make management actions. **Sub-clause M1.4 is met.**

M1.5 There is a consultation process through which fishery stakeholders are engaged in decision-making.

Management Plans set lines of action to address biological, economic, social and ecological matters. There is consultation and evaluation of a series of harvest control rules and definitions of robust rules to allow viable mixed fisheries. Minutes of these and other CCT-PP meetings are published on relevant websites. The decision-making process of the small pelagics fishery (including Falkland sprat fishery) for the adoption of management measures and strategies to achieve the specific objectives of the fishery, are expressly defined in the Chilean fishing law. **Sub-clause M1.5 is met.**

M1.6 The decision-making process is transparent, with processes and results publicly available.

Stock-recruitment and spawning periods are closely monitored by IFOP, per region. Results of acoustic surveys are published in monthly bulletins (Informes) which also contain details of closed seasons by area and general information on stock status.

Meetings and decisions of the management committees are also available online. In this case the acts for the Austral sardine management committee can be found on: https://www.subpesca.cl/portal/616/w3-propertyvalue-56295.html#collapse03

The status of the managed stocks is published annually by SUBPESCA in a memorandum called "Estado de situación de las principales pesquerías en Chile ". In this report information from the Committee for small fisheries and IFOP are taken into account by SUBPESCA to establish management plans.

Regulations on quota swaps between different fleet sectors and quota distribution through fishing regions are also made available online.

Therefore, the system is transparent; all information is available in official websites. **Sub-clause M1.6 is met.**

References

Direct links have been included in the text (*references in Spanish*)

Chile Law Fisheries, Aquaculture No 20.657. Available at: http://www.subpesca.cl/normativa/605/articles-764_documento.pdf

IFOP 2022. Strategic plan. Available at: https://www.ifop.cl/en/quienes-somos/plan-estrategico/

Instituto de Investigación Pesquera (INPESCA) 2022. Available at: https://www.geofisica.udec.cl/mundo-laboral/instituto-de-investigacion-pesquera-inpesca/

SUBPESCA 2022. Comité Científico de Pesquerías de Pequeños Pelágicos. Available at: https://www.subpesca.cl/portal/616/w3-propertyvalue-51142.html#collapse00

SUBPESCA 2022b. Gobierno transparente. http://anfitrion.cl/GobiernoTransparente/pesca/res_ne.html

Links	
MARINTRUST Standard clause	
FAO CCRF	
GSSI	

M2	**Surveillance, Control and Enforcement - Minimum Requirements**		
	M2.1	There is an organisation responsible for monitoring compliance with fishery laws and regulations.	Yes
	M2.2	There is a framework of sanctions which are applied when laws and regulations are discovered to have been broken.	Yes

	M2.3	There is no substantial evidence of widespread non-compliance in the fishery, and no substantial evidence of IUU fishing.	Yes
	M2.4	Compliance with laws and regulations is actively monitored, through a regime which may include at-sea and portside inspections, observer programmes, and VMS.	Yes
		Clause outcome:	**Pass**

M2.1 There is an organisation responsible for monitoring compliance with fishery laws and regulations.

Compliance both within and outside Chile's EEZ is monitored by a number of different entities:

The National Fisheries and Aquaculture Service (SERNAPESCA) deals with monitoring, surveillance, and control in the country (VMS, landing & quota control, enforcement and statistics). Moreover, the Chilean Navy monitors Chile's Exclusive Economic Zone (EEZ) to protect natural resources and ecosystem unauthorized activities.

The use of video cameras has been implemented since January 2020 for industrial vessels over 15 m long (but due to the COVID-19 pandemic, it was not implemented in artisanal vessels (Res, Ex. N° 1208-2020). The recording of the images is inspected by SERNAPESCA and every haul has to be recorded. There have been several regulations implemented in the last year to define the procedures for the use of these devices. Resolution No. 3,227 of 2019: according to the type of fishing, the disks used in these devices need to have the capacity to store the images for 1 month of fishing trips. SERNAPESCA collects the hardware when the storage capacity is 75% or once a month.

There is an organisation responsible for monitoring compliance with fishery laws and regulations. **Sub-clause M2.1 is met.**

M2.2 There is a framework of sanctions which are applied when laws and regulations are discovered to have been broken.

Infractions, penalties, and procedures are set out under "Title IX" in the GLFA {Law 20,657 2013}. The measures which can be applied include administrative and judicial sanctions, such as: fines; suspension or removal of the captains' licence, removal of quota; seizure of gear and means of transporting gear, the confiscation of catch and fines in multiples above the value of the confiscated fish, closure of fishing and processing facilities, etc.

There is a framework of sanctions which are applied when laws and regulations are broken. **Sub-clause M2.2 is met.**

M2.3 There is no substantial evidence of widespread non-compliance in the fishery, and no substantial evidence of IUU fishing.

A system of fishing quotas is applied to regulate the fishery in Chile. Recommendations, based on the annual scientific advice are provided by the CCT-PP to SUBPESCA. TACs are split between commercial (both industrial and artisanal sectors) and research purposes.

The fisheries and aquaculture inspection report published by SERNAPESCA for the year 2020 {IFPA 2021} indicates that within the framework of the SERNAPESCA 2020 National Inspection Plan, inspection activities were focused on controlling the main behaviours affecting to the sustainable use of the marine resources in the country, and two special inspection programs were implemented: "Landing Control (in fishing areas and landing points)" and "Fighting IUU fishing in the Value Chain"{IFPA 2021}. Despite the COVID-19 situation, several inspection goals were reached in that year: the monitoring of the fleet through the VMS was decentralized, which allowed to significantly increase of coverage and capacity to respond to illegal activities; an electronic monitoring (EM) system to control bycatch and discards was implemented in 100% of the industrial fishing fleet; and 100% of the landings were certified by the authorities {IFPA 2021}.

During 2020, SERNAPESCA conducted 45,543 inspections in the fisheries sector, 54% of them in the Bio Bio area, including inspections of fishing vessels (VMS), landing points fish processing plants. Of these, 57% of the inspection undertaken were related to fishing quotes, whereas 21% and 12% of the inspections were related to fishing access and fishing closures respectively {IFPA 2021}. The most frequently detected non-compliances were associated with capturing closed resources

(22% of non-compliances), followed by given false information to the authorities (15.4%), and possessing or transporting unauthorized resources (13.2% and 11% respectively) {IFPA 2021}.

Although some issues have been reported in the fishery, such as underreporting and misreporting of species, correction factors are applied in both industrial and artisanal fisheries to account for under-reporting, it is thought that there is no substantial evidence of widespread non-compliance in the fishery, and no substantial evidence of IUU fishing. **Sub-clause M2.3 is met.**

M2.4 Compliance with laws and regulations is actively monitored, through a regime which may include at-sea and portside inspections, observer programmes, and VMS.

In Chile all catches are reported in logbooks and in catch and effort landing returns. On-board observers contribute to monitoring, cross checking and verification of catches and landings with vessels logbooks. Industrial vessels operate under mandatory VMS monitoring. SERNAPESCA Inspectors carry out audits of capture fisheries during landings (including accurate weigh outs); implementing surveillance and control of compliance in ports. Within their EEZ the Chilean Navy monitor an area covering approximately 4,542,990. Km^2.

Further, from January 2020 video cameras devices were implemented, and their use is mandatory for all the industrial vessels.

Resolution No. 3,227 of 2019 states that according to the type of fishing, the disks used in this device need to have the capacity to store the images for 1 month of fishing trips. SERNAPESCA collects the hardware when the storage capacity is 75% or once a month.

Compliance with laws and regulations is actively monitored, through a regime which may include at-sea and portside inspections, observer programmes, and VMS. **Sub-clause M2.4 is met**.

References

Chile Law Fisheries, Aquaculture No 20.657: http://www.subpesca.cl/normativa/605/articles-764_documento.pdf

Chile Law on Fisheries and Aquaculture No 20.285: http://www.subpesca.cl/normativa

Chilean Navy http://www.armada.cl/armada/site/edic/base/port/nuestra_armada.html

Res, Ex. N° 1208-2020 Dispone Suspensión de la Obligación del uso de Cámaras en el Sector Artesanal por Causa de Fuerza Mayor Derivada por la Pandemia del Coronavirus Covid-19. (Publicado en Página Web 06-05-2020) (F.D.O. 22-05-2020)

SUBPESCA 2021. Cuenta Pública 2020. Available at: http://www.sernapesca.cl/sites/default/files/cuenta_publica_2020_final.pdf

Links	
MARINTRUST Standard clause	
FAO CCRF	
GSSI	

CATEGORY A SPECIES

The four clauses in this section apply to Category A species. Clauses A1 - A4 should be completed for **each** Category A species. If there are no Category A species in the fishery under assessment, this section can be deleted. A Category A species must meet the minimum requirements of all four clauses before it can be recommended for approval. The clauses should be completed by providing sufficient evidence to justify awarding each of the requirements a pass or

fail rating. The species must achieve a pass rating against all requirements to be awarded a pass overall. **If the species fails any of these clauses it should be re-assessed as a Category B species.**

Species Name	**Sardina Austral /Falkland sprat (*Sprattus fueguensis*)**	
A1	**Data Collection - Minimum Requirements**	
A1.1	Landing data are collected such that the fishery-wide removals of this species are known.	Yes
A1.2	Sufficient additional information is collected to enable an indication of stock status to be estimated.	Yes
	Clause outcome:	**Pass**

A1.1 Landing data are collected such that the fishery-wide removals of this species are known.

In Chile, fishery-dependent data is collected through port sampling of landings (SERNAPESCA Inspectors) and observer reports (IFOP). Mandatory logbooks are required for all the vessels. Furthermore, there is a no-discard policy in place in the country.

Although all landings of Falkland sprat are recorded, information provided by IFOP indicates that there are issues with underreporting and misreporting of species. Correction factors are applied in both industrial and artisanal fisheries to account for under-reporting (Figure 2):

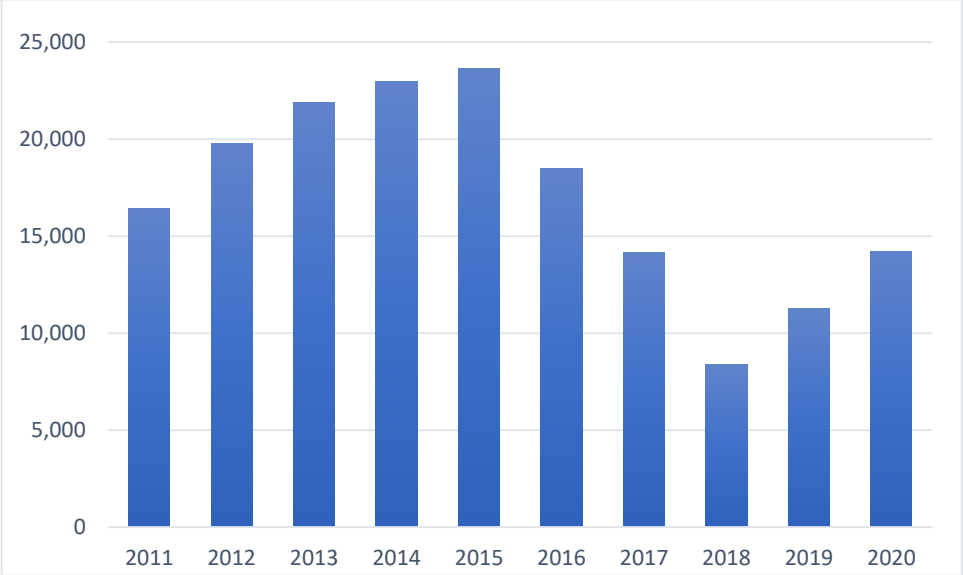


Figure 2 Official annual landings (t) of *Sardina austral* in the interior waters of the Mar de Chiloé (Area X) from 2011-2020 (SERNAPESCA[9]).

[9] http://www.sernapesca.cl/informes/estadisticas

Landings data are collected such that the fishery-wide removals of this species are known, **sub-clause A1.1 is met**.

A1.2 Sufficient additional information is collected to enable an indication of stock status to be estimated.

Since 2009 IFOP has performed annual stock assessments and has estimated annual allowable catches through a size-structured model. IFOP carries out three different lines of monitoring and assessment on this resource: a monitoring program for small pelagic fish from Valparaiso Region to Aysén Region (2013-2016 and 2018), the acoustic evaluation of small pelagic

fish at Los Lagos and Aysén Regions (2014-2018), and the status and sustainable exploitation options of the main resources of Chile (2015-2018). No reports are available directly from the IFOP website since 2018, although the results can be accessed from the scientific committee and management's acts (https://www.subpesca.cl/portal/616/w3-propertyvalue-51142.html#collapse04). There have been additional evaluations that complemented these records in 2008 (Niklitschek et al. 2009), 2010 (Cubillos et al. 2011, in (Galleguillos et al. 2012) and 2013 (Cubillos et al. 2015). Discards and bycatch have also been monitored in 2017-2020.

Additional data collected from the small pelagic fishery include total landings, age and size estimates from sampling. Information collected at landing sites and also directly from fishing vessels included location and time of catch, length, weight, sex, and age data, and size frequency distribution data.

Additionally, the FIPA (National Fund for Fisheries and Aquaculture Research) has carried out several studies on:

- Ecosystemic role and ecologic and technological interactions of the sprat with other species (Neira et al. 2014);
- Identification of reproductive areas (Castro et al. 2015);
- Biological parameters (Cerna Troncoso and Plaza 2015);
- Recruitment estimation (Vásquez et al. 2017);
- Ecosystemic approach implementation on the Los Lagos Region fishery (finished but not publicly available).

Additional information is collected to enable an indication of stock status to be estimated. **Sub-clause A1.2 is met**.

References

Castro, L., S. Soto, A. Llanos, I. Pérez, L. Cubillos, R. Alarcón, G. Claramunt, and et al. 2015. Identificación de zonas de desove y estadios tempranos de pelágicos pequeños en aguas interiores de la X y XI Regiones - FIPA. SUBPESCA. Fondo de Investigación Pesquera y de Acuicultura. https://www.subpesca.cl/fipa/613/w3-article-89336.html.

CCT-PP 2022. Comité Científico de Pesquerías de Pequeños Pelágicos. Available at: https://www.subpesca.cl/portal/616/w3-propertyvalue-51142.html#collapse04

Cerna Troncoso, F., and G. Plaza. 2015. Caracterización de la historia de vida de anchoveta, sardina común y sardina austral de la zona centro sur – FIPA. SUBPESCA. Fondo de Investigación Pesquera y de Acuicultura.

Cubillos, L., L. Castro, M. Gutierrez, and E. Navarro. 2015. Evaluación hidroacústica de pequeños pelágicos en aguas interiores de la X y XI Regiones, año 2013 – FIP 2013-11. Fondo de Investigación Pesquera y de Acuicultura. 239 pp. Universidad de Concepción.

Galleguillos, R., S. Ferrada, C. Canales-Aguirre, C. Hernández, M. Oliva, M. González, L. Cubillos, E. Niklitschek, and P. Toledo. 2012. Determinación de unidades poblacionales de sardina austral presente entre la X y XII Regiones de Chile. Informe Final, Proyecto del Fonde de Investigación Pesquera FIP no 2010-17. 256 pp. Universidad de Concepción.

Neira, S., H. Arancibia, M. Barros, L. Castro, L. Cubillos, E. Niklitschek, and R. Alarcón. 2014. Rol ecosistémico de sardina austral, interacciones ecológica y tecnológicas con otras especies de interés comercial – FIPA. SUBPESCA. Fondo de Investigación Pesquera y de Acuicultura. https://www.subpesca.cl/fipa/613/w3-article-89322.html

Niklitschek, E., P. Toledo, E. Hernández, J. Nelson, M. Soule, C. Herranz, C. Murillo, and X. Valenzuela. 2009. Evaluación hidroacústica de pequeños pelágicos en aguas interiores de la X y XI Regiones, año 2007 – FIPA. SUBPESCA. Fondo de Investigación Pesquera y de Acuicultura. 198 pp. Universidad Austral de Chile.

Vásquez, S., C. Salas, S. Núñez Elías, L. Soto, J. Letelier, M. Arteaga, C. Gatica, and et al. 2017. Estimación de índices de reclutamiento basado en variables y modelos biofísicos de pelágicos pequeños de la zona centro-sur de Chile, Fase II – FIPA. SUBPESCA. Fondo de Investigación Pesquera y de Acuicultura.

Links	
MARINTRUST Standard clause	1.3.2.1.1, 1.3.2.1.2, 1.3.2.1.4, 1.3.1.2
FAO CCRF	7.3.1, 12.3
GSSI	D.4.01, D.5.01, D.6.02, D.3.14

A2	**Stock Assessment – Minimum Requirements**		
	A2.1	A stock assessment is conducted at least once every 3 years (or every 5 years if there is substantial supporting information that this is sufficient for the long-term sustainable management of the stock), and considers all fishery removals and the biological characteristics of the species.	Yes
	A2.2	The assessment provides an estimate of the status of the biological stock relative to a reference point or proxy.	Yes
	A2.3	The assessment provides an indication of the volume of fishery removals which is appropriate for the current stock status.	Yes
	A2.4	The assessment is subject to internal or external peer review.	Yes
	A2.5	The assessment is made publicly available.	Yes
		Clause outcome:	**Pass**

A2.1 A stock assessment is conducted at least once every 3 years (or every 5 years if there is substantial supporting information that this is sufficient for the long-term sustainable management of the stock) and considers all fishery removals and the biological characteristics of the species.

As indicated above, fishery-independent (hydroacoustic) surveys are carried out by the IFOP. These surveys estimate biomass of these species (Falkland sprat, anchovy and sardine) and based on that information the management committee establishes a TAC. The last hydroacustic survey for the species was conducted by the IFOP in April-May 2021 (for Los Lagos Region and Aysen) (CCT_PP 2021)

The LGPA includes a commitment to develop a management plan for any fishery with restricted access; however, the development of a management plan for the small pelagic fishery in Region X, or any of its component species, appears to be still in development. The LGPA also includes commitments to manage fisheries sustainably.

In 2018, the MC proposed a Fisheries Improvement Project (FIP) in order to move towards an MSC certification of sustainability (CMSA 2018b), and the requirements, such as the implementation of precautionary reference points, are being discussed (CMSA 2019).

The species is assessed regularly (the last assessment was conducted by the IFOP in 2021), and the assessment considers all fishery removals and biological characteristics of the species. **Sub-clause A2.1 is met.**

A2.2 The assessment provides an estimate of the status of the biological stock relative to a reference point or proxy.

The reference points currently in place for the stock of Falkland sprat are:

- The biomass target reference point: B_{MSY} = 55% SSB_0 (virgin spawning stock biomass);
- The limit reference point for biomass: B_{lim} = 27.5% SSB_0;
- F_{MSY} = $F_{60\%}$ of SSB per recruit (Leal Faúndez et al. 2018).

Currently, the IFOP assesses the stock in reference to these reference points. However, it was advised to management to reduce the fleet and find solutions to the multispecific fishery situation, which include more revision of the reference points, robust

enforcement and surveillance on landings (proportion of species) since management of this fishery in recent years has been insufficient in ensuring sustainability (Leal Faúndez et al. 2018; Aranis et al. 2019). The reference points are currently under revision (FIPA 2019-17).

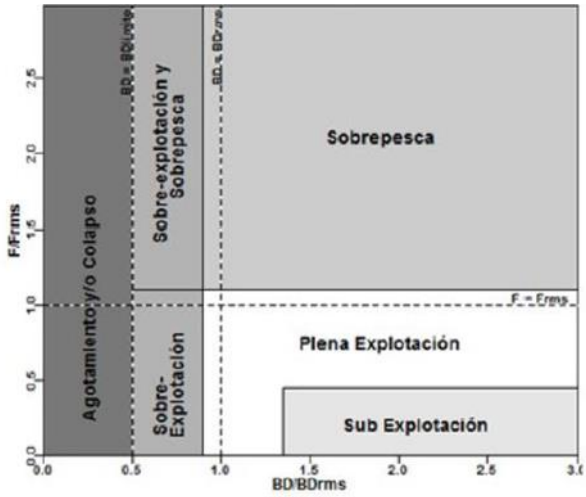


Figure 3: Diagram used by the CCT-PP to describe small pelagic fisheries (sobrepesca = overfishing; Plena Explotación = fully exploited; Sub Explotación = under exploited; $F/F_{rms} = F/F_{MSY}$; $BD/BD_{rms} = SSB/SSB_{MSY}$).

The stock assessment provides an estimate of the status of the biological stock relative to a reference point or proxy. **Clause A2.2 is met.**

A2.3 The assessment provides an indication of the volume of fishery removals which is appropriate for the current stock status.

As indicated above the IFOP assesses the stock in reference to a biological reference framework (target and limit reference points) established by the authorities. In 2021, the Scientific and Technical Committee for Small Pelagic Fisheries (CCT-PP) considered that the Falkland sprat stock in the Los Lagos Region (X), was in a state of full exploitation (SSB/SSB_{MSY}=1.125 and F/ F_{MSY}=1.079) with a high probability of overfishing (p-0.47) in 2021.

Taking into account the results of the 2021 assessment the 2022 Quota allocation for the fishery (Los Lagos region) was published by SUBPESCA on 30.11.2021:

CUOTA SARDINA AUSTRAL A.I. REGIÓN DE LOS LAGOS	Toneladas
CUOTA GLOBAL	**9.271**
Cuota de Investigación	35
Cuota de Consumo Humano	-
Cuota de imprevisto	-
Cuota Remanente	9.236
Fracción Artesanal	**9.236**
Fauna Acompañante	70
Cuota objetivo artesanal	**9.166**
Enero –Diciembre	9.166

Table 1: 2022 Quota Allocation Falkland Sprat

The Scientific Committee for Small Pelagic Fisheries recommended a maximum biologically acceptable catch (BAC) for the year 2022 that is trending towards MSY equivalent to 9,489 tonnes, discounting this catch by 23% discard, the maximum BAC resulted in 9,271 tonnes, with the recommended range being between 7,417 to 9,271 tonnes.

The determination of the maximum TAC considered a 30% risk of not reaching the management objective, equivalent to a 14% safeguard, with a low recruitment scenario and a catch projection to 2021 equivalent to the total quota currently established.

The assessment provides an indication of the volume of fishery removals which is appropriate for the current stock status. **Sub-clause A2.3 is met.**

A2.4 The assessment is subject to internal or external peer review.

In Chile stock assessments and the management approach used in the fishery undergo detailed peer reviews through Fisheries Management Committee meetings. These reviews can be considered as both internal and external reviews as members present in those committees may also come from the outside assessment process (IFOP). Both IFOP and SUBPESCA have also commissioned external peer reviews, and a series of workshops have been undertaken with experts from Peru. The Chilean authorities have also invited international experts to evaluate their setting of biological reference points within the MSY framework.

The assessment is subject to internal and external review. **Sub-clause A2.4 is met.**

A2.5 The assessment is made publicly available.

Reports of stock assessments and advice on TACs can be found on IFOP and SUBPESCA websites. Actas are published on the SUBPESCA's website give annual summaries of the stock assessment process and confirm final decisions on TAC's. Although stock assessments cab be sometimes difficult to find on the IFOP website, they can be accessed through the actas published by the CCT-PP committee.

The assessment is made publicly available. **Sub-clause A2.5 is met.**

References

Aranis, A., A. Gómez, K. Walker, M. Ramírez, S. Mora, L. Caballero, G. Eisele, F. Cerna, C. Valero, A. López, C. Machuca, L. Muñoz, M. Troncoso, M. Albornoz, J. Bonicelli, and U. Cifuentes. 2019b. Programa de Seguimiento de las Principales Pesquerías Pelágicas de la Zona Centro-Sur de Chile, V-XI Regiones, año 2018. Informe Final. Convenio de Desempeño, 2018. 1117 pp. IFOP. https://www.ifop.cl/wp-content/contenidos/uploads/RepositorioIfop/InformeFinal/2020/P-581146.pdf

CCT-PP 2021. Comité Científico de Pesquerías de Pequeños Pelágicos. Acta N4 – 2021. Available at: https://www.subpesca.cl/portal/616/articles-111643_documento.pdf

CMSA. 2018b. Acta 6/2018 Comité de Manejo de Sardina Austral X Región

CMSA. 2019. Acta 6/2019 Comité de Manejo de Sardina Austral X Región.

Daly, J. 2019. Global Standard for Responsible Supply of Marine Ingredients. Sprattus fueguensis Chile Area X. Fishery Assessment Methodology and Template Report V2.0. 36 pp.

Leal Faúndez, E., M. Zúñiga Basualto, D. Bucarey Sepúlveda, and F. Espíndola Rebolledo. 2018. Estatus y posibilidades de explotación biológicamente sustentables de los principales recursos pesqueros nacionales, 2018. Sardina austral X Región. Convenio de Desempeño 2017. Informe 2 Estatus. 141 pp. IFOP.

SUBPESCA 2022. Estado de situacion de las principales pesquerias Chilenas ano 2021. 108 pp.

Links

MARINTRUST Standard clause	1.3.2.1.2, 1.3.2.1.4, 1.3.1.2
FAO CCRF	12.3
GSSI	D.5.01, D.6.02, D.3.14

A3	Harvest Strategy - Minimum Requirements		
	A3.1	There is a mechanism in place by which total fishing mortality of this species is restricted.	Yes
	A3.2	Total fishery removals of this species do not regularly exceed the level indicated or stated in the stock assessment. Where a specific quantity of removals is recommended, the actual removals may exceed this by up to 10% ONLY if the stock status is above the limit reference point or proxy.	Yes
	A3.3	Commercial fishery removals are prohibited when the stock has been estimated to be below the limit reference point or proxy (small quotas for research or non-target catch of the species in other fisheries are permissible).	Yes
		Clause outcome:	**Pass**

A3.1 There is a mechanism in place by which total fishing mortality of this species is restricted.

Access to the fishery is restricted, in recognition of the state of full exploitation of the fishery. Since 2008, the catch in this area has been regulated through an annual TAC. Registration in the Artisanal Fishing Register and entry of new applications is prohibited until 19 July 2025.

There are gear restrictions in place for the artisanal fleet; Vessels with artisanal purse seines, the size of which must not exceed: Maximum stretched net height 20 fathoms. However, nets of up to 33 fathoms in height, measured in the same way, may be used in maritime areas where the depth exceeds 40 metres. The fishery is closed during spawning and recruitment. All technical measures are published in Normativa (SUBPRSCA 2022a) and are made available to all stakeholders.

Therefore, it is understood that a management mechanism is in place to restrict fishing mortality. **Sub-clause A3.1 is met.**

[12]https://www.subpesca.cl/portal/615/w3-propertyvalue-50867.html

A3.2 Total fishery removals of this species do not regularly exceed the level indicated or stated in the stock assessment. Where a specific quantity of removals is recommended, the actual removals may exceed this by up to 10% ONLY if the stock status is above the limit reference point or proxy.

From 2006-2011 spawning stock biomass decreased from a high of 89,000t to 36,000t. Assessments from 2007-2010 indicated the resource was overfished during this time. Since 2010 enforced reductions in fishing mortality resulted in the fishery being upgraded to a state of full exploitation. In 2017, spawning stock biomass (SSB) was equal to 60% of the unexploited SSB (reference point). In general terms, catches are below the set TAC, except for 4 years (2008, 2012, 2014, and 2019). Nevertheless, being a multispecific fishery it could happen that fishermen misreport species when the set catch limit lowers, as occurred in 2010 when the proportion of Araucanian herring increased considerably. Both species were considered the same until 2006, when the Falkland sprat began to be individually assessed (Leal Faúndez et al. 2018). Additionally, when Sernapesca officers have a low presence, it could drive fishers to underreport their catches, as happened in 2017 (Leal Faúndez et al. 2018). This situation brings uncertainty to the compliance of fishermen.

However, after having the lowest biomass estimates in 2018, the stock seems to have recovered and is not considered overexploited anymore (SUBPESCA 2022). The SC estimates 114,000 tonnes of total biomass in 2020, with 38,000 tonnes of spawning biomass (SSB) and fishing mortality (F) of 0.32 year-1. The estimated ratios SSB/SSBMSY and F/FMSY are 1.27 and 1.079 respectively, meaning that the stock is fully exploited.

Total fishery removals of this species do not regularly exceed the level indicated or stated in the stock assessment. **Sub-clause A3.2 is met.**

A3.3 Commercial fishery removals are prohibited when the stock has been estimated to be below the limit reference point or proxy (small quotas for research or non-target catch of the species in other fisheries are permissible).

The LGPA does not establish this type of restrictions (fishing prohibition) on catches when stock biomass is below limit biomass. However, the law indicates that a resource recovery plan must be implemented. The management committee is required to elaborate and implement such plan (Article 9 LGPA). This implies reductions in fishing mortality at levels below or equal to the F_{MSY} according to the expected time of recovery established by the management committee. In that case, the set TAC needs to follow scientific advice and comprehends a small percent for human consumption, bycatch, and research quotas (Subpesca 2020d). IFOP has raised the concern that management is not being sustainable since measures have not stopped the stock from getting overexploited (Aranis et al. 2019). However, the stock is currently above the established biomass reference point (B_{MSY}).

When below the limit reference point, a recovery plan must be implemented. Therefore, it is considered that **sub-clause A3.3 is met.**

References

Aranis, A., A. Gómez, K. Walker, M. Ramírez, S. Mora, L. Caballero, G. Eisele, F. Cerna, C. Valero, A. López, C. Machuca, L. Muñoz, M. Troncoso, M. Albornoz, J. Bonicelli, and U. Cifuentes. 2019. Programa de Seguimiento de las Principales Pesquerías Pelágicas de la Zona Centro-Sur de Chile, V-XI Regiones, año 2018. Informe Final. Convenio de Desempeño, 2018. 1117 pp. IFOP. https://www.ifop.cl/wp-content/contenidos/uploads/RepositorioIfop/InformeFinal/2020/P-581146.pdf

Leal Faúndez, E., M. Zúñiga Basualto, D. Bucarey Sepúlveda, and F. Espíndola Rebolledo. 2018. Estatus y posibilidades de explotación biológicamente sustentables de los principales recursos pesqueros nacionales, 2018. Sardina austral X Región. Convenio de Desempeño 2017. Informe 2 Estatus. 141 pp. IFOP.

SUBPESCA 2022. Estado de situacion de las principales pesquerias Chilenas ano 2021. 108 pp. https://media.elmostrador.cl/2022/03/informe-subpesca.pdf

SUBPESCA 2022b. Reglamentos de pesca artisanal. Available at: https://www.subpesca.cl/portal/615/w3-propertyvalue-50867.html

Standard clause 1.3.2.1.3

Links	
MARINTRUST Standard clause	1.3.2.1.3, 1.3.2.1.4
FAO CCRF	7.2.1, 7.22 (e), 7.5.3
GSSI	D3.04, D6.01

A4	**Stock Status - Minimum Requirements**		
	A4.1	The stock is at or above the target reference point, OR IF NOT: The stock is above the limit reference point or proxy and there is evidence that a fall below the limit reference point would result in fishery closure OR IF NOT: The stock is estimated to be below the limit reference point or proxy, but fishery removals are prohibited.	Yes
		Clause outcome:	**Pass**

A4.1 The stock is at or above the target reference point, OR IF NOT:

The stock is above the limit reference point or proxy and there is evidence that a fall below the limit reference point would result in fishery closure OR IF NOT:

The stock is estimated to be below the limit reference point or proxy, but fishery removals are prohibited.

As indicated above the IFOP assesses the stock in reference to a biological reference framework (target and limit reference points) established by the authorities. In 2021, the Scientific and Technical Committee for Small Pelagic Fisheries (CCT-PP) considered that the Falkland sprat stock in the Los Lagos Region (X), was in a state of full exploitation (SSB/SSB_{MSY}=1.125 and F/ F_{MSY}=1.079) with a high probability of overfishing (p-0.47) in 2021. The spawning biomass reaches 38,000 tonnes, which is 12% above the SSB_{MSY}, while the fishing mortality of 0.32 is slightly above the F_{MSY}, but below the limit of overfishing. These estimates were preliminary and should be confirmed when catch and structure data are available for the second half of 2021.

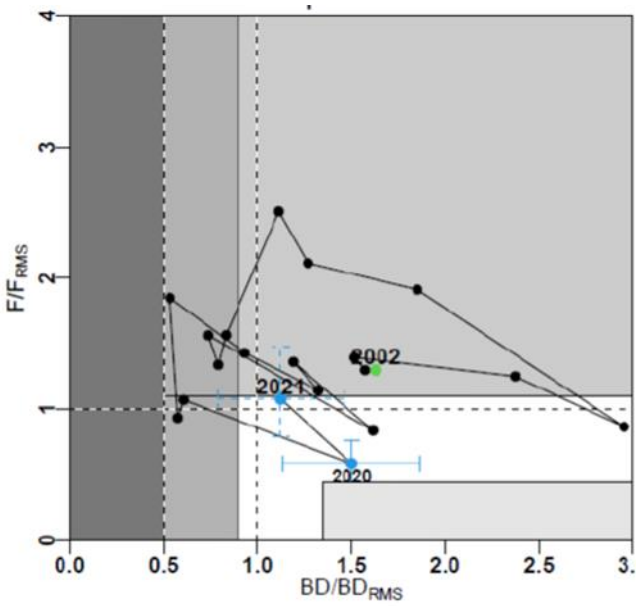
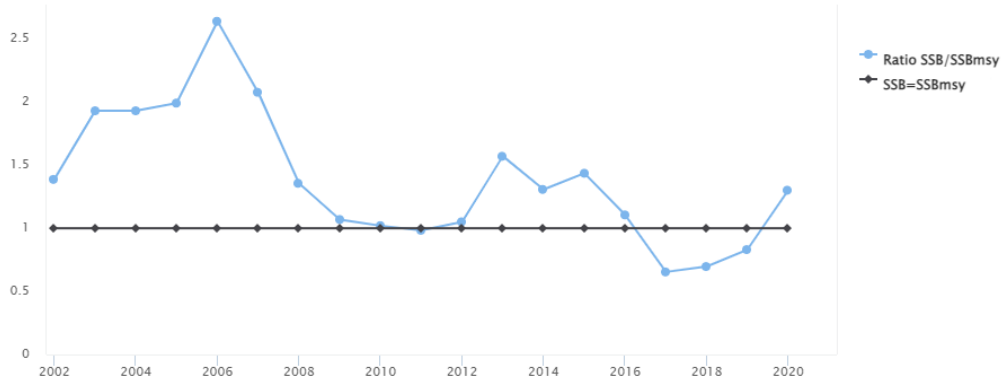


Figure 4: Status of the stock of Falkland sprat in Region X (Source: IFOP)

The status of the stock over time is shown in the figure 4 below:

Biomass



Fishing mortality

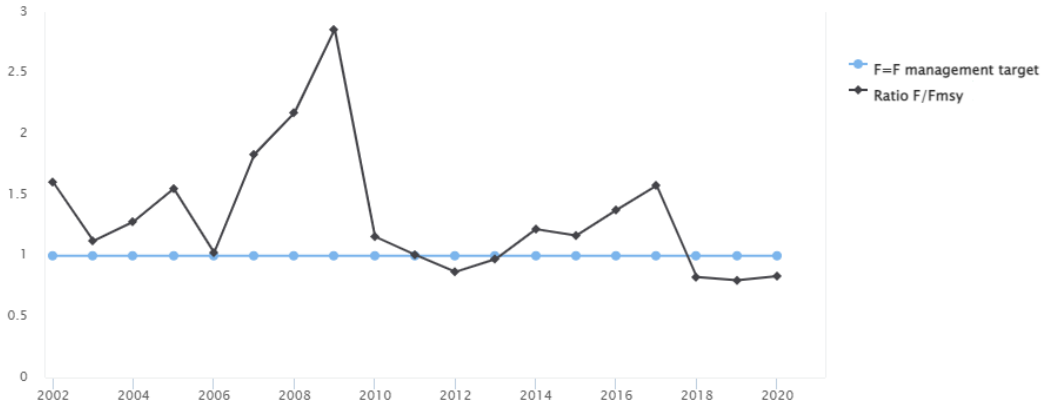


Figure 5: Falkland Sprat SSB and fishing mortality (Source: SFP 2022).

The stock is above the limit reference point. **Sub-clause A4.1 is met.**

References

CCT-PP. 2019b. INFORME TECNICO N°5, 6o Sesión CCT-PP. 52 pp. https://www.subpesca.cl/portal/616/articles-105856_documento.pdf

CCT-PP. 2020b. Informe Técnico N°2, de la sexta sesión del Comité Científico Técnico de Pesquerías de Pequeños Pelágicos, año 2020. 53 pp. https://www.subpesca.cl/portal/616/articles-109051_documento.pdf

Sustainable Fisheries Partnership (SFP). Falkland sprat Los Lagos Region. FishSource profile. In: FishSource [online]. Updated 9 April 2021. Accessed [23 May 2022]. https://www.fishsource.org/stock_page/2551

SUBPESCA 2022. Estado de situacion de las principales pesquerias Chilenas, ano 2021. 108 pp. https://media.elmostrador.cl/2022/03/informe-subpesca.pdf

Links	
MARINTRUST Standard clause	**1.3.2.1.4**
FAO CCRF	**7.2.1, 7.2.2 (e)**
GSSI	**D6 01**

CATEGORY C SPECIES

In a whole fish assessment, Category C species are those which make up less than 5% of landings, but which are subject to a species-specific management regime. In most cases this will be because they are a commercial target in a fishery other than the one under assessment. In a by-product assessment, Category C species are those which are subject to a species-specific management regime and are usually targeted species in fisheries for human consumption.

Clause C1 should be completed for **each** Category C species. If there are no Category C species in the fishery under assessment, this section can be deleted. A Category C species does not meet the minimum requirements of clause C1 should be re-assessed as a Category D species.

Species Name		**Anchovy (*Engraulis ringens*) Area V-X**	
C1	**Category C Stock Status - Minimum Requirements**		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process OR are considered by scientific authorities to be negligible.	Yes
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.	Yes
		Clause outcome:	**PASS**

Evidence

C 1.1 Fishery removals of the species in the fishery under assessment are included in the stock assessment process OR are considered by scientific authorities to be negligible.

In Chile, fishery-dependent data is collected through port sampling of landings (SERNAPESCA Inspectors) and observer reports (IFOP). Mandatory logbooks are required for all the vessels. Furthermore, there is a no-discard policy in place in the country.

Catches of the anchoveta stock have shown a decreasing trend since 2011/2012 due to decreases in the availability of the stock.

The annual catch limit (TAC) recommended by the CCT-PP and set by the authorities is modified in an adaptive way during the year based on updated scientific data.

Based on the assessment results (see next sub-clause), the Committee recommended a Biologically Acceptable Catch (TAC) (V-X) tending towards the MSY equivalent of 176,852 tonnes. Consequently, discounting the above by a 2% discard for the year 2022, a maximum TAC of 173,295 tonnes and a range between 138,652 to 173,315 tonnes was determined in conformance with Article 153 c) of the LGPA. This catch was to be divided between the industrial (37,329 t) and artisanal (132, 350 t) fleets. This range was precautionary as it considers established biological reference points (BDRMS = 55%BDo (BMSY); Limite= 27,5%BDo; FRMS =F60% BDPR (FMSY) and the probability of exceeding these reference points.

For the estimation of the CBA, a historical average recruitment (1997-2021) and a 30% risk of not reaching the management objective, equivalent to a 10% safeguard, were considered. The CBA status and range were adopted by consensus.

Fishery removals of the species in the fishery under assessment are included in the stock assessment process. **The species passes Clause C1.1.**

C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.

The CCT-PP met in October 2021 (reported in March 2022) to assess the state of the anchovy stock (V-X) and to determine a Biologically Acceptable Catch (TAC) for the fishery in 2022. The Committee established that the anchovy stock in the south-central zone was in a state of full exploitation (SSB/SSB_{MSY} = 1.37 and F/F_{MSY} =0.842), with a low probability of overfishing (p=0.09) for the year 2020/21. The spawning biomass was 31% above SSB_{MSY} and the fishing mortality was a 16% below F_{MSY}.

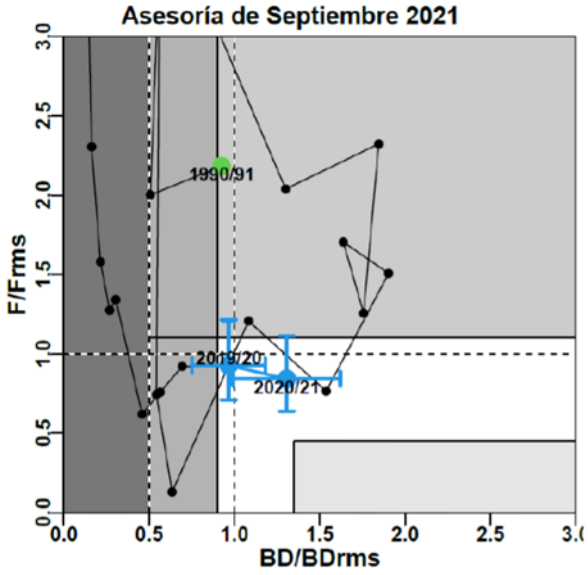


Figure 5: IFOP Summary of the 2021 Anchovy (V-X) stock assessment (Source: SUBPESCA 2022)

For reference, the spawning biomass projection for 2021/22 shows a slight decline for all recruitment scenarios analysed, however, it would remain above the BDRMS, with a high probability of remaining in the fully exploited state.

The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point and **passes Clause C1.2**.

References

SUBPESCA 2022. Estado de situación de las pesquerías Chilenas, ano 2021. 108 pp. https://media.elmostrador.cl/2022/03/informe-subpesca.pdf

Standard clauses 1.3.2.2

Species Name		Araucanian herring (*Strangomera bentincki*)	
C1	**Category C Stock Status - Minimum Requirements**		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process OR are considered by scientific authorities to be negligible.	Yes
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.	Yes
		Clause outcome:	**PASS**

Evidence

C1.1 Fishery removals of the species in the fishery under assessment are included in the stock assessment process OR are considered by scientific authorities to be negligible

In Chile, fishery-dependent data is collected through port sampling of landings (SERNAPESCA Inspectors) and observer reports (IFOP). Mandatory logbooks are required for all the vessels. Furthermore, there is a no-discard policy in place in the country. This annual catch limit is modified in an adaptive way during the year based on the updated scientific data and in accordance with the scientific recommendations.

The CCT-PP (SUBPESCA Management Committee) met in October 2021 (reported in March 2022) to assess the state of the Araucanian herring (V-X) and to determine reference points and a Biologically Acceptable Catch (TAC) for the 2022 fishery. The information available as of June 2021 was:

(1) SERNAPESCA landings statistics from 1990/91 to 2020/21; (2) Discard percentage coming from the IFOP Discard Programme corresponds to the period 2015-2019; (3) Catch-at-age and individual weights-at-age information coming from the "Programa de Seguimiento de las Principales Pesquerías Nacionales (Pesquerías Pelágicas)" from 1990/91 to 2020/21; (4) Summer (years 2000 to 2021) and autumn (years 2003 to 2021) acoustic biomass series from the IFOP cruise programme "Hydro-acoustic assessment of anchoveta and common sardine stocks between the Regions of Valparaíso and Los Lagos.

Fishery removals of the species in the fishery under assessment are included in the stock assessment process. The species **passes Clause C1.1**

C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible

For this stock, recruitment in 2020/2021 increased by 32% from the previous year. Total biomass increased by 33% in 2020/2021 from the previous year. The spawning biomass for 2020/2021 was estimated at 492,050 t, corresponding to 43% less than the previous year's estimate.

Based on the stock assessment provided by IFOP using an age-structured model, the Committee established that after twelve years the stock of Araucanian herring in the central southern zone moved from fully exploited to overfished status (SSB/SSB_{MSY} = 0.601 and F/F_{MSY} = 1.108), with a high probability of overfishing (p=0.51) by 2020/21. Spawning biomass is below the historical average of the series, 40% below SSB_{MSY} and fishing mortality (F=0.33) slightly above F_{MSY}. The

decrease in spawning biomass in 2020/21 is due to the decline in recruitment in the two previous years (2018/19 and 2019/20) together with the reduction in adult biomass in 2019/20.

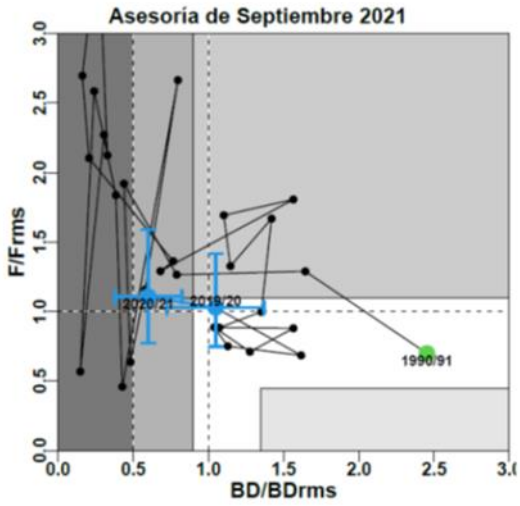


Figure 6: IFOP Summary of the Araucanian herring (V-X) assessment (Source: SUBPESCA 2022)

Based on the results of that assessment, the working group recommended a Biologically Acceptable Catch (TAC) for 2022 between 258,403t and 323,004t as laid down in Article 153c) of the LGPA.

Although the stock of Araucanian herring is below the $SSB_{MSY,}$ as indicated previously the CCT-PP uses a limit reference point for biomass: B_{lim} = 27.5% SSB_0 = ½ SSB_{MSY} for small pelagics. Therefore, the stock is still over the Blimit and moreover, according to the CCT-PP, considering the good recruitments recorded in 2020/21, the projections for 2021/22 indicate that regardless of the level of recruitment, a recovery in biomass and a decrease in the probability of overfishing will be observed.

The precautionary approach is applied. The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and **passes Clause C1.2.**

References

SUBPESCA 2022. Estado de situación de las pesquerías Chilenas, ano 2021. 108 pp. **https://media.elmostrador.cl/2022/03/informe-subpesca.pdf**

Standard clauses 1.3.2.2

FURTHER IMPACTS

The three clauses in this section relate to impacts the fishery may have in other areas. A fishery must meet the minimum requirements of all three clauses before it can be recommended for approval.

F1	Impacts on ETP Species - Minimum Requirements		
	F1.1	Interactions with ETP species are recorded.	Yes
	F1.2	There is no substantial evidence that the fishery has a significant negative effect on ETP species.	Yes
	F1.3	If the fishery is known to interact with ETP species, measures are in place to minimise mortality.	Yes
		Clause outcome:	**PASS**

Evidence

F1.1 Interactions with ETP species are recorded.

The IFOP's "Scientific Observer Program" monitors bycatch and discards in Chilean fisheries. Bycatch of protected species is also self-reported by the fishery.

A manual of good practices (INPESCA) to avoid discarding and incidental capture of ETP species has been provided to all stakeholders active in the fishery. A manual of good practices and treatment of ETP species is also under development in the artisanal fisheries (for sea lions). Workshops have been undertaken to present manuals and best practice training to stakeholders in the fishery.

The Fisheries Research Institute, together with all the companies (8) has records of:

- Specific logbooks for bycatch, incidental and ETP species according to FAO and ORP protocol (2017-2018)
- A software platform developed for the registry of incidental fishing in the operation of the industrial fleets XV-X
- On board protocols for the release and treatment of ETP fauna
- Training programs in place for crews of fishing vessels.

Interactions with ETP species are recorded. **Sub-clause F.1.1 is met.**

F1.2 There is no substantial evidence that the fishery has a significant negative effect on ETP species

Threatened and Protected (ETP) species are defined for the purposes of the MarinTrust assessment as those which either: appear in the CITES appendices (I, II, III), or; are categorised by the IUCN as Endangered or Critically Endangered. Significant negative effect means that the fishery is highly likely to hinder the recovery of the ETP species.

The assessed fishery seems to interact with a number of marine mammals and seabirds, none considered ETP species based on MarinTrust guidance.

Informe técnico (R.Pesc) N 187/2021 used as a base for developing the bycatch and discard plan for the fishery indicates that between February 2017 and December 2019, 187 sets were monitored by fisheries observers in the fishery. In the

observed sets, 518 South American sea lions *Otaria flavescens* were caught (2 dead) as well as 15 coastal birds (Kelp gull *Larus dominicanus* (7 caught - all dead) and brown-hooded gull *Larus maculipennis* (6 dead of 8 caught), both species listed as Least Concern on the IUCN Red List) (Vega et al., 2020).

None of these species is classified as ETP species in this assessment as only the IUCN categories (EN and CR) and CITES listed species are considered as ETP species by the MT standard. The fishery has an impact on marine mammals and seabirds. Marine mammals are mostly released alive, and while the catch of certain seabirds may be somewhat of a concern these species are not considered ETP species by the MT standard. **F1.2 is met.**

F1.3 If the fishery is known to interact with ETP species, measures are in place to minimise mortality

Article 7 of the Chilean fishery law (GLFA) {Law 20,657 - 2013} refers to the discard and bycatch in Chilean fisheries. It indicates that the Undersecretariat of fishing must conduct a two-years research program to assess the level of discards and bycatch in Chilean fisheries. This research program must compile information on level of discard of both the target species and the accompanying fauna, their causes, and how this information is compiled; and include measures to reduce both discards and bycatch. It also requires that within a maximum period of three years after that research program, a discard and bycatch management plan must be approved for the fishery, containing at least the following elements:

- conservation measures and effective tools necessary to reduce discards and bycatch,
- a monitoring and follow-up program of the plan,
- an evaluation of the measures adopted,
- and a training and dissemination program.

This reduction plan must consider a code of good practices in fishing operations, as a complementary mitigation measure. Likewise, it may consider incentives for innovation in fishing systems and gears, aimed at mitigating or reducing discards and bycatch.

Article 7 B {Law 20,657 - 2013} indicates that individuals of a target species may not be discarded, whatever their access regime, and their accompanying fauna, unless the following requirements are met:

- sufficient technical background information on the discard has been compiled, in accordance with the research program,
- a global annual catch quota has been set for the target species and discards have been considered when establishing that quota,
- the target species and its accompanying fauna are subject to the reduction plan, and
- the discard does not affect the conservation of the target species.

The Undersecretariat of Fisheries will establish annually the list of the target species and accompanying fauna that comply with these requirements.

The law also specifies that it will be mandatory to return marine mammals, reptiles, penguins, and other seabirds to the sea, unless they are severely damaged or injured, in which case they will be retained on board for the purpose of being sent to a rehabilitation centre if possible. In the case of the Chondrichthyes, (Res.Ex. 2,063 2020) establishes a code of conduct for the capture and handling of these species and describes how to return them safely to the sea.

A discard and bycatch reduction plan has been recently approved for the fishery (R.Ex.2490/2021). It includes a number of measures, such as the prohibition of discarding any species, continue monitoring bycatch, introduce good practices to avoid the catch of seabirds and marine mammals, and conducting awareness activities to reduce bycatch, among others (SUBPESCA 2021).

Measures are in place to minimize mortality. **Sub-clause F1.3 is met.**

References

Aranis, A., A. Gómez, K. Walker, M. Ramírez, S. Mora, L. Caballero, G. Eisele, F. Cerna, C. Valero, A. López, C. Machuca, L. Muñoz, M. Troncoso, M. Albornoz, J. Bonicelli, and U. Cifuentes. 2019b. Programa de Seguimiento de las Principales Pesquerías Pelágicas de la Zona Centro-Sur de Chile, V-XI Regiones, año 2018. Informe Final. Convenio de Desempeño, 2018. 1117 pp. IFOP. https://www.ifop.cl/wp-content/contenidos/uploads/RepositorioIfop/InformeFinal/2020/P-581146.pdf

BirdLife International. 2018. Ardenna creatopus. The IUCN Red List of Threatened Species 2018: e.T22698195A132633266. https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T22698195A132633266.en. Accessed on 16 May 2022.

BirdLife International. 2019. Ardenna grisea. The IUCN Red List of Threatened Species 2019: e.T22698209A154440143. https://dx.doi.org/10.2305/IUCN.UK.2019-3.RLTS.T22698209A154440143.en. Accessed on 16 May 2022.

Cárdenas-Alayza, S., Crespo, E. & Oliveira, L. 2016. Otaria byronia. The IUCN Red List of Threatened Species 2016: e.T41665A61948292. https://dx.doi.org/10.2305/IUCN.UK.2016-1.RLTS.T41665A61948292.en. Accessed on 16 May 2022.

INPESCA (March 2018) Manual de ingreso de datos pesqueros flota de cerco de la octava región (Software platform for the registry of incidental fishing. 5pp

SUBPESCA 2017. Informe técnico (R.Pesc) N 95/2017. Plan de reducción del descarte y la captura accidental para la pesqueria industrial y artesanal de sardina común y anchoveta. 61 pp.

SUBPESCA 2021. Informe técnico (R.Pesc) N 187/2021. Plan de reducción del descarte y la captura accidental para la pesquería de sardina austral y su fauna acompañante en aguas interiores de la Región de los Lagos. 50 pp.Vega et al., 2020. Documento técnico: resultados delprograma de investigación y propuestas de medidas de mitigación del decarte y la captura accidental para lapesqueria artesanal de sardina austral de la Region de los Lagos. Marzo 2020. 79 pp.

IFOP 2015. Estatus y posibilidades de explotación biológicamente sustentables de los principales recursos pesqueros nacionales año 2016": Anchoveta V-X Regiones. September 2015. 118 pp.

Standard clause 1.3.3.1

F2	**Impacts on Habitats - Minimum Requirements**		
	F2.1	Potential habitat interactions are considered in the management decision-making process.	Yes
	F2.2	There is no substantial evidence that the fishery has a significant negative impact on physical habitats.	Yes

	F2.3	If the fishery is known to interact with physical habitats, there are measures in place to minimise and mitigate negative impacts.	Yes
		Clause outcome:	**PASS**

Evidence

F2.1 Potential habitat interactions are considered in the management decision-making process

In Chile, artisanal purse seines can reach dimensions of 30 fathoms depth by 240 fathoms length (approx. 55 m x 249 m) while industrial purse seines can reach up to 60 × 500 fathoms (approx. 110 m x 915 m). In general, the impact of this fishing gear on the seafloor is not a subject under technical or scientific debate, since these nets are usually deployed at greater depths, where bottom contact does not occur.

A program for evaluating the impact of this and other fisheries on the ecosystem under an ecological risk assessment (ERA) is still under development within the framework of the SPRFMO (although it applies to other fisheries).

Potential habitat interactions are considered in the management decision-making process. **Sub-clause F2.1 is met.**

F2.2 There is no substantial evidence that the fishery has a significant negative impact on physical habitats

There are no indications of any interactions between the fishery and benthic habitats. Purse seine gear is not designed for interaction with the seabed, and the fleet typically operate offshore in deep waters. Gear loss is reported to be very rare in the fishery. In the case of the vulnerable marine ecosystems indicators (VME), there is no record of interactions with the Falkland Sprat purse seine fishery in the EEZ and in the high seas.

There is no substantial evidence that the fishery has a significant negative impact on physical habitats. **Sub-clause F.2.2 is met.**

F2.3 If the fishery is known to interact with physical habitats, there are measures in place to minimise and mitigate negative impacts.

As mentioned above, there is no information regarding interaction with benthic habitats as the purse seine fishery is typically an epipelagic fishery occurring in the water column, so there is no evidence of negative impact with physical habitats.

However, the overall management regime for protecting marine habitats and ecosystems within the Chilean EEZ and in the SPRFMO Convention area has some specific measures and strategies relating to marine habitats. There are more than 50 Marine Protected Areas (MPA) within the Chilean EEZ (Atlas of Marine Protection 2018), there are also include 5 Marine Reserves and 7 Marine Parks defined close to the fishing grounds where the fishery takes place. Although there are measures to protect the vulnerable areas as closures to fishing activities.

Since 2010, Chile has designated more than 400,000 square miles (over 1,000,000 km²) of its EEZ as marine parks where all extractive activities are prohibited (National Geographic News 2017). This is equivalent to more than 25% of the Chilean EEZ.

The Servicio Nacional de Pesca y Acuicultura (National Fisheries and Aquaculture Service, SERNAPESCA) is responsible for the management of Marine Parks and Reserves.

Industrial fishing for small pelagic stocks is prohibited from the foreshore for a distance of five nautical miles. It extends over 5 nautical miles measured from the coast from the I Region to 41º28,6'S (located in the first third of the X Region) and from south of 41°28,6' up to 5 nm west of the straight baselines.

Therefore, even though, the purse seine gear is not considered a gear with the potential to have significant negative impacts on physical habitats, measures are in place to protect habitats. **Sub-clause F2.3 is met.**

References

Aranis, A., A. Gómez, K. Walker, M. Ramírez, S. Mora, L. Caballero, G. Eisele, F. Cerna, C. Valero, A. López, C. Machuca, L. Muñoz, M. Troncoso, M. Albornoz, J. Bonicelli, and U. Cifuentes. 2019b. Programa de Seguimiento de las Principales Pesquerías Pelágicas de la Zona Centro-Sur de Chile, V-XI Regiones, año 2018. Informe Final. Convenio de Desempeño, 2018. 1117 pp. IFOP. https://www.ifop.cl/wp-content/contenidos/uploads/RepositorioIfop/InformeFinal/2020/P-581146.pdf

Standard clause 1.3.3.2

F3	Ecosystem Impacts - Minimum Requirements		
	F3.1	The broader ecosystem within which the fishery occurs is considered during the management decision-making process.	Yes
	F3.2	There is no substantial evidence that the fishery has a significant negative impact on the marine ecosystem.	Yes
	F3.3	If one or more of the species identified during species categorisation plays a key role in the marine ecosystem, additional precaution is included in recommendations relating to the total permissible fishery removals.	Yes
		Clause outcome:	**PASS**

Evidence

F3.1 The broader ecosystem within which the fishery occurs is considered during the management decision-making process

Due to the low trophic level of the species under consideration there can be an effect on other species which prey on the species under assessment. To account for the predation of these species' models have been adapted and in recent years ecosystem consideration has been considered to set up total fishery removals to ensure no impact on key roles of these species in the ecosystems.

The introduction of the five-mile artisanal-exclusive zone near the shoreline has provided significant protection to spawners and other shallow-water organisms from industrial fishing activities.

The stock is highly dependent on recruitment which in turn changes with environmental conditions and oceanographic conditions in the important Chilean upwelling ecosystem, like the El Niño and La Niña,

Also, since the enactment of the General Law on Fisheries and Aquaculture in 1991, a Reserve Zone for Artisanal Fishing has been established by law. This regulation is also in force around the oceanic islands and in inland waters.

This measure prevents the industrial fleet from entering the coastal zone to carry out extractive fishing operations. Compliance measures recently introduced to the artisanal fishery (artisanal extraction regime) should be monitored during future assessments to verify that this sector is complying with allocated quota regimes. The bulk of the catch of this fishery is from the artisanal sector.

The regulation has also become a conservation measure for the bulk of fishery resources that spawn near the coast and in inland waters. This regulation is directly related to the opportunities of protecting and recovering coastal pelagic resources, being of benefit mainly to anchovy and common sardine. The regulation may be temporarily suspended through authorizations for research fishing and dredging that allow the temporary entry of industrial vessels into the reserve zone, in specific areas and during specific periods.

The broader ecosystem within which the fishery occurs is considered during the management decision-making process. **Sub-clause F3.1 is met.**

F3.2 There is no substantial evidence that the fishery has a significant negative impact on the marine ecosystem

As indicated previously, the fishery has not impact on the habitat and a low impact on ETP species. Bycatch species (anchovy and Araucanian herring) represent a low volume of the fishery (and both species are managed by the authorities). The target stock is above the MSY, therefore, can be concluded that the fishery has not a significant negative impact on the marine ecosystem. **Sub-clause F3.2 is met.**

F3.3 If one or more of the species identified during species categorisation plays a key role in the marine ecosystem, additional precaution is included in recommendations relating to the total permissible fishery removals

Specific information about the role of the target species in the ecosystem seems to be scarce. However, in Chilean waters there are a number of small pelagic species (anchovy, Araucanian herring) which may have a similar role to the target species acting as connection between low and high trophic levels. Reference points used by the CCT-PP for pelagic species (see section A1.1) seem to be precautionary enough to the needs of the ecosystem. Moreover, the FIPA is currently developing a project to evaluate the reference points for small pelagics taking into consideration the precautionary approach and the ecosystem needs (FIPA N 2019-17).

Finally, the fact that sprat is above the MSY provides some confidence that this stock exploitation is relatively controlled to the point where predator species could be assumed to have sufficient food source for their needs.

Additional precaution is included in recommendations relating to the total permissible fishery removals. **Sub-clause F3.3 is met.**

References

Aranis, A., A. Gómez, K. Walker, M. Ramírez, S. Mora, L. Caballero, G. Eisele, F. Cerna, C. Valero, A. López, C. Machuca, L. Muñoz, M. Troncoso, M. Albornoz, J. Bonicelli, and U. Cifuentes. 2019b. Programa de Seguimiento de las Principales Pesquerías Pelágicas de la Zona Centro-Sur de Chile, V-XI Regiones, año 2018. Informe Final. Convenio de Desempeño, 2018. 1117 pp. IFOP. https://www.ifop.cl/wp-content/contenidos/uploads/RepositorioIfop/InformeFinal/2020/P-581146.pdf

Leal Faúndez, E., M. Zúñiga Basualto, D. Bucarey Sepúlveda, and F. Espíndola Rebolledo. 2018. Estatus y posibilidades de explotación biológicamente sustentables de los principales recursos pesqueros nacionales, 2018. Sardina austral X Región. Convenio de Desempeño 2017. Informe 2 Estatus. 141 pp. IFOP. LGPA Law on Fisheries and Aquaculture No 20.657: http://www.subpesca.cl/normativa/605/articles-764_documento.pdf SUBPESCA 2022. Estado de situación de las principales pesquerías Chilenas, ano 2021. 108 pp.
Standard clause 1.3.3.2

MarinTrust Fishery Assessment Peer Review Template

This section comprises a summary of the fishery being assessed against version 2 of the MarinTrust Standard.

Fishery under assessment	Sardina Austral / Falkland sprat (*Sprattus fueguensis*)
Management authority (Country/State)	Chilean Subsecretariat de Pesca (SUBPESCA).
Main species	Sprattus fueguensis
Fishery location	FAO 87 Div. 87.3.3 Region X (Los Lagos)
Gear type(s)	Purse seine
Overall recommendation. (Approve/ Fail)	Approve

Summary: in this section, provide any additional information about the fishery that the reviewers feel is significant to their decision.
The Transboundary Diagnostic Analysis (TDA, GEF-UNDP) approved during 2015 by the governments of Chile and Perú identified three main problems occurring in both countries: (1) non optimal use of catches in certain fisheries, (2) marine pollution caused by cities and different economic activities; and (3) high incidence of by catch of marine fauna. The recent developments on the installation of EMS aboard the industrial fleet, the progressive installation of those devices in the artisan fleet as well as the one logbooks to record interactions with marine fauna constitutes considerable progress on the third enumerated problem. Marine fauna constitute key components of marine ecosystem, so that in Chile is now possible to assess the impacts of the pelagic fishery; this fishery is an example to be followed in other fisheries around the world.
General Comments on the Draft Report provided to the peer reviewer
There have been recent changes (2019) to the fishery law which strongly promoted participation, transparency and accountability of every managed fishery in Chile. It included the inclusion of VMS data of all Chilean fishing vessels to be included in the Global Fishing Watch (GFW) system. The Humboldt Current Large Marine Ecosystem (HCLME) has recently started its second phase (2022-26), so that it will strength the cooperation of scientist of both countries (including experts of the national entities such as IFOP

and IMARPE, universities and private sector entities) in the modelling of the ocean dynamics, biology, assessment and compatible regulations of shared stocks such as Peruvian anchovy, jumbo squid, benthic resources etc.

Scientists of IFOP and private scientific entities (INPESCA, CIAM) regularly participate in different working groups of ICES, PICES, CCAMLR and SPRFMO. It is particularly important the contribution and participation in the ICES Fisheries Acoustics, Science and Technology Working Group (WGFAST), where emerging technologies and assessment methods are regularly evaluated for its use in the study of species such as the ones included in this report.

Considering the comments above, besides the compliance of the fishery with all clauses which are described in the report, the approval of the assessment is recommended.

Summary of Peer Review Outcomes

Peer reviewers should review the fishery assessment report with the primary objective of answering the key questions listed in the table below. Where the situation is more complicated, reviewers may instead answer "See Notes".

	YES	NO	See Notes
A – Fishery Assessment			
1. Has the fishery assessment been fully completed, using the recognised MarinTrust fishery assessment methodology and associated guidance?	X		
2. Does the Species Categorisation section of the report reflect the best current understanding of the catch composition of the fishery?	X		
3. Are the scores in the following sections accurate (i.e. do the scores reflect the evidence provided)?			
Section M - Management	X		
Category A Species	X		
Category B Species	n.a.		
Category C Species	X		
Category D Species	n.a.		
Section F – Further Impacts	X		

Detailed Peer Review Justification

Peer reviewers should provide support for their answers in the boxes provided, by referring to specific scoring issues and any relevant documentation as appropriate.

Detailed justifications are only required where answers given are one of the 'No' options. In other (Yes) cases, either confirm 'scoring agreed' or identify any places where weak rationales could be strengthened (without any implications for the scores).

Boxes may be extended if more space is required.

1. Is the scoring of the fishery consistent with the MarinTrust standard, and clearly based on the evidence presented in the assessment report?
Scoring agreed. Abundant evidence is described in the report and clearly noted in the references.

Certification body response
NA

2. Has the fishery assessment been fully completed, using the recognised MARINTRUST fishery assessment methodology and associated guidance?
Scoring agreed. All the clauses have been considered.
Certification body response
NA

3. Does the Species Categorisation section of the report reflect the best current understanding of the catch composition of the fishery?
Scoring agreed. Some evidence exist on misreporting though there are in place monitoring actions to measure the level of bias the assessment can have, so that the approval of the clause is justified.
Certification body response
NA

3M. Are the scores in "Section M – Management" clearly justified?	
M1.1 There is an organisation responsible for managing the fishery.	Yes
There is an organisation responsible for collecting data and assessing the fishery.	Yes
Fishery management organisations are publicly committed to sustainability.	Yes
Fishery management organisations are legally empowered to take management actions.	Yes
There is a consultation process through which fishery stakeholders are engaged in decision-making.	Yes
The decision-making process is transparent, with processes and results publicly available.	Yes

Scoring agreed.

Certification body response
NA

3A. Are the "Category A Species" scores clearly justified?
Scoring agreed.

Certification body response
NA

3B. Are the “Category B Species” scores clearly justified?
n.a.
Certification body response
NA

3C. Are the “Category C Species” scores clearly justified?
Scoring agreed.
Certification body response
NA

3D. Are the “Category D Species” scores clearly justified?
n.a.

Certification body response
NA

3F. Are the scores in “Section F – Further Impacts” clearly justified?
Scoring agreed. There is no evidence that the fishery produce impacts on the benthic region. The impact on ETP species seems negligible in general, and no impact has been recorded on vulnerable ETP species.
Certification body response
NA

Optional: General comments on the Peer Review Draft Report
Electronic devices (cameras) are progressively installed aboard the Chilean fleets in order to study, by instance, the interactions with ETP species. In next assessments it could be measured the progress of this legal requirement that seeks to identify mitigation actions regarding possible impacts of fishing in the marine habitats. In this moment the only pending issue is that one regarding that the Undersecretariat of Fisheries will establish annually the list of the target species and accompanying fauna that comply with certain requirements.
Certification body response
NA