DEEP SEA RED CRAB SOUTHWESTERN ATLANTIC OCEAN

ANNOUNCEMENT COMMENT DRAFT REPORT

April 2020

Conformity Assessment Body (CAB)	**Bureau Veritas Certification Holding SAS**
Assessment team	Carmen Morant, Luis Ambrosio, Earl Dawe
Fishery client	**COOKE URUGUAY**
Assessment Type	Announcement Comment Draft Report

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1 Glossary

Below are presented the abbreviations and acronyms used in the report. The terms defined here do not contradict terms used in the MSC-MSCI vocabulary.

Concepts and terms

ACDR	(MSC) Announcement Comment Draft Report
B_{MSY}	Biomass (population size) that enables a fish stock to deliver the maximum sustainable yield (MSY).
Blim	Level of biomass that should be avoided considering that beyond such limits, the sustainability of the stock may be in danger
Btarget	Management objective based on a level of biomass that should be achieved and maintained;
Bthreshold	Level of biomass reflecting the precautionary approach that triggers pre-agreed management actions to reduce the risk of breaching the limits. Thresholds should be set sufficiently far away from limits so that there is low probability that the limits will be exceeded
BRP	Biological Reference Points
CAB	Conformity Assessment Body (in this case Bureau Veritas)
CoC	(MSC) Chain of Custody
CPRDR	(MSC) Client and Peer Review Draft Report
CPUE	Catch per unit effort
CZ	Confluence Zone
ETP	Endangered, threatened and protected species
F	Fishing mortality
F_{MSY}	Fishing mortality at MSY
F_{target}	Management objective based on a fishing mortality rate that should be achieved and maintained.
FCP	(MSC) Fisheries Certification Process
FCR	(MSC) Fisheries Certification Requirements (superseed by FCP and FS)
FDR	(MSC) Final Draft Report
FS	(MSC) Fisheries Standard
GCR	(MSC) General Certification Requirements
HCR	Harvest Control Rules. . Decision rules that aim to achieve the target reference point and avoid the limit reference point by specifying pre-agreed management actions when $B_{THRESHOLD}$, F_{TARGET} or B_{LIM} are breached
LME	Large marine ecosystems
LTL	(MSC) Low Trophic Level
MCS	Monitoring, Control and Surveillance system
MSY	Maximum Sustainable Yield
P1, P2, P3	(MSC) Principles 1, 2, 3 respectively
PCR	(MSC) Public Certification Report
PI	(MSC) Performance Indicator
SA	(MSC) Surveillance audit
SI	(MSC) Scoring Issue
SG	(MSC) Scoring Guidepost
SSASLME	Southeast South American shelf large marine ecosystem
TAC	Total Allowable Catch
VME	Vulnerable Marine Ecosystem

UoA	(MSC) Unit of Assessment
UoC	(MSC) Unit of Certification
ZCPAU	Zona Común de pesca Argentino-Uruguaya
ZEE	Zona Económica Exclusiva

Institutions, Organizations, Bodies, Working Groups, Regulations and Agreements:

BV	Bureau Veritas
CARP	Comisión Administrativa del Río de la Plata
CITES	Convención sobre el Comercio Internacional de Especies Amenazadas de Fauna y Flora Silvestres
CMS	Convención sobre Especies Migratorias
DINAMA	
DINARA	Dirección Nacional de Recursos Acuáticos
FAO	Fisheries Department of the Food and Agriculture Organization of the United Nations
ICCAT	
MGAP	Ministerio de Ganadería, Agricultura y Pesca
MSC	Marine Stewardship Council
MVOTMA	Ministerio de Vivienda Ordenamiento Territorial y Medio Ambiente
PAN	
SNAP	Sistema Nacional de Áreas Protegidas
SRCS	Standing Committee on Research and Statistics
UICN	

2 Executive summary

To be drafted at Announcement Comment Draft Report stage

To be completed at Public Certification Report stage

The assessment process follows FCP v2.2, and the performance of the fishery will be assessed against Fisheries Standard v2.01. The MSC Reporting Template v1-02 will be used to prepare the mandatory reports along the assessment process (ACDR, CPRDR, PCDR, FDR and PCR). Current Announcement Comment Draft Report (ACDR) provides details, first to the client, and then to relevant stakeholders and public on the status of fishery at entering re-assessment, including the likely scores against all Performance Indicators (PI). In case the clients decides to go ahead with the certification process, the ACDR will be published on the MSC website together with the notification that the fishery is entering into assessment. The CAB shall allow at least 60 days for stakeholder input before the site visit takes place.

The current report was prepared by Bureau Veritas Iberia. The assessment team for this fishery was comprised of Earl Dawe (mainly responsible for assessing P1), Luis Ambrosio (mainly responsible for Principle 3) and Carmen Morant (team leader and mainly responsible for assessing Principle 2).

The main strengths of the UoA are listed below:

- Xxxx
- xxxx

On the other hand, the main weaknesses of the UoA are detailed below:

- xxx
- xxx

The Performance Indicators 1.1.1, 1.1.2, 1.2.1 and 1.2.3 do not reach 60, therefore it is an automatic fail of the fishery. In addition, two of the other P1 PIs were scored less than 80 (i.e., 1.2.2 and 1.2.4). Similar situation happens in Principle 2 since thirteen Performance Indicators do not reach SG60 level. Also, one Performance Indicator 3.2.4 do not reach 60 in Principle 3. Considering the results of the ACDR we recommend to the client that it is highly likely the fishery will not achieve the certification. However, it has to be highlighted that the ACDR is a desk study report drafted mainly with the information sent by the client (Client Document Checklist) and some gathered by the assessment team. Therefore, there might be variations on the scorings during a complete full assessment especially as a result of the consultation with stakeholders at the site visit.

3 Report details

3.1 Authorship and peer review details

To be drafted at Announcement Comment Draft Report stage

Peer reviewer information to be completed at Public Comment Draft Report stage

The team in charge of preparing the ACDR was comprised by:

Carmen Morant is a marine scientist who holds a MSc in Marine Science and a Msc in Environmental Science from the *University of Cadiz*, also a Postgraduate Degree in Environmental Management and Auditing in Marine Science and Technology from *Polytechnic University of Catalonia* (2008).
From 2011 to 2019 she worked as a freelance PAM and MMO on a wide range of projects from seismic and geographical surveys to off-shore wind farms, or oil and gas prospects.
She worked for over 6 years as a Fisheries Observer with the BFT implementing ICCAT (European) regulations, not just on board purse seiners but also in ports and BFT farms, analysis the bycatch of all different species. During these years, she collaborated during 2 years with TRAGSA for the Spanish General Marine Secretariat, carrying out regular surveys of fish stocks, monitoring number of individuals, size, weight, origin and tagging and preparing reports and evidence for the European Fishing Commission.
Carmen worked for an NGO in California targeting fishing anglers in an awareness program. This experience was complemented with her work both in Mexico and Costa Rica, where she undertook some research for local NGOs in how the local fishing industry impacted the sea turtles or the impact of whale watchers on marine mammals.
Carmen joined the team in 2020 as P2 expert.

Luis Ambrosio, holds an MSc in Biology, Marine and Environmental Sciences from the University of Alicante, and Aquaculture science from the Spanish Institute (ICADE), Spain. Since 1989, he has worked as a consultant on fisheries, aquaculture and marine biosphere. In relation to Fisheries and Aquaculture, he has collaborated for different public administrations and private companies highlighting the work carried out for the General Secretariat of Marine Fisheries of Spain (SGPM) and focused, among other issues, on the extractive activity of fleets of community interest, to the control and monitoring of fishing activities, fishing subsidies, commercialization and improvement of quality of fishery products, environmental interactions of fishing and socioeconomic impact of fishing activity and illegal fishing. On the other hand, he has participated in cooperation projects and missions in the field of fisheries and aquaculture for the Spanish Agency for International Development Cooperation (AECID), United Nations Development Program (UNDP), Latin American Organization for Fisheries Development (OLDEPESCA), International Labor Organization (ILO / ILO) and other international cooperation agents.

Regarding his work in the marine environment, it is worth highlighting those carried out for the Administration of the Government of Spain in charge of environmental matters, the Higher Council for Scientific Research and different Non-Governmental Organizations, especially WWF Spain, of which he was an advisor in issues of fisheries, aquaculture and marine protected areas. His field of work in this field has been based, among other issues, on the application of the Directive of European Habitats in the Marine Environment, the identification and characterization of Marine Protected Areas, socioeconomic studies linked to marine conservation, inventoried works of marine habitats and taxa included in International Directives and Agreements, as well as in the coordination of groups of experts for the selection and characterization of new

Marine Areas to be protected. His appropriate skills and experience serve as a Principle 3 for this assessment.

Earl Dawe, Retired in 2015 (July 24, 2015) following a 35-year research career which focused on the fisheries, population biology, and ecology of cephalopods (particularly short-finned squid) as well as crustaceans (particularly snow crab). Research effort has most recently focused on ecosystem structure and functioning, particularly the relative effects of ocean climate versus predation on finfish and crustacean resources. Career included heavy involvement in the review and formulation of scientific advice for management of shellfish resources in Atlantic Canada as well as the advisory/consultative part of managing the Newfoundland fisheries for short-finned squid and snow crab. Furthermore, an extensive list (totalling 170) of scientific/technical reports and journal articles (60 in the primary, peer-reviewed literature) on various aspects of population biology and ecology as well as fisheries biology and management of both short-finned squid and snow crab.

3.2 Version details

Details on the version of the fisheries program documents used for this assessment are presented in **table 4.2.1**, as required in the 'MSC Surveillance Reporting Template v2.01'.

Table 4.2.1 – Fisheries program documents versions

Document	Version number, date of publication (and date effective)
MSC Fisheries Certification Process	FCP v2.2(25 September 2020)
MSC Fisheries Standard	Version 2.01, 31 August 2018 (31 August 2018)
MSC General Certification Requirements	Version 2.4.1, 7 May 2019 (28 September 2019)
MSC Reporting Template	Version 1.2 , 25 March 2020 (25 September 2020)

4 Unit(s) of Assessment and Certification and results overview

4.1 Unit(s) of Assessment and Unit(s) of Certification

Bureau Veritas has confirmed that the assessed fishery is within the scope of the MSC fisheries certification since:

- This is a wild-capture fishery
- The fishery is not based on any introduced species
- It does not target species classified as 'out-of-scope' (amphibians, reptiles, birds, mammals)
- The fishery does not make use of any kind of poisons or explosives
- The fishery is not conducted under any controversial unilateral exemption to an international agreement and its management regime includes mechanisms for resolving disputes
- Uruguay has been a member of the International Labour Organization (ILO) since 1919. The country has ratified 111 conventions. The CAB is not aware that none of the fishing operators included in the UoA have been prosecuted for a forced or child labour in the last 2 years

Besides, Bureau Veritas has checked that:

- There are no MSC-certified or under-assessment overlapping enhanced fisheries.
- There are no catches of non-target species that are inseparable or practically inseparable (IPI) from target stock.
- The fishery has not previously failed an assessment and has no certificate withdrawn.

4.1.1 Unit(s) of Assessment

To be drafted at Announcement Comment Draft Report stage

Table 4.1.1 – Unit of Assessment (UoA)

UoA 1	Description
Species	Deep-sea red Crab (*Chaceon notialis*)
Target Stock	Deep-sea red crab (*Chaecon notialis*) in the southwestern Atlantic Ocean
Geographical area	EEZ URUGUAY FAO ZONE 41.2.3
Harvest method / gear	Wooden traps.
Client group	COOKE URUGUAY owns the only 2 vessels: FV Canadian Spirit and FV Maxal II with licenses for this fishery. This last one recently replaced by Southern Star I.
Other eligible fishers	There are no other eligible fishers. Just 2 licenses (FV Canadian Spirit and FV Maxal II. This last one recently replaced by Southern Star I) for this fishery in Uruguay that belong to the client.

Fishing gear and method. Geographical area.

Geryonid deep-sea crabs constitute a valuable resource throughout the world, but they are highly vulnerable to over-exploitation because of their longevity, slow growth, delayed maturity and irregular recruitment (Hines, 1990; Hastie, 1995; Steimle et al., 2001). Increasing fishing pressure due to high market prices has depleted their stocks in the last decades, even in populations with a short history of exploitation (Duggan and Lawton,2000; Gordon, 2001; Pinho et al., 2001; Steimle et al., 2001; Athiêand Rossi-Wongtschowski, 2004; Robinson, 2008).

The deep-sea red crab *Chaceon notialis* is distributed along the continental shelf edge and slope of the Southwest Atlantic Ocean(SAO), mainly in Uruguayan waters (Barea and Defeo, 1985, 1986), where its northern distributional edge occurs in contiguous Brazilian waters, occurring mostly between 200 and 1600 m depth (Gutiérrez et al.,2011). It is an endemic deep-water species ranging from 33◦00´S 43◦00´S (Spivak, 1997) and restricted to narrow ranges of salinity and low water temperature (Steimle et al., 2001; Wahle et al., 2008).

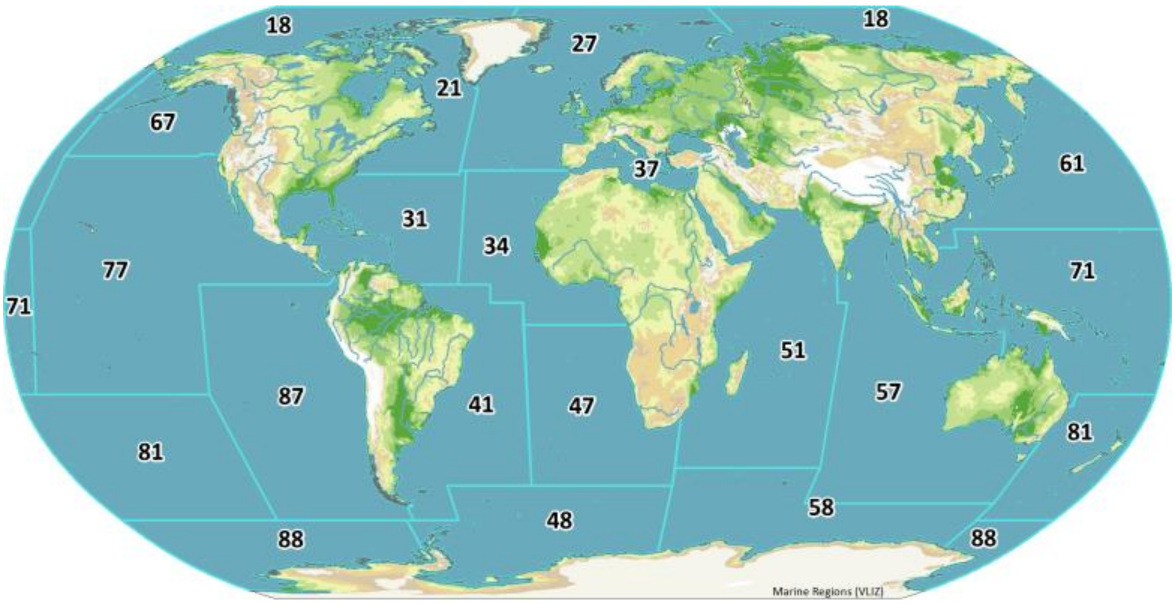


Figure XX.- COOKE URUGUAY vessels operate in the Southwest Atlantic Ocean (FAO area 41).

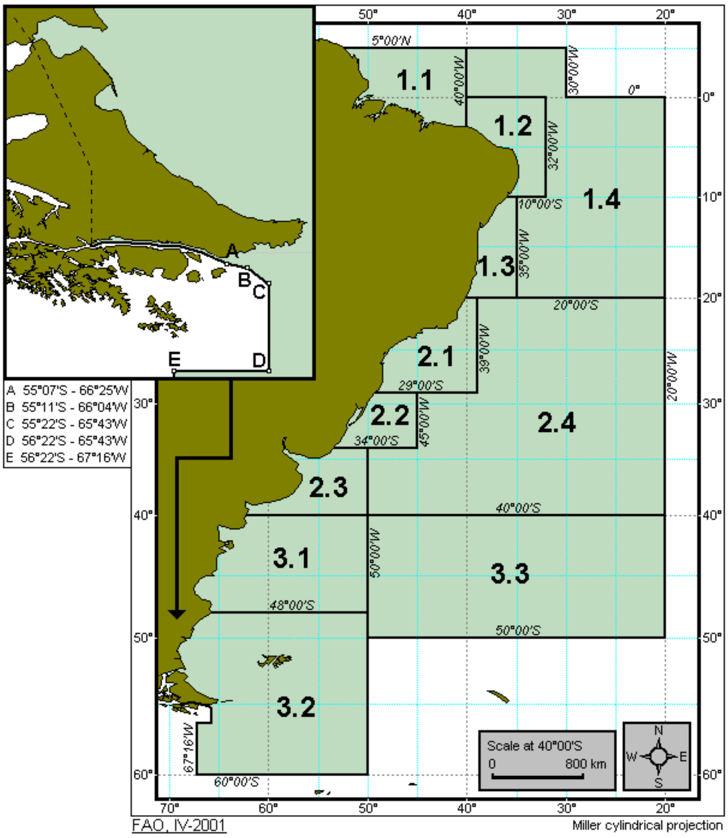


Fig. XX.- FAO area 41. The UoA operates in section 2.3.

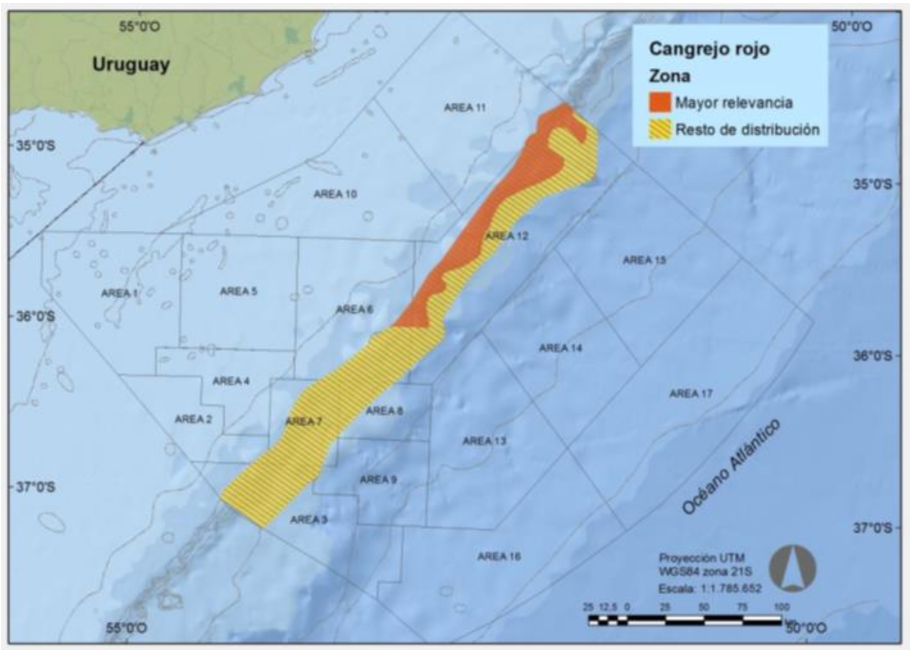


Figura XX- Área de distribución del cangrejo rojo (Chaceon Notialis) en la ZEE uruguaya y área de concentración de hembras ovígeras (indicada como Mayor relevancia). Source: Grupo ad Hoc ALTAMAR,2016.

4.1.2 Unit(s) of Certification

To be drafted at Client and Peer Review Draft Report stage

To be completed at Public Certification Report stage

The UoA defines the full scope of what is being assessed and is therefore equal to or larger than the UoC. If it is larger this means it will include "other eligible fishers". In this assessment the UoA is equal to the UoC.

4.2 Assessment results overview

4.2.1 Determination, formal conclusion and agreement

To be drafted at Final Draft Report

To be completed at Public Certification Report

4.2.2 Principle level scores

To be drafted at Client and Peer Review Draft Report

4.2.3 Summary of conditions

To be drafted at Client and Peer Review Draft Report

4.2.4 Recommendations

To be drafted at Client and Peer Review Draft Report stage

5 Traceability and eligibility

5.1 Eligibility date

5.2 Traceability within the fishery

To be drafted at Announcement Comment Draft Report stage

To be completed at Public Certification Report stage

5.2.1 Description of the tracking, tracing and segregation systems within the fishery

Table 5.2.1 – Traceability within the fishery

Factor	Description
Will the fishery use gears that are not part of the Unit of Certification (UoC)? If Yes, please describe: - If this may occur on the same trip, on the same vessels, or during the same season; - How any risks are mitigated.	No. Las dos unidades de pesca utilizan únicamente trampas (nasas). Desde la asignación de los respectivos permisos se han utilizado estas artes, quedando claramente establecido en el Permiso de Pesca y por lo tanto no es factible el uso de un arte distinto al allí definido. No existen intenciones -a corto o mediano plazo- para sustituir el arte de pesca actualmente utilizado ni causa alguna que lo pudiera justificar.
Will vessels in the UoC also fish outside the UoC geographic area? If Yes, please describe: - If this may occur on the same trip; - How any risks are mitigated.	No. Los buques operan solamente en la Zona Económica Exclusiva (ZEE) del Uruguay dentro de las isobatas establecidas comprendidas de 500 a 1.100 m.
Do the fishery client members ever handle certified and non-certified products during any of the activities covered by the fishery certificate? This refers to both at-sea activities and on-land activities.	No. La pesquería cuenta con sólo 2 unidades de pesca, dependientes de la misma empresa. Éstas unidades representan el 100% de los miembros de la pesquería a certificar. En la actualidad, no existen otras unidades pesqueras operando en el área de alcance de la pesquería.

- Transport - Storage - Processing - Landing - Auction If Yes, please describe how any risks are mitigated.	No existe posibilidad de manejo simultáneo de productos certificados y no certificados, tanto a abordo como en tierra. En el caso de actividades en tierra, sólo nos aplican las que refieren a transporte y almacenamiento. Las mercaderías son descargadas directamente de los buques y 1) cargadas directamente en contenedor de exportación (transporte en contenedor marítimo) ó 2) almacenadas transitoriamente en depósito frigorífico. En los depósitos no se almacenan otros productos derivados de la captura de Chaceon notialis. El eventual transporte desde el barco (descarga) hacia el depósito frigorífico se realiza en camiones exclusivamente contratados para dicho fin.
Does transhipment occur within the fishery? If Yes, please describe: - If transhipment takes place at-sea, in port, or both; - If the transhipment vessel may handle product from outside the UoC; - How any risks are mitigated.	No. Nunca se han realizado operaciones de transbordo tanto en altamar como en puertos. Ver artículo 20 de la Ley 19.175 de 2013.
Are there any other risks of mixing or substitution between certified and non-certified fish? If Yes, please describe how any risks are mitigated.	Consideramos nula la posibilidad de mezcla o sustitución de productos certificados y no certificados por todas las causas detalladas en los puntos anteriormente desarrollados.

5.3 Eligibility to enter further chains of custody

To be drafted at Announcement Comment Draft Report stage

To be completed at Public Certification Report stage

The report shall include a determination of whether the seafood product will be eligible to enter certified chains of custody, and whether the seafood product is eligible to be sold as MSC certified or carry the MSC ecolabel.

The report shall include a list of parties, or category of parties, eligible to use the fishery certificate, and sell product as MSC certified.

The report shall include the point of intended change of ownership of product, a list of eligible landing points, and the point from which subsequent Chain of Custody certification is required.

If the CAB makes a negative determination under FCP v2.1 Section 7.9, the CAB shall state that fish and fish products from the fishery are not eligible to be sold as MSC certified or carry the MSC ecolabel. If the client group includes other entities such as agents, unloaders, or other parties involved with landing or sale of certified fish, this needs to be clearly stated in the report including the point from which Chain of Custody is required.

Reference(s): FCP v2.1 Section 7.9

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

To be drafted at Announcement Comment Draft Report stage

To be completed at Public Certification Report stage

No IPI stocks have been identified by the CAB during the assessment.

6 Scoring

6.1 Summary of Performance Indicator level scores

To be drafted from Announcement Comment Draft Report

Principle	Component	Performance Indicator (PI)		Draft scoring range <60,60-79, ≥80
One	Outcome	1.1.1	Stock status	<60
		1.1.2	Stock rebuilding	<60
	Management	1.2.1	Harvest strategy	<60
		1.2.2	Harvest control rules & tools	60-79
		1.2.3	Information & monitoring	<60
		1.2.4	Assessment of stock status	60-79
Two	Primary species	2.1.1	Outcome	<60
		2.1.2	Management strategy	<60
		2.1.3	Information/Monitoring	<60
	Secondary species	2.2.1	Outcome	<60
		2.2.2	Management strategy	<60
		2.2.3	Information/Monitoring	<60
	ETP species	2.3.1	Outcome	<60
		2.3.2	Management strategy	<60
		2.3.3	Information strategy	<60
	Habitats	2.4.1	Outcome	<60
		2.4.2	Management strategy	<60
		2.4.3	Information	<60
	Ecosystem	2.5.1	Outcome	60-79
		2.5.2	Management	<60
		2.5.3	Information	60-79
Three	Governance and policy	3.1.1	Legal &/or customary framework	≥80
		3.1.2	Consultation, roles & responsibilities	≥80

		3.1.3	Long term objectives	**60-79**
	Fishery specific management system	3.2.1	Fishery specific objectives	**60-79**
		3.2.2	Decision making processes	**60-79**
		3.2.3	Compliance & enforcement	**60-79**
		3.2.4	Monitoring & management performance evaluation	**<60**

6.2 Principle 1

6.2.1 Principle 1 background

6.2.1.1 Outline of the target species

The family Geryonidae comprises deep-water brachyuran crabs. These are crustaceans of high commercial value with a wide global distribution: in the western Atlantic Ocean from Nova Scotia (Canada) to Mar de Plata (Argentina) and in the Eastern Atlantic from Norway to Angola; in the Indian Ocean it is recorded at Madagascar and Saint Paul Island, and in the Pacific at New Caledonia and Chile.

Red crabs live on the ocean floor and capture or collect food through the chelipeds. They generally combine predatory feeding with scavenging. The diet includes large invertebrates (echinoderms, bivalves, gastropods, polychaetes, other crustaceans) and fish.

Geryonid crabs are considered to be highly vulnerable to overexploitation because of their longevity, slow growth, delayed maturity and irregular recruitment (Hines, 1990; Hastie, 1995; Steimle et al., 2001). Therefore fishery management requires appropriate fishing regulations to ensure their sustainability (see review by Hastie, 1995).

Life cycle and biology

Four species of deep-sea red crabs (*Chaceon spp*, Geryonidae) are distributed along the continental shelf edge and slope off the Atlantic coast of South America (Boos and Araujo 2018, Manning & Holthuis, 1989). *C. notialis* may represent a species complex (Mantelatto et al., 2014) and is distributed off southern Brazil, Uruguay and Argentina (Boos and Araujo, Tavares & Pinheiro, 2011), but mainly in Uruguayan waters (Masello and Defeo 2016, Barea and Defeo, 1985, 1986), at depths ranging about 200-1600 m (Masello and Defeo 2016, Gutiérrez et al.,2011).

This species is sexually dimorphic, with males achieving larger maximum size than females. In mating pairs, males are generally about 50% larger than female mates (Masello and Defeo 2016). Mating takes place in association with the mature female molt. Fertilized eggs are attached to the female pleopods for up to nine months until the eggs hatch and are released into the water column.

The life cycle is closely associated with physical features of the distributional area in Uruguyan waters, resulting in a population that is highly structured by bathymetry and depth (Gutiérrez et al 2011, Masello and Defeo 2016). Largest crabs of both sexes are most abundant at shallowest depths (300-500 m). However, there is latitudinal sexual segregation of largest crabs, suggesting a mating migration, with largest males most prevalent in the south and largest females, including ovigerous females, most prevalent at northern latitudes (35.00 to 35.40 S) where phytoplankton biomass peaks at the convergence of warm and subantarctic water masses (Masello and Defeo 2016, Martinez and Ortega, 2007). Larvae develop through several stages before settling on the seabed, presumably at depths greater than 1200 m, where smallest trap-caught juveniles are found. There is an ontogenetic migration to progressively shallower depths with growth and maturation.

Biological characteristics and population dynamics in Uruguyan waters have recently been reviewed by Masello and Defeo (2016). Size composition of trap-caught crabs are typically unimodal for both sexes (Fig.1). Modal carapace width (CW) in the unexploited population during 1985-1986 was 95 mm for females and 115 mm for males. Maximum size was about 115 mm for females and 135 mm for males. Information on age and growth are lacking and it is uncertain whether growth is indeterminate or if there is a terminal molt, although indeterminate growth seems more likely. Size at maturity is also uncertain, but assuming indeterminate growth and using information from Brazilian waters, it is estimated that size at maturity is about 71 mm CW for females and 84 mm CW for males (Masello and Defeo 2016, Delgado and Defeo, 2004, Sant'Ana and Pezzuto, 2009), Information on age, growth, longevity and fecundity are lacking but it is generally believed that this species is long-lived with a life span of 20 years or more, slow growing with low molting frequency and not highly productive. Information on the ecology of red crabs in Uruguayan waters is also lacking, including predator-prey relationships and possible effects of ocean climate variability on productivity.

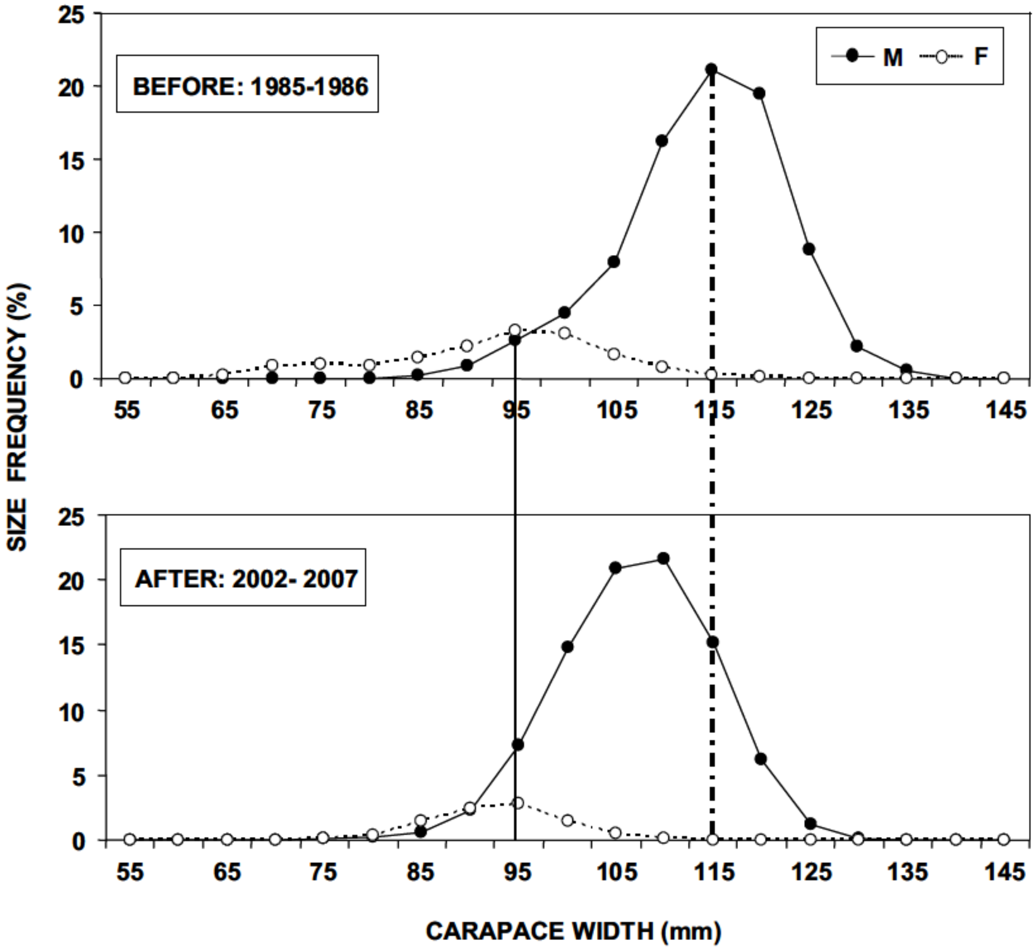


Figure 1. *C. notialis*. Size frequency distribution of males (M) and females (F) before (1985–1986) and after (2002–2007) fishery development. Modes for the unexploited period are highlighted with a dotted vertical line (M) and solid line (F). Source Masello and Defeo 2016, Figure 3.

<u>Fishery</u>

Investigations undertaken by the National Fishery Institute in the late 1970s identified a potentially harvestable stock of the species in Uruguay (Niggermeyer et al., 1990). Red crab assessments conducted in the middle 1980s along the Uruguayan EEZ estimated an exploitable biomass of nearly 22,000 t, corresponding to one of the highest biomass levels of geryonid stocks known in the whole world ocean (Defeo et al., 1991). A directed fishery for the species emerged in that country began in 1993. A management plan was established in May 2005, based mostly on the biomass dynamics of the stock, including a total allowable catch (TAC).

The limited-entry fishery is prosecuted by two factory vessels in the northern portion of the Uruguayan Exclusive Economic Zone (EEZ) (Figure 2), with the catch processed onboard. The catch is processed to produce body part products known as ‘clusters’ that collectively represent about 64% of crab live weight.

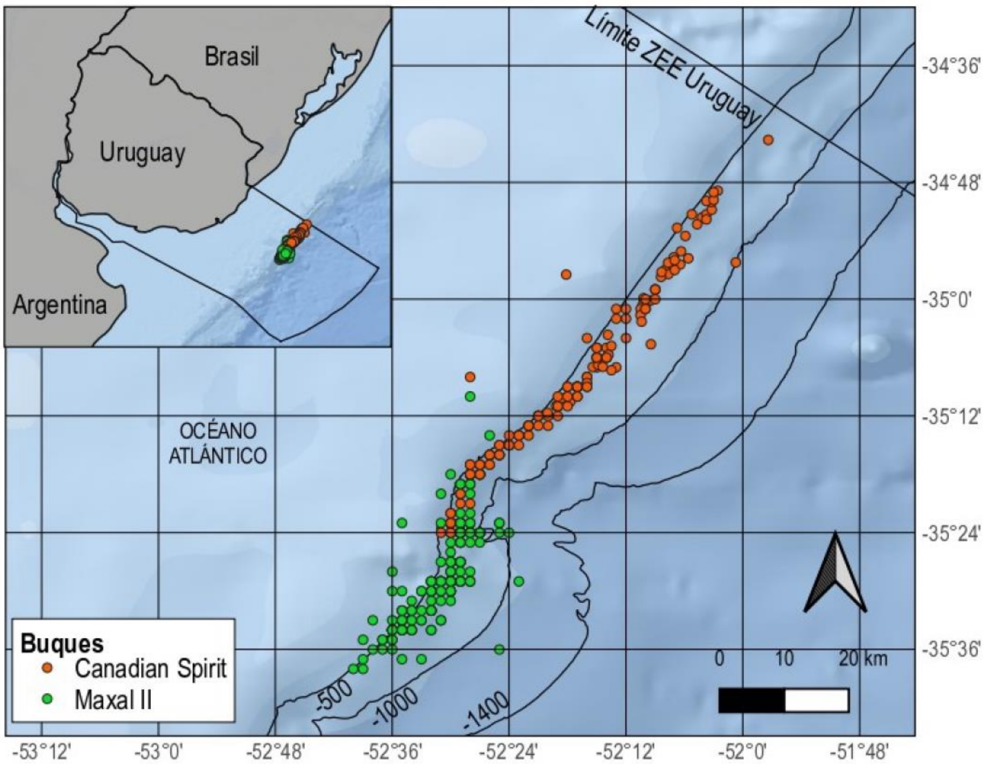


Figure 2. Location of fishing sets by the vessels Maxal II and Canadian Spirit para in 2019. Source López 2020 Figure 1.

The fishery is prosecuted using baited traps along longlines with spacing of about 27-30 m (Figure 3). The fishery has historically used traditional wooden traps with slat spacing that allows small crabs to escape (Figure 3). However the vessel operating in the southern zone (currently the Canadian Spirit) has used metal frame traps with stretched-mesh size of 100 mm, during 2017-2018 whereas the vessel operating in the northern zone (currently the Maxal II) has always used the traditional wooden traps. The Canadian Spirit first used wooden traps in 2019 (Lopez 2020)

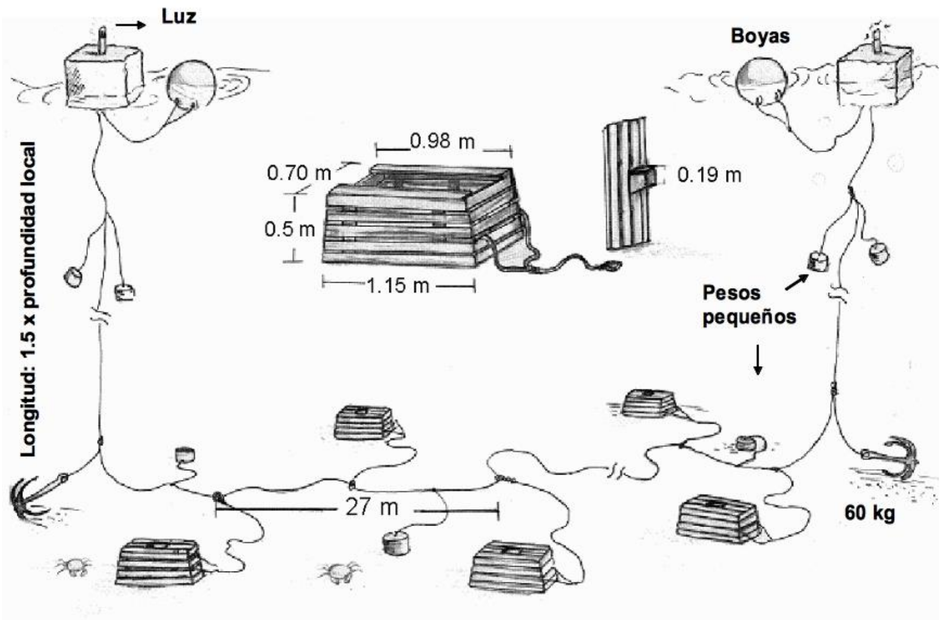


Figure 3. Schematic representation of fishing gear deployment. The fishery uses wooden traps with bait. Ground lines have an average of 200 baited traps spaced about 27 meters along the ground lines (Source: Cooke Uruguay).

The fishery operates throughout the year, although there has been considerable variation in the seasonal distribution of fishing effort by each vessel (López 2020). There has also been considerable annual variation in the distribution of fishing effort by depth and latitude.

The fishery operates under permits issued to each vessel. Annual vessel permits specify a catch allocation which represents the vessel's share of the total allowable catch (TAC). Each vessel is also limited to 200 fishing days each year (Masello 2016) Other fishery regulations are also specified in permits including prohibition to retain females, a minimum legal size of 95 mm CW and a minimum mesh size of 100 mm in conical traps. In 2007 the lat spacing of wooden traps was increased to allow a greater escape of smaller crabs and reduce the percent discarded (Lopez 2020).

There are also depth restrictions, implemented in 2017, designed to protect ovigerous females at shallowest depths in northern waters and to protect pre-recruits at greatest depths. Also, the fishery is closed during July-December below 600 m depth, to protect migrating males and females during the winter-spring mating season (Lopez 2020). Vessels are also required to maintain a vessel monitoring system (VMS) and to comply with requirements to carry observers.

Landings (converted to live weight) increased from 184 t in 1993 to 4100 t in 2000, decreasing to 1600 t in 2001 and 2002 (Figure 4) due to decreased foreign demand, which increased again from 2003 onwards (Masello and Defeo 2016). Landings declined from 2003 to about 300 t in 2015 and there was no fishery in 2016. Landings in recent years have ranged 670-1000 t during 2017-2019 (unpublished data).

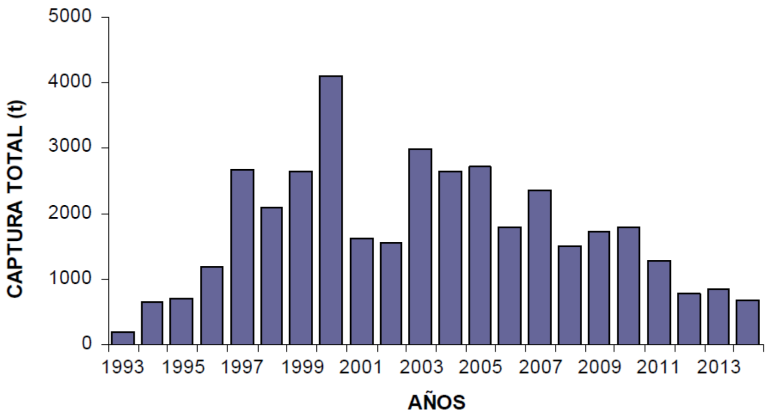


Figure 4.- Total annual catches in tons from 1993 to 2014; Source; Masello 2016.

An annual Total Allowable Catch (TAC) was implemented in 1993, and was set at 2700 t based on an estimate of the exploitable biomass from surveys conducted in 1985-1986. The TAC was determined as 10 percent of the exploitable biomass based on a recommendation that an appropriate level of exploitation should be 50% and 10% of the exploitable biomass for snow crab and red crab respectively (Defeo et al 1991 and references therein).

This TAC was maintained until 2003 when the TAC was determined based on resource assessment surveys in 2002 and 2003.This TAC was calculated based on an approach recommended for fishery resources in general, whereby the maximum sustainable catch (CMS) is approximated as 50% of the exploitable biomass after accounting for natural mortality and current year catch before the start of the survey. This exploitation level was reduced to 40% as a precautionary measure, considering the low productivity of this species. The CMS at the beginning of the year is then specified as:

$CMS = x \cdot (C + MB)$ where;

x is a constant close to 0.4 and

M is natural mortality (assumed in this case as 0.15 / year, value used by Defeo et al., 1989, 1991, based on the precautionary principle of fisheries

The constant maximum yield (RMC) was then determined as two thirds of the CMS (Defeo & Masello 2008), as recommended for fisheries with increasing levels of discarding (Defeo et al 1991). The RMC was estimated as 1300 t during 2002-2004 and was revised to 1500 t based on surveys during 2005-2007 (Defeo and Masello 2008). The TAC was set at a range of 1300-1500 t for 2002-2016 and at 1300 t since 2017 (Lopez 2017, 2020).

Stock Assessment

The exploitable biomass has been estimated based on research surveys using baited traps that have been conducted during 1985 and 1986 (Defeo et al 1991) as well as during 6 years within the period 2002-2010 (Gutiérrez et al 2011, Masello and Defeo 2016), Total and exploitable biomass were estimated from survey data by applying estimates of the effective fishing area (EFA) of baited traps (Arena et al 1994, Defeo et al 1991, Gutiérrez et al 2011).

This method was applied to estimate the total area fished by a line of traps, based on an estimate of the average area over which a trap catches 100% of all crabs (the effective area fished, EFA). This estimate is then extrapolated across the entire area of distribution of the resource to estimate total vulnerable biomass and exploitable biomass. The estimate of trap EFA was based on a circular area of trap influence with a radius of 30 m, considered to be appropriate for this species (Defeo et al 1991).

An additional estimate was provided in 2005 using a Gaussian likelihood-based approach that provided biomass estimates that agreed well with those from the EFA-based approach (Gutiérrez et al 2011). Comparison of biomass estimates from a common season (spring) and assessment approach (EFA application) indicate that the total biomass in 2005 (about 54,000 t, Gutiérrez et al 2011) was more than three times higher than it was in 1985 (about 15,000 t, Defeo et al 1991).

Changes in exploitable biomass have been inferred from research survey CPUE trends (Masello and Defeo 2016). CPUE was lowest in 1985, before the fishery began and was about three times greater during 2002-2007 while the resource was being exploited (Figure 4). This implies that abundance and biomass are controlled by ecological processes, with the fishery having little effect. However, there is concern that the fishery may be negatively affecting the population, as reflected by the decrease in individual weight since the fishery began (Figure 4). Although mean weight decreased in both sexes after the fishery began, modal size decreased for males but not for females (Figure 1) suggesting that the fishery may be selectively removing largest males. This is consistent with the observation that non-ovigerous females were larger than ovigerous females, suggesting that sufficiently large males were unavailable to mate females. This is further supported by evidence of sperm limitation in females (Masello and Defeo 2016). The decline in size of females following onset of exploitation suggests an effect of fishery-induced mortality on largest females caught and released.

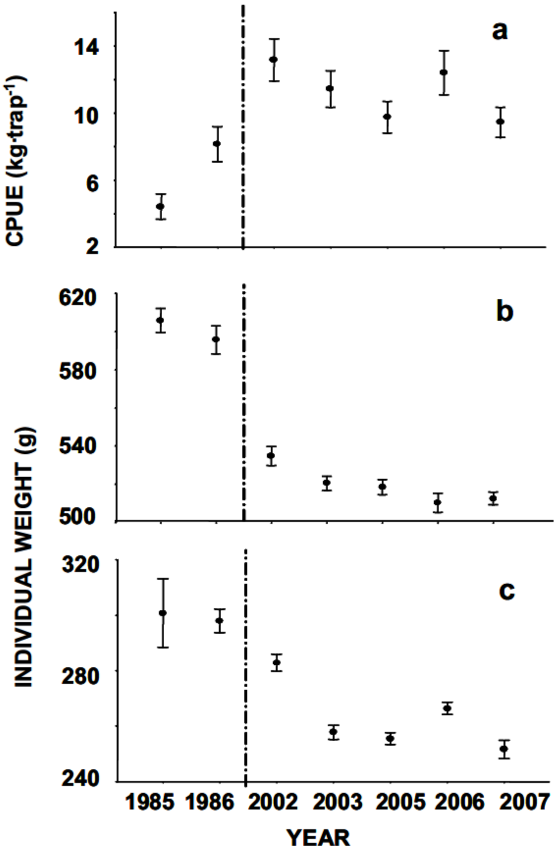


Figure 4*. Chaceon notialis*: (a) relative abundance (CPUE: kg trap−1: mean ± SE) before (1985–1986) and after (2002–2007) the onset of the fishery. Temporal fluctuations in individual weight (mean ± SE) for: (b) males; and (c) females. The dotted vertical line separates the years before and after fishery operations. Note the different scale in the Y–axes for b and c. Source; Masello and Defeo 2016 Figure 2.

Information from research surveys on catch rates versus biological characteristics provide conflicting impressions of resource status and effects of the fishery. Survey CPUE estimates suggest an increase in biomass following onset of exploitation whereas a decline in mean size suggests a decrease in biomass (Figure 4). The assessment team feels that the biomass actually declined due to exploitation, as might be expected. The virgin biomass of exploitable males was likely underestimated because a hypothetical minimum legal size (MLS) of 110 mm CW was used in the 1985-86 exploitable biomass estimates, as opposed to the regulated MLS of 95 mm, used in 2002-2007 estimates. Also, differences in gear type likely biased any comparison in that conical mesh traps were used in the 1985-86 surveys as opposed to wooden traps in the subsequent surveys. Also trap separation along longlines was changed from 20 m in the 1985-86 surveys to 27 m in the subsequent surveys.

Interpretation of biomass changes from the surveys in 2002-2010 is highly uncertain because of lack of agreement between the biomass estimates and the catch rates (CPUE) from the same sampling stations (Figure 5). The CPUE declined by half from 2002-2005 while the exploitable biomass estimate tripled. Such a sharp difference in trend suggests violation of assumptions in application of the method such as constant trap EFA and/or constant area of distribution. The EFA may change among years due to changes in physical factors such as ocean currents and/or other factors (eg temperature) that can affect bait effectiveness.

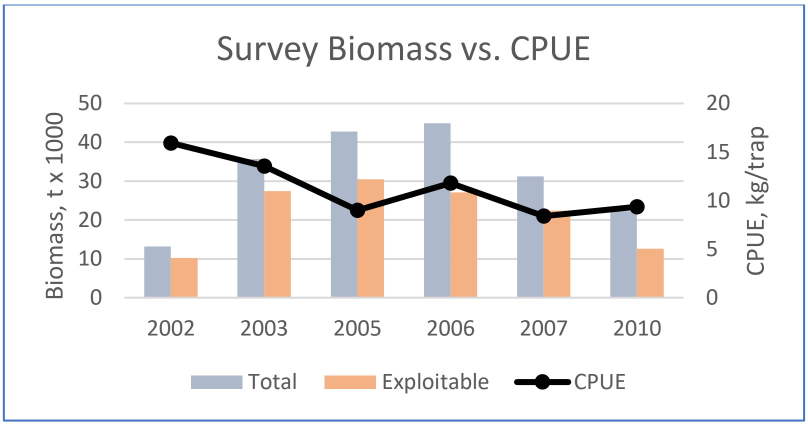


Figure 5. Comparison of survey catch rate with total and exploitable biomass by year. Note the 2010 survey was incomplete. Source; based on data provided by the client.

Lopez (2020) presented information on some fishery and biological indices from the 2017-2019 fishery based on at-sea sampling by observers. That study showed that the percentage of the catch discarded increased from 2017-2019 for both fishing vessels (Figure 6), due primarily to a substantial progressive increase in catch and discarding of females (Figure 7). This increase in catching and discarding of females is despite a new depth restriction in 2019 limiting fishing to depths of 500-1100 to (in part) protect females that are most abundant at shallower depths.

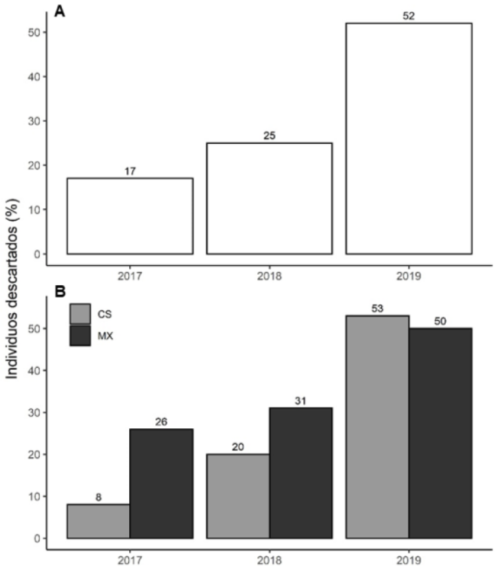


Figure 6. Discarded individuals expressed in annual percentages (A) and percentages for each ship for each year (B). CS: Canadian Spirit. MX: Maxal II. Source; Lopez 2020 Figure 32.

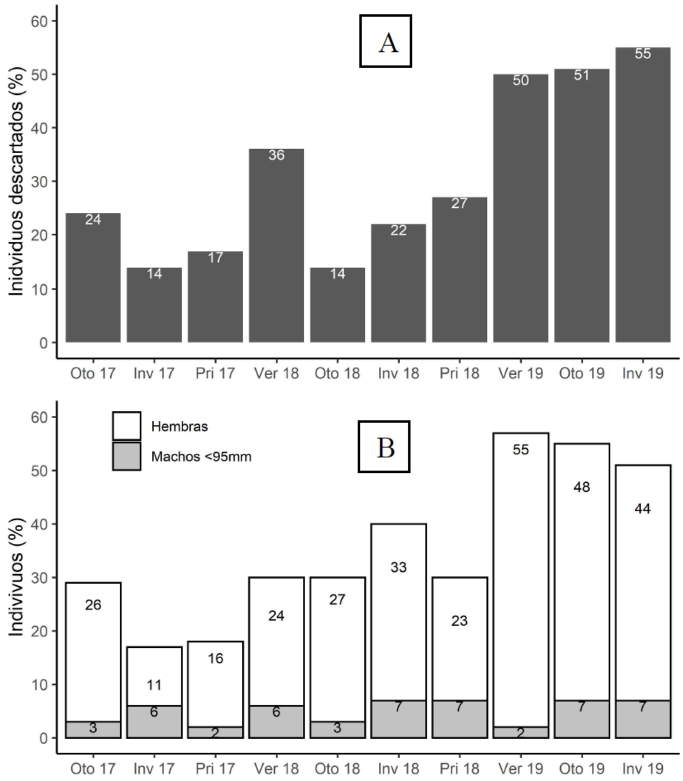


Figure 7. A: Discarded individuals expressed in percentages with respect to each season and year. B: Percentages of males with carapace widths less than 95 mm and total females with respect to each season and year extracted from the biological parameters recorded in the sample of observers on board Source; López 2020. Figure 33.

This increase in discarding, especially in 2019, was far more prevalent for females than males (Figure 6) and was related to an increase in the proportion of small females in the 'total' population of crabs larger than about 80 mm CW (Figure 8). This could not be attributed to increased recruitment to the population because it was not evident in males (Figure 8). Rather, it was suggested that this increase in catching and discarding of females in 2019 may have been related to annual changes in vessel specific trap design and possible change in spatial distribution of females

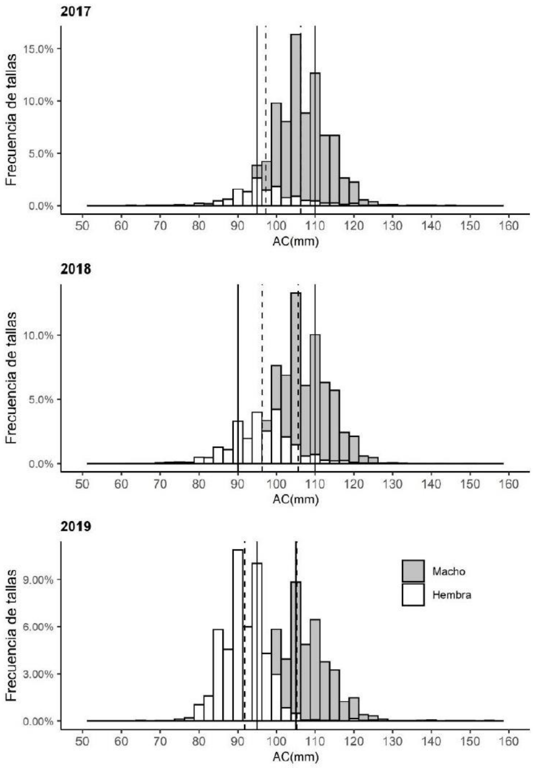


Figure 8. Size frequency distributions (carapace width) for females and males for the period 2017-2019. Dotted line: mean. Solid line: mode

<u>Stock status</u>

The current status of the stock is highly uncertain. There is no reliable annual biomass index for regularly monitoring stock status. CPUE estimates from the fishing vessel logbooks are not considered reliable, as they reflect extraction efficiency rather than abundance or biomass. Fishery CPUE is strongly biased by annual variation in distribution of fishing effort across months, depth and latitude, as well as annual differences in soak time (López 2020). Additional biases include differences in fishing vessel capability and inconsistency in fishing gear. For example, the vessel Canadian Spirit (CS) initially used metal frame traps with 100 mm stretched mesh in 2017-2018, while the other vessel used the traditional wooden traps. Wooden traps constructed for the CS in 2019 may have differed in design (eg. lat spacing) from those used by the other vessel (López 2020).

Also there has been no complete research assessment survey or biomass estimate using a consistent approach (ie. the EFA method) since 2007. Biomass was assessed in 2009 based on three analytical models that agreed well and indicated a much lower exploitable biomass (about 1000-1100 t) than in the previous surveys (Masello and Defeo 2010 Masello and Martinez. 2011). Furthermore, there is no reliable annual index of abundance or biomass. There is also no index of fishery effects on the population based on biological characteristics. Trends in any biological metric would be subject to the same biases that affect CPUE. Lopez (2020) noted that there is high variability in the estimates of biological indicators such that it is not possible to establish clear patterns or trends on a seasonal or annual basis. Despite this, concern was expressed that male size was smaller from the 2017-2019 fishery than from the 2002-2007 surveys and that this could be due to over-exploitation by the fishery.

The inability to annually monitor fishery effects is concerning because Geryonid deep-sea red crabs are long-lived and slow growing with irregular episodic recruitment, such that they are considered to be highly susceptible to over-exploitation (Gutiérrez et al 2011).

6.2.2 Catch profiles

6.2.3 Total Allowable Catch (TAC) and catch data

The report shall include a Total Allowable Catch (TAC) and catch data table using the table below. If possible, a separate table should be provided for each species or gear.

Table 7.2.1 Total Allowable Catch (TAC) and catch data

	Fishing season	Volume (tons)
TAC	**2018/19**	N/A
UoA share of TAC	**2018/19**	N/A
UoA share of total TAC	**2018/19**	N/A
Total green weight catch by UoC	**2018/19**	**77.9**
Total green weight catch by UoC	**2017/18**	**64.9**

6.2.4 Principle 1 Performance Indicator scores and rationales

PI 1.1.1 – Stock status

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue		SG 60	SG 80	SG 100
a	Stock status relative to recruitment impairment			
	Guide post	It is **likely** that the stock is above the point where recruitment would be impaired (PRI).	It is **highly likely** that the stock is above the PRI.	There is a **high degree of certainty** that the stock is above the PRI.
	Met?	**No**	**No**	**No**
Rationale				

The management strategy for this fishery includes several management measures designed to safeguard recruitment. These measures protect female crabs and a portion of mature males from exploitation, through a minimum legal size regulation of 95 mm CW and prohibition to retain females. There are additional regulations that limit total fishing effort, fishing depths and season. Exploitation is regulated by TAC, which is based on harvesting a percentage (exploitation rate) of an estimate of the exploitable biomass. This exploitation rate is intended to optimize the yield while at the same time reduce the risk of over exploiting the resource. Biomass is estimated during some years, but not annually and there has been no estimate of biomass in the past decade. There is concern that it was advised in 2010 that if the 2009 catch level of 1300 t is maintained there would be a considerable decrease in biomass, with some probability of resource collapse in 10 years (Masello and Defeo 2010); a TAC of 1000 t was recommended for 2011 but annual TACs have since remained above that level.

Furthermore, there are no formally established reference points, so the point of recruitment impairment (PRI) is unknown. Inferences based on comparison of 2002-2007 biomass estimates to the virgin biomass of 1985-1986 are not possible due to severe biases in any such comparison that likely resulted in underestimation of the virgin biomass. There is also high uncertainty in inferring recruitment from biomass trends because trends in the survey catch rates (CPUE) do not agree with trends in biomass (Figure 5).

Furthermore, there has been no complete survey or biomass estimate since 2009 and there is no reliable biomass index (eg. fishery CPUE) for regularly monitoring changes in biomass. Traps used do not capture small crabs so that there is no indication of incoming recruitment and there is no information on effects of ocean climate variation on recruitment. There is also concern that largest females may have been unmated during 2002-2007 due to fishery removal of largest males. There is also concern regarding the increased level of discarding of females in recent years (Lopez 2020). Therefore, it cannot be concluded that it is likely that the stock is presently above the PRI. **Accordingly SG 60 is not achieved**.

b	Stock status in relation to achievement of Maximum Sustainable Yield (MSY)			
	Guide post		The stock is at or fluctuating around a level consistent with MSY.	There is **a high degree of certainty** that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.
	Met?		**No**	**No**
Rationale				

There are no formal reference points but a target exploitation rate was established by following a generic approach based on a proxy B_{MSY} level that is estimated from the survey exploitable biomass estimates. This approach is used to determine the TAC based on two thirds of the proxy B_{MSY} level due to concern for the low productivity of this species and high level of discarding. This approach was applied to the exploitable biomass estimate from the 2002 survey to determine a TAC for 2003 as a range of 1300-1500 t. The TAC has not been adjusted since then, remaining high relative to that recommended for 2011 (Masello and Defeo 2010).

There is high uncertainty regarding the B_{MSY} level as it is based on a generic approach recommended for fishery resources in general, and is then reduced by a subjectively determined proportion (0.66), as a precautionary measure. This uncertainty is further increased because of concern that survey biomass estimates do not agree with CPUE from the same stations, possibly due to violation of assumptions in the application of the assessment model. In addition, there is uncertainty regarding the precision of biomass estimates due to broad confidence intervals that were about as large as the mean estimate in 2005 (Gutiérrez et al 2011). Most importantly, there has been no complete survey or biomass estimate since 2009 and there is no reliable biomass index (eg. fishery CPUE) for regularly monitoring changes in biomass. Recent trends in biomass and fishing mortality are unknown. Therefore, it cannot be concluded that the stock is at or fluctuating around a level consistent with MSY. **Accordingly SG 80 is not achieved.**

References

Gutiérrez, N.L., Masello, A., Uscudun, G., Defeo, O., 2011. Spatial distribution patterns in biomass and population structure of the deep sea red crab *Chaceon notialis* in the Southwestern Atlantic Ocean. Fish. Res. 110, 59–66. https://doi.org/10.1016/J.FISHRES.2011.03.012

López, A. 2020. Análisis espacio-temporal de la pesquería de *Chaceon notialis* (Cangrejo rojo) en Uruguay en el período 2017-2019. Informe técnico: Análisis espacio temporal de Chaceon notialis (2017-2019)

Masello and Defeo 2010. Pesquería de cangrejo rojo Chaceon notialis *en Uruguay: resultados de investigaciones recientes y propuestas de manejo para 2011. DINARA, Memorando, 3pp.*

Stock status relative to reference points			
	Type of reference point	Value of reference point	Current stock status relative to reference point
Reference point used in scoring stock relative to PRI (SIa)	*Insert type of reference point e.g. B_{LOSS}.*	*Include value specifying units e.g. 50,000t total stock biomass.*	*Include current stock status in the same units as the reference point e.g. 90,000/B_{LOSS} = 1.8.*
Reference point used in scoring stock relative to MSY (SIb)	*Insert type of reference point e.g. B_{MSY}.*	*Include value specifying units e.g. 100,000t total stock biomass.*	*Include current stock status in the same units as the reference point e.g. 90,000/B_{MSY} = 0.9.*

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	Information available is sufficient to score, but more recent information is sought regarding an index of annual biomass that might be developed from fishery CPUE data

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**NA at this stage**
Condition number (if relevant)	**NA at this stage**

PI 1.1.2 – Stock rebuilding

PI 1.1.2		Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe		
Scoring Issue		SG 60	SG 80	SG 100
a	Rebuilding timeframes			
	Guide post	A rebuilding timeframe is specified for the stock that is the **shorter of 20 years or 2 times its generation time**. For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.		The shortest practicable rebuilding timeframe is specified which does not exceed **one generation time** for the stock.
	Met?	**No**		**NA**
Rationale				

There is no information available regarding a rebuilding plan or timeframe. The most recent TAC remains above that recommended for 2011, implying that there is no rebuilding plan or strategy in place. Therefore **SG 60 is not met.**

b	Rebuilding evaluation			
	Guide post	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe.	There is **evidence** that the rebuilding strategies are rebuilding stocks, **or it is likely** based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the **specified timeframe**.	There is **strong evidence** that the rebuilding strategies are rebuilding stocks, **or it is highly likely** based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the **specified timeframe**.
	Met?	**No**	**No**	**No**
Rationale				

As noted above there appears to be no rebuilding strategy in place. Furthermore, there has been no survey or biomass estimate during the past decade, and there is no index available for monitoring annual changes in the status of the stock. There is also no reliable index of biological characteristics from which fishery effects might be inferred. **Therefore SG 60 is not met**.

References

MSC Fisheries Standard v2.01

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**NA at this stage**
Condition number (if relevant)	**NA at this stage**

PI 1.2.1 – Harvest strategy

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring Issue		SG 60	SG 80	SG 100
a	Harvest strategy design			
	Guide post	The harvest strategy is **expected** to achieve stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy **work together** towards achieving stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and is **designed** to achieve stock management objectives reflected in PI 1.1.1 SG80.
	Met?	**Yes**	**Yes**	**No**
Rationale				

The primary objectives of the management strategy are to maintain the reproductive potential of the resource, achieve a sustainable commercial harvest of legal-sized crabs, and minimize waste through the proper handling and release of small crabs. These objectives are addressed through a host of regulatory measures that include prohibition to retain females, a minimum legal size limit for males and TAC allocation to control exploitation rate. Other regulations that contribute to controlling exploitation rate include limited entry, individual vessel quotas with designated fishing areas and rigorous monitoring and enforcement of regulations. Regulation of allowable fishing depth was recently implemented to protect ovigerous females at shallow depths and smallest crabs at greatest depths. This comprehensive harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG80. Therefore, **SG 60 is met.**

The key stock management tool for the fishery is to establish a total annual catch (TAC) based on exploitation rates estimated in part from exploitable biomass estimates derived from research trap surveys. The harvest strategy is responsive to the state of the stock in that annual TACs are intended to be adjusted annually in response to changes in stock indicators. This is not achieved in practice on an annual basis because of the infrequent execution of research trap surveys that estimate exploitable biomass and unavailability any other biomass index. However this represents a limitation of data availability and not a flaw in the harvest strategy itself. It can be argued that the TAC has been effective in regulating fishery removals because the retained catch has not exceeded the TAC since 2011 (Figure 9).

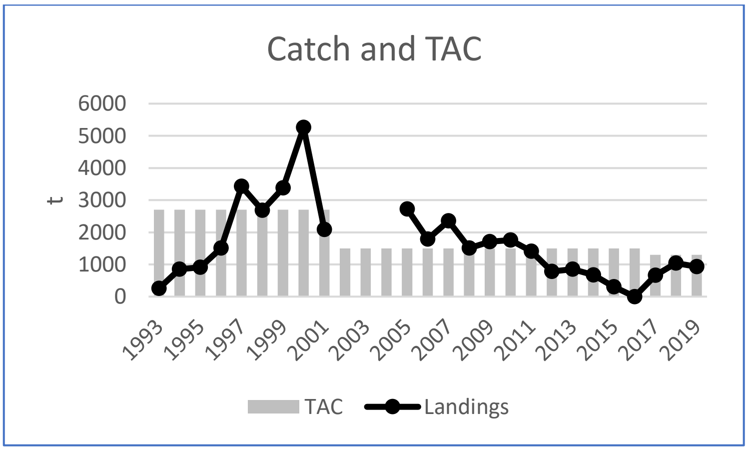


Figure 9. Annual trend in TAC and retained catch; Source; based on data provided by client

Therefore it can be concluded that TAC regulation works together with the other regulations described above towards achieving stock management objectives reflected in PI 1.1.1 SG80. Therefore, **SG 80 is achieved**.

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

The harvest strategy consists of a suite of regulations that was designed to work together to achieve stock management objectives reflected in PI 1.1.1 SG80. However, there is high uncertainty in the estimates of exploitable biomass from surveys due to possible bias as well as high uncertainty in the precision of the estimates. Also, there has been no complete research survey or biomass estimate since 2009 so changes in biomass and exploitation rate are unknown. In addition, there is no other indicator of biomass. Therefore, recent trends in biomass and exploitation rate are unknown. Despite these uncertainties, the TAC has remained high in recent years relative to that recommended for 2011. Concern has been expressed that a reduction in mean individual size may be a result of over-exploitation. This concern is supported by the high incidence of unmated females and recent increase in the level of discarding of females. Therefore, it cannot be concluded that the harvest strategy is likely to work.

Accordingly SG 60 is not met.

c	Harvest strategy monitoring			
	Guide post	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	**No**		

As noted above, there has been no complete research survey or biomass estimate since 2009 so changes in biomass and exploitation rate are unknown. In addition, there is no other indicator of biomass. Therefore, it cannot be concluded that monitoring is in place that is expected to determine whether the harvest strategy is working. Thus **SG 60 is not met.**

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

No information was provided as to the frequency of review of the harvest strategy. However, there is some evidence that it has been reviewed and improved on several occasions. This evidence includes the increase in lat size in 2007 to reduce discarding and the more recent fishing depth regulations to protect ovigerous females and pre-recruits**. Thus SG 100 is met.**

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

This Scoring Issue need not be scored since the target species is not a shark.

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

No information was provided regarding the review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock. Sources of such unwanted catch include catch of females and small males that are discarded with an associated mortality level that is unknown but believed to be high. Also, the fishery extends throughout the year, including the molting season and recently-molted males are commonly caught. It is unknown whether such recently-molted males with low meat yield, and presumably low market value, are discarded, as is the case in some other crab fisheries such as Canadian snow crab (Mullowney et al 2017). Ghost-fishing is also a concern for unwanted catch because of the high incidence of lost traps. Traps lost in the fishery may represent a substantial source of mortality because they may be 'self-baiting' (captured crabs die and serve as bait) and continue to fish for a prolonged period.

Vessel	**Fishing trips (days) 2017**	**Lost traps 2017**	**Fishing trips (days) 2018**	**Lost traps 2018**	**Fishing trips (days) 2019**	**Lost traps 2019**
Canadian Spirit	5 (118 days)	50 (metallic)	9 (214days)	90 (metallic)	6 (138 days)	552(wooden)
Maxal	4 (96 days)	384(wooden)	9 (186 days)	744(wooden)	9 (164 days)	656(wooden)
Total number of traps lost/year		**434**		**834**		**1208**

The table above (provided by the client) indicates that wooden traps are more frequently lost than metal frame mesh traps and that the total number of lost traps almost tripled from 2017-2019. This source of mortality has not been quantified.

However, a new regulation regarding fishing depth was implemented recently to prohibit fishing at shallowest depths so as to protect ovigerous females that are most abundant at such depths and to protect smallest males at greatest depths. It also appears that a trap slat spacing regulation was changed after 2006 to reduce capture and discarding of females and small males. This implies that there has been a recent review of the practicality of alternative measures to minimise UoA-related mortality of unwanted catch and so **SG 60 is met.**

However no information has been provided as to whether there is a regular review of the potential effectiveness and practicality of such alternative measures. Therefore **SG 80 is not met.**

References

Mullowney, D., Coffey, W., Evans, G., Colbourne, E., Maddock Parsons, D., Koen-Alonso, M., and N. Wells. 2017. An Assessment of Newfoundland and Labrador Snow Crab (Chionoecetes opilio) in 2015. DFO Can. Sci. Advis. Sec. Res. Doc. 2017/032. v + 179 p.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**NA at this stage**
Condition number (if relevant)	**NA at this stage**

PI 1.2.2 – Harvest control rules and tools

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

Using the definition of HCRs as the adjustment of one or several management measures based upon an evaluation of an indicator against an established reference point, there is one key HCR in place that serves to effect changes in fishery removals and/or the exploitation rate. Changes in the exploitable biomass from trap surveys trigger the adjustment of the TAC in order to reduce or increase exploitation rate if required.

In addition there are technical measures or management approaches in place which minimize the exploitation rate on females and thus protect the reproductive capacity. The minimum legal size of 95 mm CW is intended to ensure that there are sufficient males with which the females can mate. It is generally understood by all stakeholders in the fishery that technical conservation measures and other management regulations may be adjusted in response to significant changes in the stock or fishery indicators; an example is the recent regulation limiting allowable fishing depth to protect ovigerous females at shallowest depths, in response to a high incidence of discarding of females. **Therefore, SG 60 is met.**

The TAC regulation represents a well-defined HCR in that it is based upon a pre-agreed decision rule and a well-established objective analytical method to calculate TAC based on the most recently estimated exploitable biomass together with other variables. However, it does not **ensure** that the exploitation rate is reduced as the PRI is approached because there is no established LRP and so the point of recruitment impairment is not known. Furthermore, there has been no survey or estimate of exploitable biomass since 2009 so recent stock status is unknown and there has been no basis for calculating or adjusting the TAC. Also, it appears that the TAC that was set in 2003 based on the 2002 survey has not since been adjusted based on subsequent surveys. Therefore **SG 80 is not met.**

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

The primary HCR of adjusting the TAC based on results of trap surveys is not robust to the high uncertainty in the survey exploitable biomass estimates. This uncertainty is reflected by lack of agreement between the biomass estimates and the catch rates (CPUE) from the same sampling stations (Figure 5). The CPUE declined by half from 2002-2005 while the exploitable biomass estimate tripled. Such a sharp difference in trend suggests violation of assumptions regarding application of the assessment model such as constant trap EFA and/or constant and known area of distribution. The EFA may change among years due to changes in physical factors such as ocean currents and/or other factors (eg temperature) that can affect bait effectiveness. There is further uncertainty related to strong seasonal effects on survey biomass estimates associated with seasonal migrations; the 2002 survey was conducted in autumn whereas subsequent surveys were conducted in spring (Defeo et al 1991). There is further uncertainty related to differences among surveys in spatial coverage as well as uncertainty as to the total spatial distribution of the resource (Defeo and Masello 2002, 2008; Masello and Defeo 2010). In addition, there is uncertainty regarding the precision of biomass estimates due to broad confidence intervals that were about as large as the mean estimate in 2005 (Gutiérrez et al 2011). These uncertainties are heightened because there is no other index of biomass against which to validate survey biomass trends.

Accordingly it is not likely that the primary HCR is robust to the main uncertainties and **SG 80 is not met.**

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

The primary HCR is adjustment of the TAC to control the exploitation rate and the annual level of fishery removals and the tool for implementing this HCR is the trapping survey that estimates the exploitable biomass. This HCR is appropriate in principle and there is some evidence that it has been effective in controlling exploitation, in that the annual catch has not exceeded the TAC since 2011 (Figure 9). Therefore, **SG 60 is met.**

However, there has been no survey or estimate of exploitable biomass since 2007 so there has since been no basis for calculating or adjusting the TAC. Also, it appears that the TAC that was set in 2003 based on the 2002 survey has not since been adjusted based on subsequent surveys. Changes in biomass and exploitation rate over the past 13 years are unknown. Therefore, it cannot be concluded that the available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs. Accordingly **SG 80 is not met.**

References

Defeo, O., V. Little & L. Barea. 1991. Stock assessment of the deep-sea red crab *Chaceon notialis* in the Argentinian - Uruguayan Common Fishing Zone. Fisheries Research 11: 25-39.

Defeo, O. and A. Masello. 2002. Nueva evaluación sobre cangrejo rojo. Memorando 31/07/02. 3 pp.

Defeo, O. and A. Masello. 2008. Situación actual de la pesquería de cangrejo rojo *Chaceon notialis* en Uruguay: abril 2008

Gutiérrez, N.L., Masello, A., Uscudun, G., Defeo, O., 2011. Spatial distribution patterns in biomass and population structure of the deep sea red crab *Chaceon notialis* in the Southwestern Atlantic Ocean. Fish. Res. 110, 59–66. https://doi.org/10.1016/J.FISHRES.2011.03.012

Masello, A and O. Defeo 2010. Pesquería de cangrejo rojo *Chaceon notialis* en Uruguay: resultados de investigaciones recientes y propuestas de manejo para 2011. DINARA, Memorando, 3pp.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**60-79**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**Not applicable at this stage**
Condition number (if relevant)	**Not applicable at this stage**

PI 1.2.3 – Information and monitoring

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

Some information is available on productivity (size at maturity) and fleet composition (limited entry fishery with two vessels). Therefore, **SG 60 is met.**

However, the information available is not sufficient to support the harvest strategy, primarily because information on productivity is insufficient. There is no information on trends in biomass or biological indicators over the past decade. There is also no information on recruitment due to the size selectivity of the traps used in surveys and in the fishery and there is no information on effects of ocean climate variability on recruitment. Information is uncertain regarding fecundity, growth rate (including molting frequency), and longevity.

Information on stock structure is also insufficient. It is uncertain whether the UoA is exploiting a single stock, stock complex, or a species complex (Mantelatto et al., 2014)

Therefore **SG 80 is not met.**

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

Indicators of abundance from surveys have only been estimated for 6 years since the directed fishery began and have not been available since 2009. There is no other index of abundance, either from fishery-dependent or fishery-independent sources. There is also no unbiased index for any biological characteristic from which abundance trends might be inferred.

The assessment team feels that abundance should be monitored on an annual frequency since this low-productivity species is considered to be highly vulnerable to over-exploitation. Therefore, no indicator is available and monitored with sufficient frequency to support the harvest control rule. **Accordingly SG 60 is not met.**

c	Comprehensiveness of information			
	Guide post		There is good information on all other fishery removals from the stock.	
	Met?		**No**	
Rationale				

It has been noted that there are significant incidental catches of red crab in the fisheries for rouget and *Merluza negra* (Masello and Defeo 2010) but no quantitative estimates are available. No other information has been provided on other fishery removals from the stock. This issue is complicated by uncertainty as to whether the UoA is exploiting a single stock, stock complex, or a species complex (Mantelatto et al., 2014).

Therefore, **SG 80 is not met.**

References

Masello, A and O. Defeo 2010. Pesquería de cangrejo rojo *Chaceon notialis* en Uruguay: resultados de investigaciones recientes y propuestas de manejo para 2011. DINARA, Memorando, 3pp.

Mantelatto, F. L., Pezzuto, P. R., Masello, A., Rossi Wongtschowski C. L., Silva Hilsdorf, A.W., Rossi, N. 2014. Molecular análisis of the comercial deep-sea crabs *Chaceon ramosae* and *Chaceon notialis* (Brachyura, Geryonidae) reveals possible cryptic species in the South Atlantic. Deep-Sea Research I 84:29–37.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**Not applicable at this stage**
Condition number (if relevant)	**Not applicable at this stage**

PI 1.2.4 – Assessment of stock status

PI 1.2.4	There is an adequate assessment of the stock status			
Scoring Issue		SG 60	SG 80	SG 100
a	Appropriateness of assessment to stock under consideration			
	Guide post		The assessment is appropriate for the stock and for the harvest control rule.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	Met?		**Yes**	**No**
Rationale				

The assessment is based on research surveys using baited traps. It estimates biomass using a method based on estimating the effective area fished by baited traps. This method is particularly appropriate for benthic crustaceans, including crabs. Therefore, the assessment is appropriate for the stock. The resultant exploitable biomass estimate serves as the basis for implementing the HCR, which is to adjust the TAC based on the relationship of the estimated exploitable biomass to a proxy Bmsy level. This proxy Bmsy level is estimated using a generic approach but is then reduced as a precautionary measure to account for the low productivity of this stock.

Therefore, the assessment is appropriate for the stock and the harvest control rule. Accordingly **SG 80 is met.**

b	Assessment approach			
	Guide post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.	
	Met?	**Yes**	**No**	
Rationale				

The assessment estimates stock status relative to a generic reference point that is based on a proxy Bmsy reference level. This proxy Bmsy level is estimated using a generic approach that is recommended for fishery resources in general. However this generic reference point is then reduced as a precautionary measure to account for the low productivity of this species. Therefore, the assessment estimates stock status relative to generic reference points appropriate to the species category. Thus **SG 60 is met.**

However, no formal reference points have been established. Thus **SG80 is not met.**

c	Uncertainty in the assessment			
	Guide post	The assessment **identifies major sources** of uncertainty.	The assessment **takes uncertainty into account**.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a **probabilistic** way.
	Met?	**Yes**	**No**	**No**

Rationale

The assessment identifies some of the major sources of uncertainty. These uncertainties relate in the model used to estimate biomass. These include uncertainty as to the estimate of the effective area fished by traps; it has been recognized that this estimate is an approximation and that it may not be constant across years (Defeo et al 1991). It has also been recognized that the area of distribution of the resource is uncertain (Defeo and Masello 2008, Masello and Defeo 2010). Therefore **SG 60 is met.**

However the assessment does not take these major uncertainties into account. Lack of agreement between survey biomass estimates and the catch rates (CPUE) from the same sampling stations (Figure 5) suggests that the trap EFA likely differs across years.

There is further uncertainty that is not taken into account that is related to strong seasonal effects on survey biomass estimates associated with seasonal migrations; the 2002 survey was conducted in autumn whereas subsequent surveys were conducted in spring (Defeo et al 1991). In addition, there is unaccounted uncertainty regarding the precision of biomass estimates; no information has been provided on the significance of annual differences in biomass estimates. This uncertainty is heightened due to the broad confidence intervals about the 2005 biomass estimate that were about as large as the mean estimate (Gutiérrez et al 2011).

Therefore **SG 80 is not met.**

	Evaluation of assessment			
d	Guide post			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			**No**

Rationale

The assessment has been tested only once; the biomass estimate from the EFA method was compared with that from another method in 2005 and there was close agreement between the estimates (Gutiérrez et al 2011). The increase in biomass in 2005 and decrease in 2006 agrees with changes in survey CPUE (Figure 5), suggesting little change in EFA during 2003-2006. However, survey CPUE declined by half from 2002-2005 while the exploitable biomass estimate tripled, suggesting changes in EFA during that period. Therefore it cannot be concluded that the assessment has been shown to be robust.

Accordingly, **SG 100 is not met.**

	Peer review of assessment			
e	Guide post		The assessment of stock status is subject to peer review.	The assessment has been **internally and externally** peer reviewed.
	Met?		**No**	**No**

Rationale

No information has been presented to indicate that assessment of stock status is subject to peer review. Therefore **SG 80 is not met.**

References

Defeo, O. and A. Masello. 2008. Situación actual de la pesquería de cangrejo rojo *Chaceon notialis* en Uruguay: abril 2008. Informe Técnico, DINARA, Montevideo, Uruguay:15 pp.

Defeo, O., V. Little & L. Barea. 1991. Stock assessment of the deep-sea red crab *Chaceon notialis* in the Argentinian - Uruguayan Common Fishing Zone. Fisheries Research 11: 25-39.

Gutiérrez, N.L., Masello, A., Uscudun, G., Defeo, O., 2011. Spatial distribution patterns in biomass and population structure of the deep sea red crab *Chaceon notialis* in the Southwestern Atlantic Ocean. Fish. Res. 110, 59–66. https://doi.org/10.1016/J.FISHRES.2011.03.012

Masello, A and O. Defeo 2010. Pesquería de cangrejo rojo *Chaceon notialis* en Uruguay: resultados de investigaciones recientes y propuestas de manejo para 2011. DINARA, Memorando, 3pp.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**60-79**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**Not applicable at this stage**
Condition number (if relevant)	**Not applicable at this stage**

6.3 Principle 2

6.3.1 Principle 2 background

6.3.2 UoC catch composition: species assignment to MSC P2 categories

The species assessed under P2 are those species in the catch that are not covered under P1. The assessment team considered each P2 species within only one of the primary species, secondary species or ETP species components, according to MSC Fisheries Standard SA3.1.3-3.1.5 and SA3.4.4-3.4.5.

6.3.3 Sources of information

Before categorizing P2 species is important to indicate the different sources of information used by the team to assess the species impacted by the fishery:

a. - Firpo et al. 2017 Red crab (*Chaceon notialis*) bycatch in Area I.

The bycatch fauna in the red crab fishery is an item little explored in Argentina. In July 2017, an experimental fishing survey for red crab (*Chaceon notialis*) and deep-sea lobster (*Thymops birsteini*) was conducted from the Argentine side of the Argentine-Uruguayan Common Fishing Zone to the 40ºS parallel. Thirty-one hauls (1,827 traps) were made between depths of 100 and 1190 meters. It was caught 681 specimens (0.37 specimens/trap) corresponding to 18 taxa, belonging to 6 phyla. The best represented phyla were Echinodermata, Arthropoda (Subphylum Crustacea), and Chordata (Subphylum Vertebrata) (Firpo et at., 2017). Table XXX shows the species found, frequency of occurrence (% of fishing operations) and number of individuals captured during the red crab (*Chaceon notialis*) experiemental survey, on board the BP Atlantic in 2017.

Tabla 1. Listado de taxones, frecuencia de ocurrencia (en % de lances) y número de ejemplares capturados durante la campaña de pesca experimental de cangrejo rojo (*Chaceon notialis*), BP Atlantic Express, 2017.

PHYLUM	Frecuencia de ocurrencia (% de lances)	Nº de ejemplares
ANNELIDA		
Chaetopterus variopedatus (poliqueto)	3,23	2
CNIDARIA		
Anthozoa	16,13	38
MOLLUSCA		
Gasteropoda	32,26	161
Octopus sp. (pulpo)	6,45	2
Zygochlamys patagonica	3,23	1
ECHINODERMATA		
Asteridae (estrellas de mar)	41,94	58
Echinoidea (erizos)	32,26	235
Gorgonocephalus chilensis (estrella canasto)	6,45	2
ARTHROPODA (Subphylum Crustacea)		
Libidoclaea granaria (cangrejo araña)	25,81	60
Sympagurus dimorphus (cangrejo ermitaño)	16,13	24
Thymops birsteini (langosta oceánica)	9,68	5
Paralomis formosa (centolla de profundidad)	6,45	2
Picnogónido indet.	3,23	1
CHORDATA (Subphylum Vertebrata)		
Macrouridae (granadero)	38,71	81
Squalus acanthias (tiburón espinoso)	9,68	4
Cheilodactylus bergi (castañeta)	3,23	1
Bathyraja sp.(rayas)	3,23	1
CHORDATA (Subphylum Urochordata)		
Thaliacea	3,23	3

As it is stated in SA3.4.1 of the MSC Fisheries Standard 2.01, the assessment team shall determine and justify which primary species are considered 'main' and which are not. For that, it is necessary to determine whether the catch of species by the UoA comprises 5% or more by weight of the total catch of all species by the UoA, or if the species is classified as 'Less resilient' and the catch of the species by the UoA comprises 2% or more by weight of the total catch of all species by the UoA. Firpo et at. (2017) just provides the team with number of individuals and therefore, the team can not use this information to classify these species under MSC requirements.

b.- Data from observers on board the UoA

The observer coverage during 2017-2019 on board the vessels included in the UoA is as follows:

In 2017, 9 out of the 11 fishing trips were covered by observers (82%).
In 2018, 13 of the 18 fishing trips that took place were covered (72%).
In 2019, 4 out of the 15 fishing trips were covered (27%).

This observer coverage information was provided by the client to the assessment team but no other information collected by the observers is made available to the team to be assessed.

c. - Data from the client.

Following MSC Fishery Standard v 2.01 SA3.1.7 the team shall consider species used as bait in the UoA, whether they were caught by the UoA or purchased from elsewhere, as either primary or secondary species using the definitions provided under SA 3.1.3 and SA 3.1.4 respectively.

Table XXX. - Bait data used by the UoA from 2017-2019 (source: Client).

	2017	%	**2018**	%	**2019**	%
Cangrejo rojo (Chaceon notialis)	662200	75,53	1040000	74,91	935000	82,66
Lacha(*Brevoortia aurea*)	103000	11,75	8000	0,58	34500	3,05
Anchoa (*Pomatomus saltatrix*)	0	0	7000	0,50	3600	0,32
Cabezas salmón	0	0	0	0,0	20000	1,77
Varios	111500	12,72	333395	24,01	138000	12,20
TOTAL	**876700**		**1388395**		**1131100**	

*Various= fish discarded from plants (either due to deterioration, unmarketable sizes, lack of market, etc.). If it is not destined for bait, it would be fishmeal (Whitemouth croaker (*Micropogonias fournieri*), Stripped weakfish (*Cynoscion guatucupa*), King weakfish (*Macrodon ancylodon*) and Argentine croaker (*Umbrina canosai*) all of them without BRP).

Salmon heads= salmon heads (waste) derived from aquaculture. Origin: Chile.

6.3.4 P2 species classification following MSC requirements

According to the different sources of information presented above, the assessment team elaborated the most complete list of all species impacted by the UoA, and they were classified into primary (main/minor), secondary (main/minor) and ETP species according to MSC requirements.

The difference between 'Primary' and 'Secondary' species lies on whether management is based on biological reference points (primary) or not (secondary). On the other hand, the difference between 'Main' and 'Minor' lies on the proportion (in weight) that a particular species represents in the catch. According to MSC Fisheries Standard SA3.4.2-3.4.5, the designated weight threshold to differentiate between 'Main' and 'Minor' is 5% (or 2% in the case of less resilient species): species accounting ≥5% in weight of the total catch are considered as 'Main', while species falling below that threshold are classified as 'Minor' (unless the total catch of the UoA is exceptionally large, such that even small proportions of a P2 species significantly impact the affected stock, MSC Fisheries Standard SA3.4.4).

Table 6.3.4 – Scoring elements			
Component	Scoring elements	Designation	Data-deficient
Bluefish (*Pomatomus saltatrix*)	Primary	Minor	
Brazilian menhaden (*Brevoortia aurea*)	Secondary	Main	
Various	Secondary	Main	

6.3.5 Primary species impacted by the UoC

The stock assessed as primary component of the P2 is: Bluefish (*Pomatomus saltatrix*).

<u>Bluefish stock status (Rootes-Murdy, K., 2014 (ASMFC)).</u>

The most recent Atlantic States Marine Fisheries Commission (ASMFC) bluefish stock assessment was completed in 2005. The assessment passed peer review and was approved by the ASMFC Bluefish Management Board and the Mid-Atlantic Fishery Management Council (MAFMC) Coastal Migratory Species Committee. The assessment developed biological reference points for both bluefish biomass and fishing mortality (½BMSY = 73,526 mt; FMSY = 0.19). The ASAP model used to calculate population abundance in this assessment has been updated annually since 2005. The output from this model is used to set the annual Total Allowable Catch (TAC).

The most recent stock status information indicates that bluefish are not overfished and overfishing is not occurring. The biomass estimates in 2008 exceeded the BMSY and therefore bluefish were considered rebuilt two years ahead of the 2010 rebuilding deadline. The 2013 stock assessment update suggests that total biomass in 2012 was 85% of its target. For 2012, fishing mortality rates estimated in ASAP using state and federal indices show a low fishing mortality and a stable trend in population biomass (B2012 = 125.8 MT; F2012 = 0.097). Abundance estimates peaked in 1982 at 166 million fish, but declined to 58 million in the mid-1990s. Since 1997 abundance has generally increased to a high of 99.88 million fish in 2008, although since then, abundance estimates declined to 64.2 million fish in 2012.

Bluefish are managed as a single coastal stock. A benchmark stock assessment (SA) completed in 2015 projected stocks status through 2018. The peer-reviewed assessment used new input data to improve upon the shortcomings of the previous model, which relied heavily on uncertain relationships between spawning stock biomass (SSB) and future recruitment. Catch estimates and juvenile recruitment indices were incorporated into the age-structured assessment program (ASAP) model to produce estimates of fishing mortality (F) and stock biomass.The 2015 assessment resulted in lower biomass estimates and reference points than the previous model, and a 10% decrease in the acceptable biological catch (ABC) to 19.45 million pounds.

Bluefish are not overfished, i.e. spawning stock biomass in 2014 (191 million pounds) was above the SSB threshold (112 million pounds). SSB was 50% of the target level of 223 million pounds. Overfishing is not occurring, i.e. fishing mortality (F) in 2014 (0.157) was below the threshold of 0.17. Fishing mortality has declined steadily since 2007. Coastal recruitment has historically been variable, but a period of low recruitment persisted from 2008-2012. Coastal recruitment in 2013 and 2014 was above average. Total abundance increased in 2014 to 82 million fish, while total stock biomass decreased slightly from 214 million pounds in 2013 to 208 million pounds in 2014.

6.3.6 Secondary species impacted by the UoC

The different species/groups assessed as secondary components of the P2 are summarised below:

- 2 main secondary species/groups, both part of the fisheries bait: Brazilian menhaden (*Brevoortia aurea*) and various (Whitemouth croaker (*Micropogonias fournieri*), Stripped weakfish (*Cynoscion guatucupa*), King weakfish (*Macrodon ancylodon*) and Argentine croaker (*Umbrina canosai*).

6.3.7 ETP species impacted by the UoC

According to MSC requirements (SA 3.1.5), the team shall assign ETP species as follows:

a. Species that are recognized by national ETP legislation (in this case Uruguayan legislation).

b. Species listed in binding international agreements given below:

  - Appendix 1 of the Convention on International Trade in Endangered Species (CITES), unless it can be shown that the particular stock of the CITES listed species impacted by the UoA under assessment is not endangered.

  - Binding agreements concluded under the Convention on Migratory Species (CMS), such as the Agreement on the Conservation of Albatrosses and Petrels (ACAP).

c. Species classified as 'out-of scope' (amphibians, reptiles, birds and mammals) that are listed in the IUCN Red list as vulnerable (VU), endangered (EN) or critically endangered (CE).

As there is no bycath UoA information, the assessment team does not have direct information on ETPs. Regardless of this, some information about ETPs in Uruguay and the potential impact of the red crab fishery in these ETPs has been collected and presented below.

Sharks and rays

Recent decades have seen an increase in the catch (discarded and retained) of chondrichthyans in artisanal and industrial fisheries, coupled with a rapid growth of unregulated fisheries, which has led to a decline in many populations of this group of fish in all seas of the world. Overfishing and high levels of mortality caused by bycatch, as well as the degradation and pollution of coastal areas where feeding, breeding and nursery grounds for many chondrichthyan species are located, have placed this group of fish in a difficult situation. Approximately 100 species of chondrichthyans occur in Uruguayan waters, many of which are caught by different fisheries, both incidentally and targeted. In 2005, the National Directorate of Aquatic Resources (DINARA) decided to begin the process of elaborating the "National Action Plan for the Conservation of Chondrichthyans in Uruguayan Fisheries" (PAN - Condrictios Uruguay). In November 2005 in Montevideo, Uruguay, the "Workshop on Assessment and Management of Elasmobranchs in South America and Regional Bases for Action Plans (DINARA/FAO)" was held, organized by DINARA, jointly with the FAO Fisheries Department, where the basis for the development of the current Action Plan emerged.

According to PAN- Condrictios Uruguay, vessels using traps targeting red crab (*Chaceon notialis*) and Patagonian toothfish incidentally catch rays (*Amblyraja frerichsi* and other species), which are distributed in depths ranging from 600 to 2600 m.

Marine Mammals

No records and/or research has been found on trap gear interactions with marine mammals. Such interactions might for example be in the form of entanglement with the buoy lines. PINRO (2015) explicitly stated that no such interactions have been recorded by the crab fishing vessels.

Sea turtles

Traps and fyke neats are fishing gear used mainly to catch mollusks, lobster, crabs and benthic fish. Interaction with sea turtles has been observed while using these types of fishing gear, however**,** the scarcity of information does not allow for a an analysis of the impact level of these methods. Nevertheless, the existing records indicate that sea turtles do indeed interact with this type of fishing gear to some degree. Sánchez *et al.* (in press) reported the bycatch of three *D. coriacea*, which were caught on the main line of a boat that was conducting exploratory conch fishing using fyke nets in the Uruguayan EEZ (Domingo A et al, 2006)

Sea birds

In response to the need to reduce seabird mortality, the Food and Agriculture Organization of the United Nations (FAO) developed the International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (IPOA-Seabirds), which encourages the development of National Plans of Action in each of its member countries.

Uruguay, through DINARA of the Ministry of Livestock, Aquaculture and Fisheries (MGAP), within the framework of the Code of Conduct for Responsible Fisheries, with the participation of several governmental and non-governmental institutions and the fishing industry, has developed the Plan of Action to Reduce Seabird Bycatch in Uruguayan Fisheries (PAN-Seabirds Uruguay).

6.3.8 Habitats

The red crab (*Chaceon notialis*) is distributed in the southwestern Atlantic Ocean, mainly in Uruguayan waters (Barea & Defeo, 1985, 1986). *C. notialis* is endemic to deep waters, extending between latitudes 33º S and 43º S (Spivak, 1997).

Some species of gerionid crabs live in muddy or sandy-muddy bottoms, partially burying themselves, while others inhabit crevices, caves and rock formations of the shelf and slope, between 40 and 2155 m depth (Wigley et al., 1975); although they are found in greater proportion between 200 and 1000 m, at temperatures ranging between 4 and 12º C and salinities of 34.5 to 35.2 ppm.

The study area in the waters of the Argentine-Uruguayan Common Fishing Zone (ZCPAU) was included in the continental slope strip that extends from latitude 35º00' to 36º40', which is the southernmost extreme of the resource distribution, at depths between 300 and 1000 m.

Red crab in Uruguayan waters is seated at the continental platform, in rock and sandy bottoms between 200 and 1600 meters depth. The new fishing permits include a more limited fishing zone in relation to depths (between 500 and 1100 m) in order to protect ovigerous females, females with signs of molting and larger males at depths shallower than 500 m throughout the latitudinal range, as well as recruitment around 1200 and 1400 m, being able to fish again at greater depths.

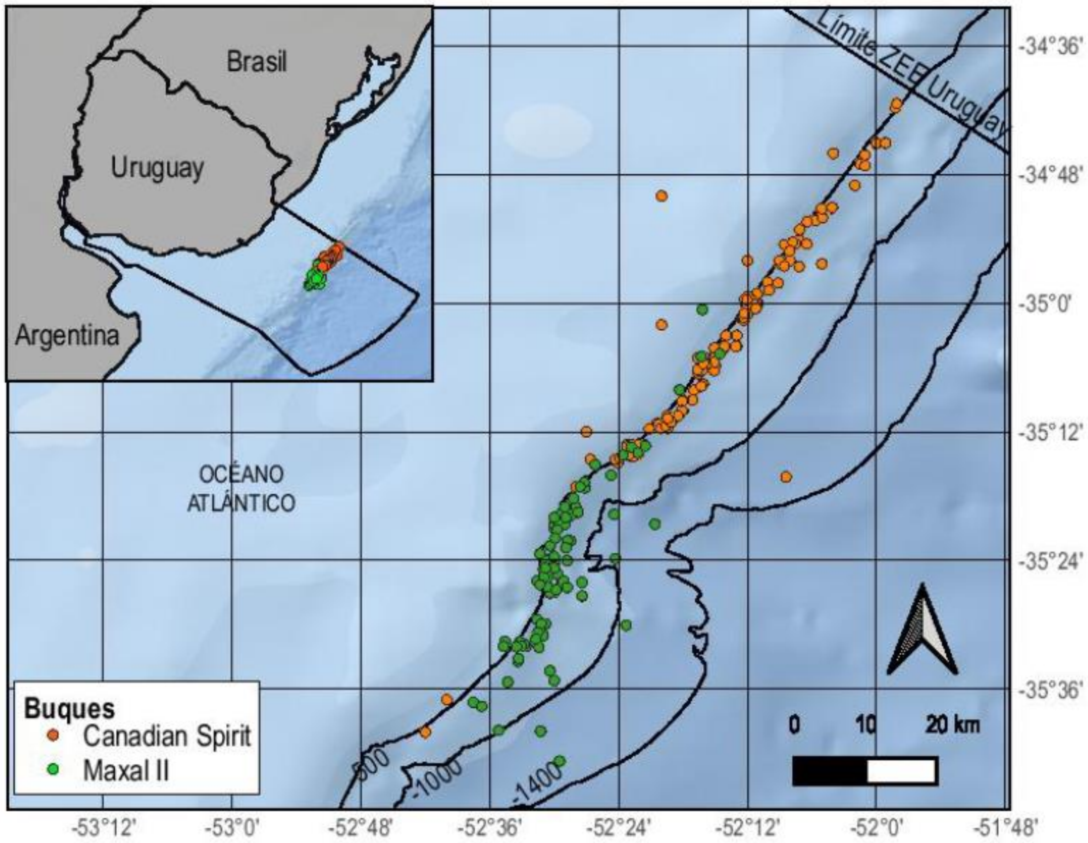


Figura XX. Location of fishing hauls for the vessels Maxal II and Canadian Spirit in 2017 (Source: DINARA informe pesquería Cangrejo Rojo)

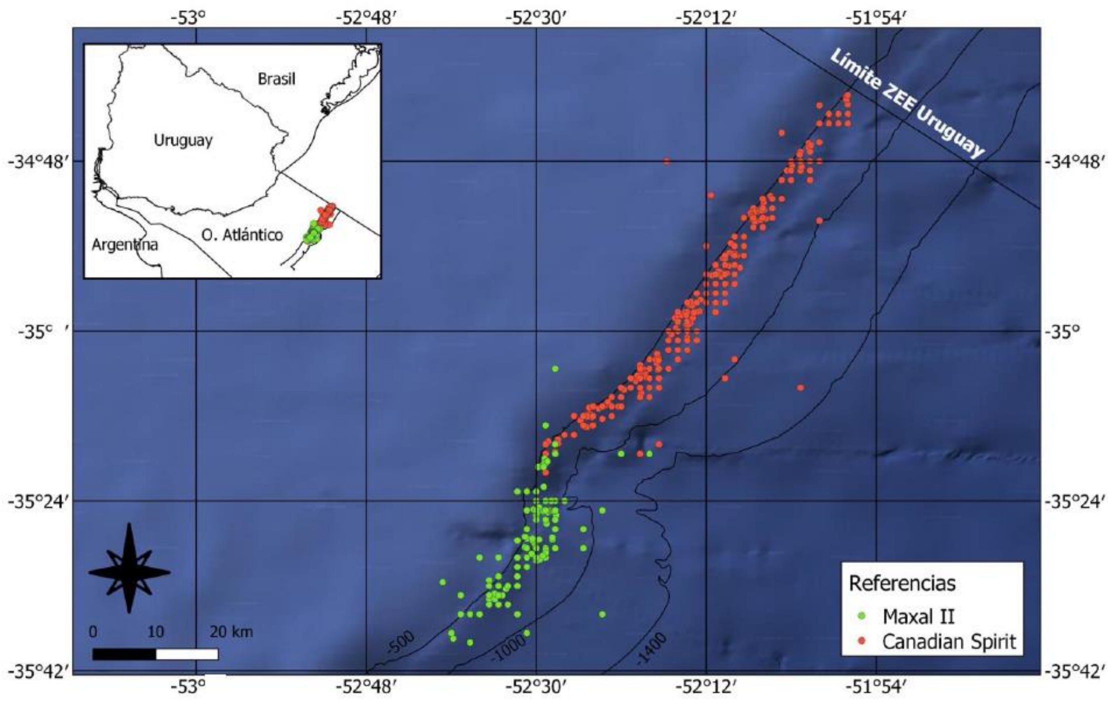


Figure XX. Location of fishing hauls for the vessels Maxal II and Canadian Spirit in 2018 (Source: DINARA informe pesquería Cangrejo Rojo)

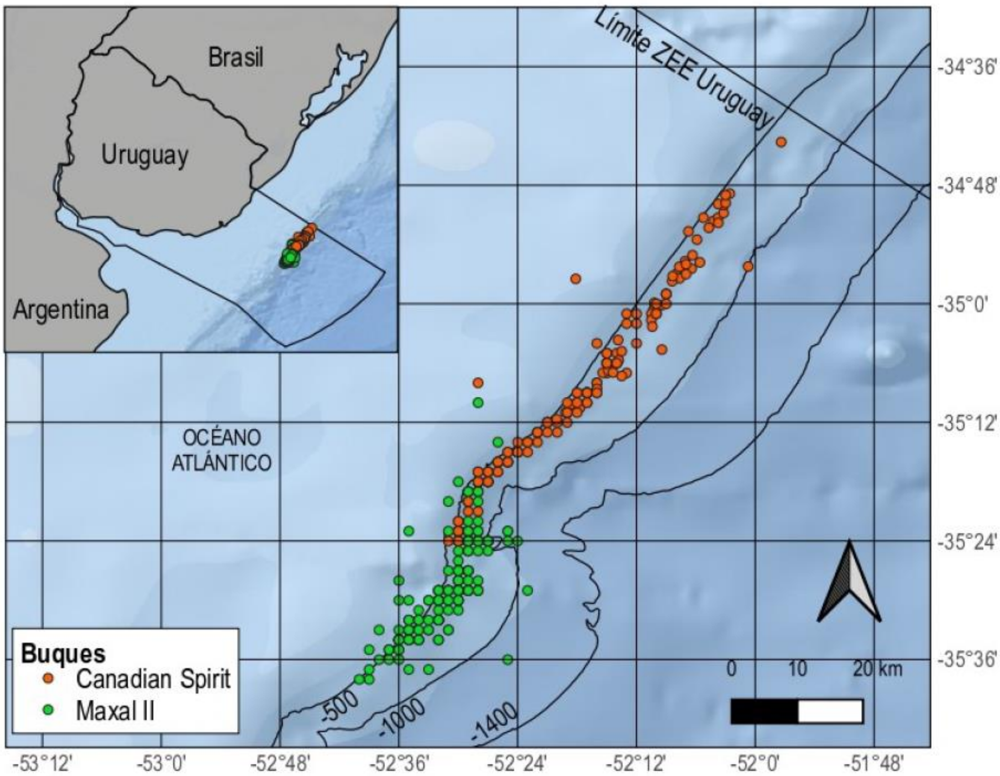


Figure XXX. Location of fishing hauls for the vessels Maxal II and Canadian Spirit in 2019 (Source: DINARA informe pesquería Cangrejo Rojo)

According to MSC requirements (SA 3.13.1), the team shall assess the habitats component in relation to the effects of the UoA on the structure and function of the habitats impacted by the UoA. The habitat's structure and function (i.e., the ecosystem services that it provides), including abundance and biological diversity, is of concern in an MSC assessment. Thus, an assessment should look not only at the impact on the habitat but also the habitat's delivery of ecosystem services

Prior to the assessment of the habitats component, the team shall determine and justify which habitats are commonly encountered, vulnerable marine ecosystems (VMEs), and minor (i.e., all other habitats).

a. *Commonly encountered habitats*

Commonly encountered habitats are defined by MSC Requirements (MSC Fisheries Standar 2.01 GSA3.13.3.1) as those preferred by the target species, that the UoA's gear is designed to exploit, and/or make up a reasonable portion of the UoA's fishing area. In the red crab fishery, the commonly encountered habitat is the continental platform in rock and sandy bottoms.

b. *VMEs*

According to MSC FCR GSA3.13.3.2, VMEs have one or more of the following characteristics, as defined in paragraph 42 of the FAO Guidelines: (i) Uniqueness or rarity; (ii) Functional significance of the habitat, (iii) Fragility; (iv) Life-history traits of component species that make recovery difficult; (v) Structural complexity.

The FAO Guidelines' Annex identifies the following species groups, communities, and habitat-forming species that may form VMEs and may be indicative of the occurrence of VMEs:

i) Certain coldwater corals and hydroids;

(ii) Some types of sponge-dominated communities;

(iii) Communities composed of dense emergent fauna where large sessile protozoans and invertebrates (e.g., hydroids and bryozoans) form an important structural component of habitat;

(iv) Seep and vent communities comprised of invertebrate and microbial species found nowhere else (i.e., endemic).

The FAO Guidelines' Annex also lists various geographical features that are often associated with these communities. Examples of topographical, hydrophysical or geological features, including fragile geological structures, that potentially support the species groups or communities, referred to above:

i) Submerged edges and slopes (e.g. corals and sponges);

ii) Summits and flanks of seamounts, guyots, banks, knolls, and hills (e.g. corals, sponges, xenophyphores);

iii) Canyons and trenches (e.g. burrowed clay outcrops, corals);

iv) Hydrothermal vents (e.g. microbial communities and endemic invertebrates); and

v) Cold seeps (e.g. mud volcanoes for microbes, hard substrates for sessile invertebrates).

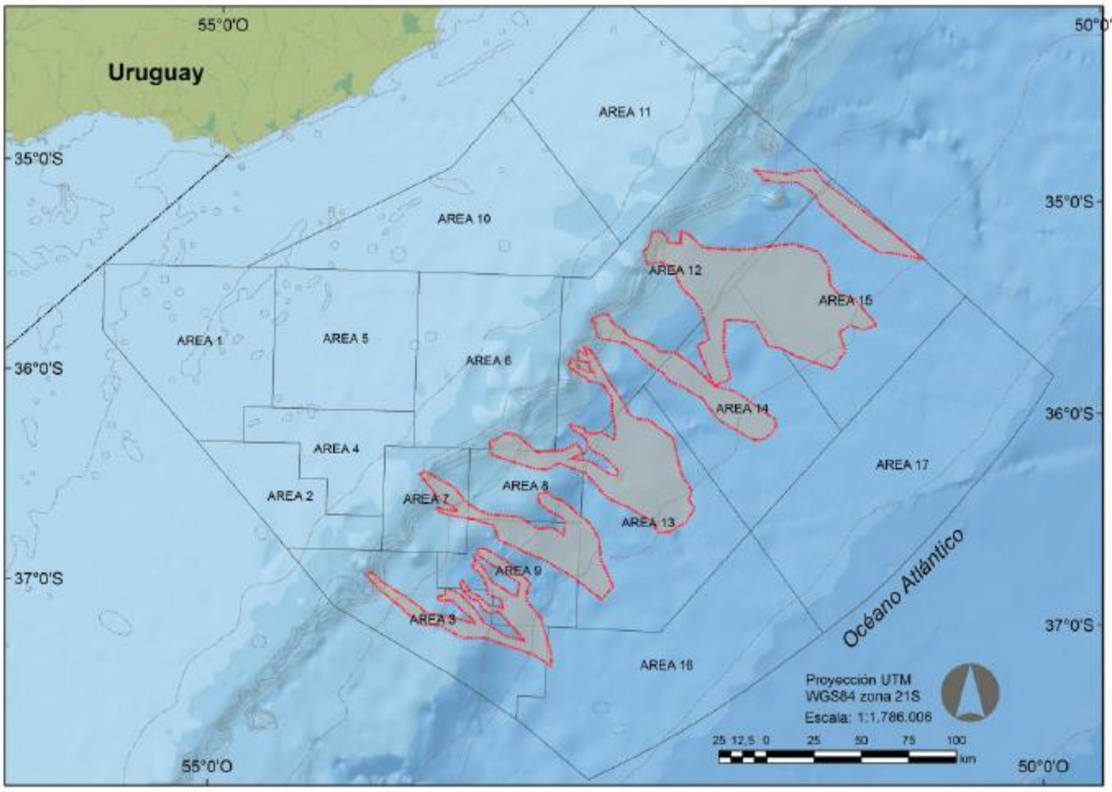
In the reports reported by the observers onboard the UoA vessels, it is stated that when pot fishing is conducted, primarily at depths between 250 and 400 m, it is necessary to record the presence of vulnerable marine ecosystem (VME) indicator organisms to determine if a VME has been encountered. This includes primarily the presence of cold water corals and benthic organisms that may be associated with or attached to corals, either inside the pots, outside the pots, on headlands, orinques, etc. Samples should be brought in fixed and appropriately labeled with haul number, latitude, longitude and depth. The client confirmed that have never been registered in the crab´s pots, but as the assessment team had no access to the observers report and/or bycatch information, this cannot be confirmed. Corals exists next to fishing zone and even though the interference zone seems to be very small, the assessment team lacks of information

In the Uruguayan red crab fishing area, we can encounter the following VMEs (ad hoc AltaMar DINAMA-MVOTMA, 2016):

1.- Cañones submarinos
- Los cañones submarinos son conductos erosivos sobre el talud continental, que transportan sedimentos desde la plataforma continental hacia el océano profundo.
- En el fondo, su topografía variada provee hábitats diversos capaces de albergar gran variedad de comunidades macrobentónicos que se favorecen del elevado aporte de material orgánico que llega a ellos.
- Adicionalmente, las zonas de mayor heterogeneidad constituyen áreas de cría de especies de peces que habitan en los márgenes continentales.
- En sus cabeceras se producen surgencias (debido a procesos de circulación oceánica), contribuyendo con una elevada producción fitoplanctónica en la columna de agua.
- Estas zonas de surgencia son reconocidas como áreas de alimentación de peces y cetáceos.
- Favorecen procesos ecosistémicos (refugio, cría y alimentación)

<u>Particularidades a nivel local</u>

- Recientemente se han descrito 7 grandes sistemas de cañones descritos para la ZEE uruguaya, ellos han sido denominados (de Sur a Norte): Río de la Plata, Montevideo, Piriápolis, José Ignacio, La Paloma, Cabo Polonio y Punta del Diablo.
- En sus cabeceras se encuentran montículos con arrecifes coralinos (ver fichas 5 y 6), siendo estas zonas utilizadas también por pesqueros de altura como caladeros.
- Los cañones se encuentran en las áreas: 3, 6-9 y 12-16.



FiguraXX. Canyon´s distribution in the Uruguayan EZZ (Source: Informe grupo ALTAMAR)

2.- Pockmarks

- Son cráteres comúnmente encontrados en los lechos de todos los océanos, se asocian a migraciones de fluidos (óleos o agua) o escape de gases (biogénicos y/o termogénicos) desde el sedimento (gases de hidrato, metano o CO2).
- Se encuentran a profundidades variadas, desde aguas someras hasta profundidades de varios miles de metros. Asociados a pockmarks con escapes de gases se han registrado montículos carbonáticos, conteniendo arrecifes coralinos formados por la especie *Lophelia pertusa.*
-Favorecen procesos ecosistémicos clave (refugio, alimentación).

<u>Particularidades a nivel local</u>

- Estos ambientes no han sido estudiados en profundidad para la región.
- Sobre el talud continental uruguayo, en una campaña de investigación se identificaron 41 formaciones clasificadas como pockmarks de hasta 40 m de profundidad y 400 m de diámetro.
- Las áreas donde se han registrado pockmarks son: 6, 7, 11 y 12.

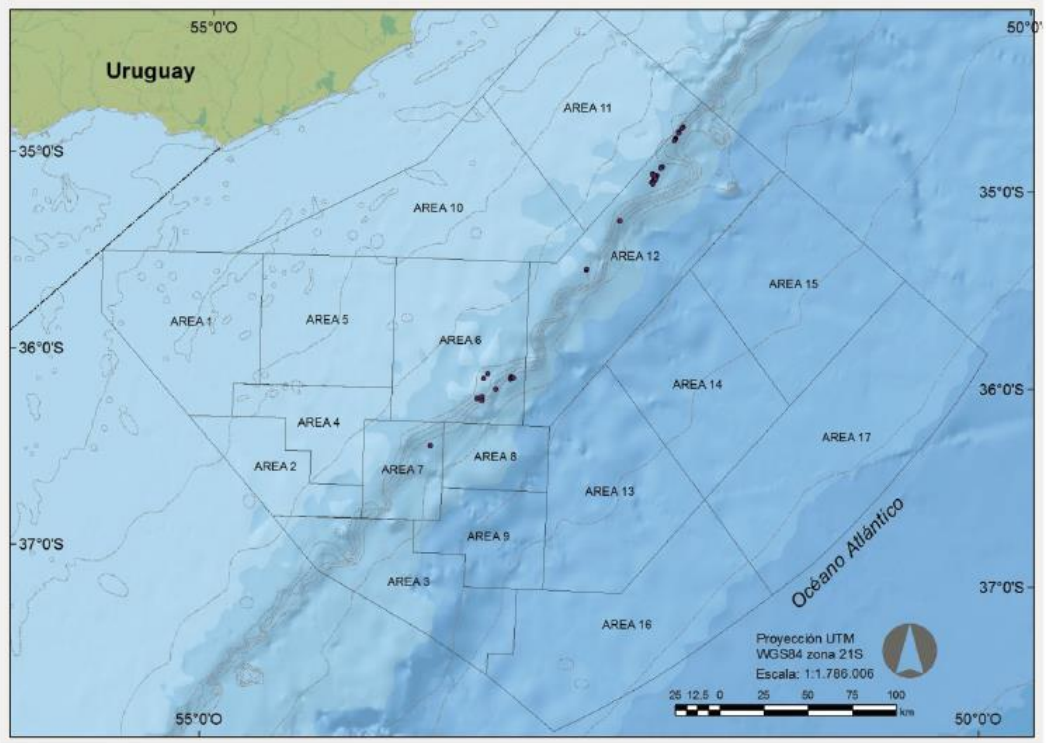


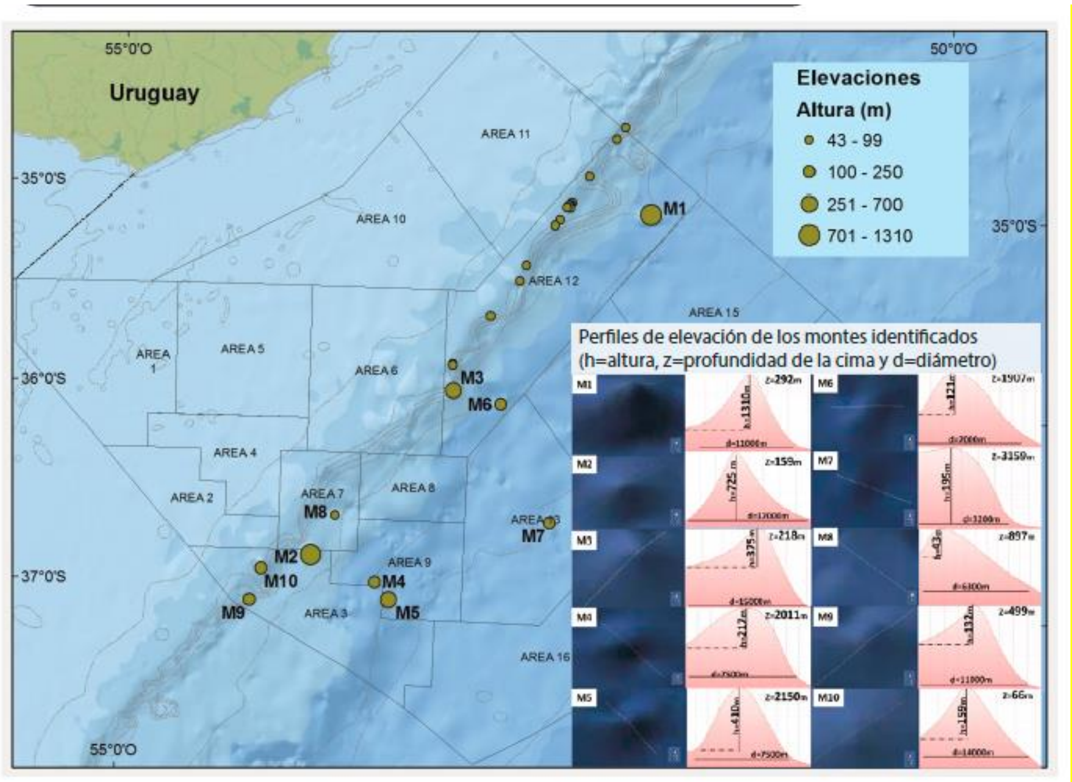
Figura XXX.- Pockmarks distribution in the Uruguayan ZEE (Source: Informe Grupo ALTAMAR)

3.- Elevaciones submarinas

- Las elevaciones submarinas son heterogeneidades en el lecho marino que pueden tener orígen geológico, biológico o mixto.
- Su presencia genera una dinámica hidrológica particular que varía según su escala espacial, forma y orientación generando ambientes de elevada productividad y diversidad en comunidades bentónicas, demersales y pelágicas.
- Asociados a éstos se concentran mamíferos marinos, peces y una notable diversidad de organismos bentónicos y demersales.
- Favorecen procesos ecosistémicos (refugio, cría y alimentación).
- Son vulnerables a la destrucción de hábitat.
- Favorecen la presencia de especies prioritarias (bioingenieras).

Particularidades a nivel local

- Se han identificado 27 elevaciones sobre el talud continental uruguayo, con las siguientes características:
- 17 montículos (menores a 30 m de altura, identificados en una campaña de investigación) a profundidades de hasta 330 m. En 14 se ha comprobado la presencia de arrecifes coralinos de aguas profundas. Se estima que de ampliarse el área estudiada aumentaría el número de montículos.
- 10 montes (M1-M10) a profundidades de hasta 3200 m con alturas que llegan a superar los 1000 m. En 2 de ellos se corroboró la presencia de corales en registros realizados por observadores a bordo.
- Las áreas que contienen las elevaciones identificadas son: 3, 7, 9,12 y 13.



4.- Arrecifes coralinos de aguas profundas

- Los arrecifes coralinos de aguas profundas, formados por la especie *Lophelia pertusa*, son comunes en los márgenes continentales de los océanos. Esta especie tolera un amplio rango de condiciones de salinidad y temperatura y está asociada a fuertes corrientes que mantienen material en suspensión (del cual se alimentan).
- Representan áreas de cría, alimentación y reproducción para numerosas especies y son reconocidos por su alta diversidad.
- Son ecosistemas especialmente vulnerables al daño físico ocasionado por la pesca así como por las actividades de búsqueda y explotación de hidrocarburos y su recuperación puede tardar varias décadas.

<u>Particularidades a nivel local</u>

- En la región no se han profundizado los estudios de estos ambientes.
- En una campaña de investigación se identificaron arrecifes coralinos asociados a montículos.
- Adicionalmente, existen registros de coral en otras regiones del talud continental, los que posiblemente sean los más australes del Atlántico sudoccidental
- Sobre la zona donde se encuentran los corales, se realizan actividades pesqueras dirigidas a *Merluccius hubbsi* (merluza), *Helicolenus dactylopterus* (rouget) y *Chaceon notialis* (cangrejo rojo). El efecto de esta actividad sobre estos ambientes no fue evaluado.
- Las áreas donde se han identificado corales de agua fría son: 3, 7 y 12.

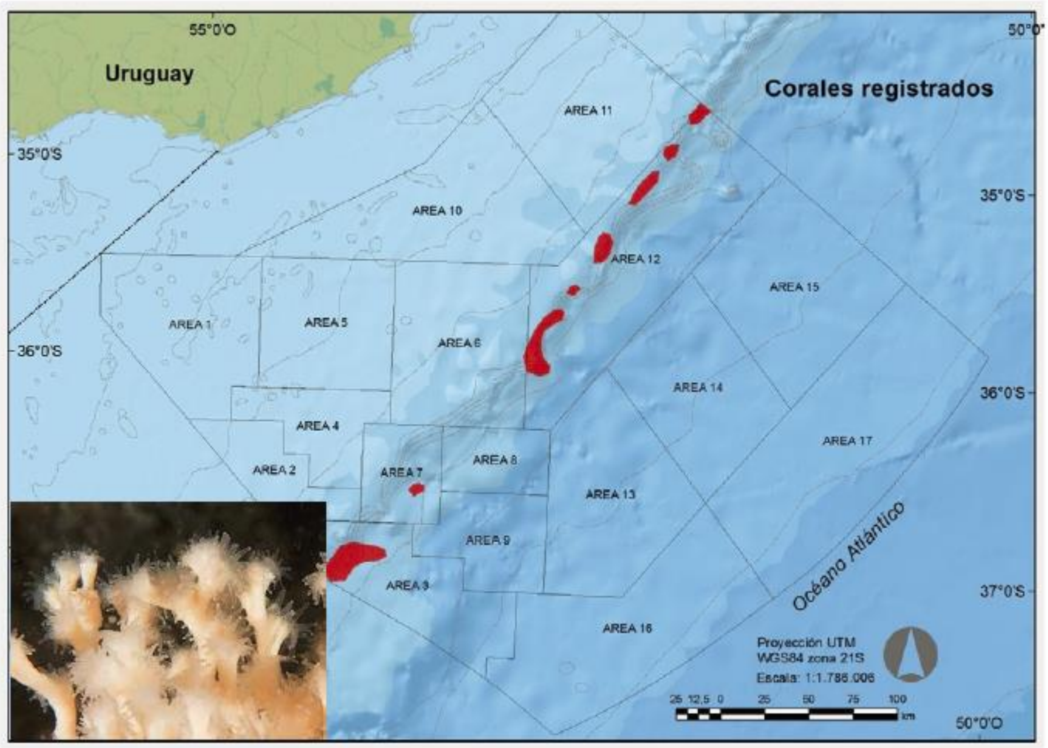


Figura 1- Localización de los arrecifes coralinos registrados en la ZEE uruguaya.

c. *Minor habitats*

Minor habitats are defined by MSC as those that do not fall within the classification of Commonly Encountered Habitats or VMEs (GSA3.13.3).

Based on this definition, no minor habitats have been identified in this assessment.

6.3.9 Ecosystem

All fishing methods have some level of environmental impact, which is often measured in terms of fishing mortality of non-target species (bycatch) that may be retained or discarded at sea as well as target species that may be discarded at sea for a variety of reasons, i.e. too small, damaged, exceeds capacity or replaced with higher value species (high grading).

Ecosystem level impacts resulting from species or functional groups could include:

- Changes to the trophic relationships or structure.
- Changes to the size composition of the ecological community.
- Changes in biodiversity of the ecological community (e.g. alterations to species evenness and dominance) caused by direct or indirect effects of fishing.
- Changes in the distribution of species.

A fishery can alter the structure and functioning of ecosystems through trophic interactions by removing forage species upon which higher trophic level species depend or through top down trophic cascades. Based on the proportion of higher-level predators making up the largest proportion of bycatch species, we consider changes to trophic relationships or structure to be the most serious threat from the fishery to the ecosystem.

- Southeast South American shelf large marine ecosystem (SSASLME)

The Southeast South American shelf large marine ecosystem (SSASLME) extends roughly over the entire continental shelf off southeastern South America, from 23° to 55°S, the largest shelf in the southern hemisphere. Distinctive bathymetry, hydrography, productivity and biological communities characterize this extensive marine ecosystem adjacent to Argentina, Uruguay and southeastern Brazil. The Falklands/Malvinas Current and Brazil Current are the major ocean flows in the SSASLME, and impose an eastern boundary to this ecosystem. While the former provides sub-tropical waters and organisms, the latter contributes elements of sub Antarctic origin. The encounter of these two currents with one another defines a Confluence Zone (CZ) of mixed waters that spans, on the average, from 25° to 45°S. Significant physic meteorological and biological processes described for the SSASLME depend upon the seasonal pattern of current intensification and latitudinal displacement of the CZ. Other oceanographic features, such as frontal zones, upwelling and low-salinity coastal waters, complicate the hydrological structure. Relevant finfish and invertebrate species of either commercial value or key ecological significance are distributed over a wide latitudinal range, which reveals the ecological extension of the SSASLME and the intimate connection between the sub-tropical and subantactic realms. Degradation of coastal water quality and anthropogenic perturbations to living marine resources are also significant throughout this system. The intensity of these stresses follows the pattern of distribution of human settlements, industrialization, areas of resource exploitation and other coastal uses. These disturbances, extended in both time and space, concern areas under different jurisdictions. Compared to previous geopolitical partitions and regional arrangements, the LME perspective provides ecological arguments for the perception of the SSASLME as a functional unit for monitoring and management.

The biogeophysical characteristics of certain large-scale areas of the world's ocean define relatively distinct ecological systems that may be considered as units for research monitoring, exploitation and management. During the last decade, this holistic perception of large areas of the marine environment with unique hydrology, bathymetry, productivity and trophic interactions has been gaining momentum through the designation of regional large marine ecosystems (LMEs).The broad perspective gained by the LME approach allows for the identification of major forces governing each system, impacts of pollution and environmental stress agents, and estimation of the resilience to exploitation and potential yields of renewable resources. Based on its physical and biological characteristics, the continental shelf off Southeastern South America has been given recent consideration as a regional LME. Significant natural and anthropogenic forces operate in this ocean space, including stresses from overharvesting, pollution and natural environmental perturbations.

The LME concept is based on the premise that large areas of ocean space function as ecosystems, which premise that large can be assessed, monitored and managed based on ecological processes. This idea integrates several axes which represent the physical environment, biological communities, pollution and socio-economic considerations and evaluates their interaction in a naturally defined area. The result of such a combination of ecological studies (i.e. Information on contaminants, resources, and ecosystem conditions) and socio-economic components is a total ecosystem approach necessary to take meaningful management actions.

Geographic setting.

The Southeast South American Shelf Large Marine Ecosystem (SSASLME) roughly extends from Cape Frio, Brazil (23°S) to the south of Burdwood's Bank, in Argentina (55°S) *(Figure la).* The SSASLME has a total area of about 2.7 million km 2 and comprises the continental shelf extending seawards from the coast of southeastern Brazil, Uruguay and Argentina, and the steep continental slope to a depth of approximately 1000 m. The shelf is relatively narrow at its northern end (approximately 70 km at Cape Frio) and widens progressively to the south, where it reaches a maximum width of some 850 km. This broad submarine terrace is perhaps the most remarkable bathymetric feature of southeastern South America and constitutes the largest continental shelf in the southern hemisphere.

Figure XX.—Geographic setting of the South American Shelf Large Marine Ecosystem (SSASLME). Source: www.onesharedocean.org

Hydrography.

Numerous shipboard surveys and satellite observations have focused on the identification of water masses, prevailing flow direction, physical and biological properties and gradients, volume transports and mesoscale features associated with the complex hydrographic structure of the SSASLME. The upper oceanographic circulation in this system is influenced by two major wind-driven currents: in the north, the southward sub-tropical flow of the Brazil Current, and in the south, the northward sub-Antarctic flow of the Falklands/Malvinas Current *(Figure lb).* The Brazil Current originates as a branch of the South Equatorial Current and runs poleward nearly parallel to the shelf break. This current is the major near-surface current in the western South Atlantic. Its tropical origin makes it warm and saline and relatively oligotrophic. The Falklands/Malvinas Current, on the other hand, branches off the Antarctic Circumpolar Current as a 100 km wide flow which carries cool, nutrient-rich sub-Antarctic water equatorward along the continental slope. These two currents represent a distinctive ecological boundary which outlines the eastern limit of the SSASLME and separates it from the South Atlantic Ocean Basin. The opposite flows of sub-tropical and sub-Antarctic waters define a conspicuous Confluence Zone (CZ) of mixed waters. The wide area under the influence of the CZ spans from about 25 ° to 45°S, for the latitudinal location of the main axis depends upon the seasonal relative intensity of both currents. On average, this axis is situated at an approximate latitude of 39°S.1° the polewad Brazil Current, separates from the shelf break near 36°S, and is deflected offshore. Similarly, as a result of this collision with the Brazil Current, the Falklands/Malvinas major wind-driven currents Current also deflects eastward at around 39°S. The easterly course of this combined flow then enters the general circulation of the wind driven subtropical anticyclonic gyre of the South Atlantic. The CZ is characterized by an intense horizontal and vertical mixing of conservative and non-conservative properties such as temperature, salinity, organic and inorganic particles, and a seasonal pattern of current intensification and latitudinal instability.12 The mixed origin of the CZ and the exchange between different water masses provide for nutrient and biological exchange and have significant physio-meteorological and biological consequences for the entire SSASLME region. However, the specific characteristics and dynamics of the CZ are still poorly understood.

The shelf waters result from the mixing of several water types: coastal, sub-Antarctic, sub-tropical and mixed waters. Their relative proportions and degree of mixing vary according to the latitudinal sector under consideration.

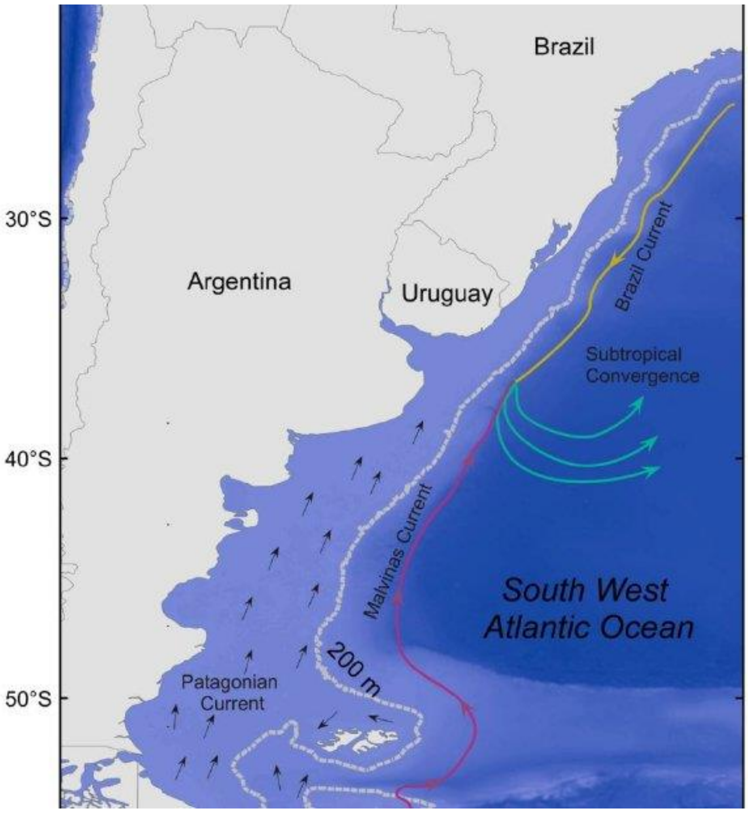


Figure XX . Dominant water masses

Abundant information has been generated on the dynamics and intense exchange of properties between waters masses at several fronts present in the SSASLME. A distinctive permanent shelf-break front which divides shelf waters from the core Falklands/Malvinas Current has been described for the Argentine continental slope. Significant coastal tidal fronts have also been reported between the latitudes of 41 ° and 48°S. 16 These quasi-permanent features develop on the shelf region near the 50-100 m isobaths and divide a coastal domain from an outer shelf domain. The former is characterized by a vertically homogeneous water column, induced by intense tidal and wind stirring throughout the year. In the outer shelf domain, a well-defined thermocline leads to a persistent stratification disrupted only during the winter. At 35°S, an estuarine front results from the freshwater discharge of the Rio de la Plata. The Rio de la Plata drainage basin system is comprised of the Parami and Uruguay Rivers and their tributaries, and although the main body is freshwater, the outer part is brackish.

North of 35°S, fresh waters of the Rio de la Plata mix with sub Antarctic waters of the Falklands/Malvinas Current and form a low salinity coastal water which can reach southern Brazil up to 29°S. Several authors have indicated that sub-Antarctic waters associated with the Falklands/Malvinas Current disappear from the surface at a latitude near 35°S. At that point, these denser waters continue in a submerged northerly flow along the 150-200 m isobath up to the Southeastern Brazilian Bight (23-28%).Water of sub-antarctic origin may resurface at several locations as a result of an intense offshore Ekman transport. Surface cooling and nutrient enrichment through localized coastal up-welling events of this type have been recorded in the vicinity of Santa Marta Grande Cape (29°S) and Cape Frio (23%) by means of ship drift information and satellite data. The hydrographic charactistics north of 23°S follow an entirely different circulation scheme. The distribution of temperatures and salinities in the upper 100 m layer indicate new relative proportions between different water masses. Surface coastal waters north of Cape Frio are never colder than 20°C, even during winter cooling. Zoo geographically, the location of the 20°C isotherm during the coldest time of the year has been repeatedly used to identify a major boundary for the tropical regions (see the section on 'Biogeographical considerations' below). Topographic anomalies of the sea-floor and the sharp change in the orientation of the continental shelf near 23°S have been proposed as possible causes for the distortion of the course of the Brazil Current and intensification of its horizontal volume transport. The combination of these observations clearly indicates that the latitude of 23°S represents a coherent northern boundary for the hydrographic characteristics and circulation of the SSASLME.

Productivity.

Based on the geographical distribution of phytoplankton production, the Fisheries Department of the Food and Agriculture Organization of the United Nations (FAO) compiled a worldwide map of coarse productivity contours (*Figure* 2a). In that contribution, estimates of primary productivity for the Rio de la Plata, its area of influence and the Southeastern Brazilian Bight (Cape Frio to Santa Marta Grande Cape) exceed 500 mgC/m2/day. The section of the Patagonian Shelf south of 41°S, but west of the Falkland/Malvinas Islands, falls into the 150-250 mgC/mZ/day category. The rest of the SSASLME, i.e. shelf of Buenos Aires Province, Southern Brazilian Shelf and the slope region from 23°S to the Falkland/Malvinas Islands, varies between 250 and 500 mgC/mZ/ day. Again, the caveat should be observed that coverage has not been uniform, not all areas have been explored with the same intensity and the data were not averaged seasonally.

Information on primary productivity within the SSASLME is scarce. In general, it is possible to establish a change in the magnitude of phytoplankton production along the permanent shelf-break front. This discontinuity suggests an eastern limit to the ecosystem. The southern boundary, on the other hand, may be tracked along the Antarctic Convergence. Finally, demarcation of the northern limit of the SSASLME is more difficult, since current data on discontinuities in phytoplankton productivity in the latitudinal direction are inconclusive.

Biogeographical considerations.

The marine fauna of the SSASLME finds a northern boundary to its distribution at the latitude of Cape Frio (23°S) near Rio de Janeiro. This limit corresponds to the 20°C isotherm, which indicates the transition from tropical to subtropical conditions. Exclusively tropical communities with a year-round thermal requirement at or above 20°C, such as mangrove swamps and coral reefs, reach their southernmost extension near Cape Frio. Other authors reached the same conclusion regarding this sharp biogeographical border, based on the discontinuities in the distribution of planktonic foraminifera, echinoderms, hydrozoans, mollusks, panaeid shrimp, and fishes.

The two main water mass components of the SSASLME (sub-tropical and sub-Antarctic) dictate the faunal schemes encountered in the area. In the large latitudinal extension of this system, a high degree of faunal heterogeneity is observed, with a gradient between two faunal assemblages: warm-temperate and cold temperate. While the contact between both realms progresses over an area of gradual mixed conditions, the assessment of the interaction between them is further complicated because of incomplete spatial-temporal data sets, significant shifts and even disappearance of horizontal boundaries with depth. In addition, intrinsic ranges of tolerance, adaptation and ecological interactions vary with the specific animal group under consideration.

Ghost fishing

Fishing has many types of impacts on the marine environment. Degradation of seafloor habitats by trawling has been widely studied, along with bycatch mortality, and ghost fishing by traps. Traps or pots are commonly used for catching crustaceans and other organisms, but little research has been conducted on the environmental impacts of trap fishing. Trap fishing causes direct impacts on benthic habitats during setting and retrieval, including dragging along the seafloor, which can lead to the damage and destruction of habitat components such as corals, sponges, and other epifauna. Lines connecting multiple traps increase the overall footprint and cause additional damage. Lost traps and debris can cause damage to coral, submerged aquatic vegetation, and epifauna, especially if moved by storms. Although the trap footprint is small, movement of the trap can expand the impact footprint by an order of magnitude. Trap lines cause whale entanglement and death, and there is much interest in reducing the number of vertical lines as well as their potential for entanglement. New technologies for deploying, locating, and recovering traps are now being developed. The future of trap fisheries will require research on new ways to reduce their negative impacts on benthic and pelagic resources (Stevens, B available at : https://doi.org/10.1093/icesjms/fsaa135).

Ghost fishing, the capture and killing of marine organisms by lost or abandoned fishing gear, is a serious ecological and economic problem confronting fisheries. In the case of a study done on the population of red king crab (Paralithodes camtschaticus) in Womens Bay, Kodiak Island, Alaska (W. Christopher Long , Peter A. Cummiskey and J. Eric Munk), they quantified the rate of ghost. From 1991 to 2008, crabs with carapace lengths (CLs) from 42 to 162 mm were tagged with acoustic tags and tracked both from a boat at the surface and by divers. Diver observations were used to determine whether a crab molted or died and, in many cases, to determine the cause of death. Of 192 crabs tracked during this study in association with other projects, 13 were killed in ghost fishing gear (12 in ghost crab pots and 1 in a ghost gill net) and 20 were captured in ghost pots and released alive by divers. We estimate that between 16% and 37% of the population of red king crab with CLs >60 mm in Womens Bay were killed by ghost fishing per year during the period of this study, making ghost fishing a substantial source of mortality.

MSC Fishery Standard v2.01 states that **Ghost fishing** is the mortality of free living or benthic organisms arising from entanglement in lost fishing gear;

The Food and Agriculture Organisation of the UN (FAO) define ghost fishing as the term used for lost or abandoned fishing gear that continues to catch fish.

The MSC Principles and Criteria for Sustainable Fishing include Criteria that relate to ghost fishing and gear loss, including that the fishing operation shall:

• Make use of fishing gear and practices designed to avoid the capture of non-target species and non-target size, age, and/or sex of the target species); minimise mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive (3.B.12);

• Implement appropriate fishing methods designed to minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas (3.B.13); and

• Minimise operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc. (3.B.15).

These Criteria are operationalised in the MSC standard (default tree) throughout Principle 2.

The gear lost information provided by the client on the UoA vessels:

- Wooden pots (both MX and CS): about 4 per day are lost.
- Metal pots (used throughout 2017 and 2018 by CS): lost at the rate of 10 per fishing trip.

With that information, the number of lost traps per year (taking into consideration number of fishing trips and days for each vessel during each year) is as follows:

Table XX. - Number of traps lost for each fishing season and vessel, and overall of traps lost in each of the 3 years assessed. Source: Information provided by the client.

Vessel	Fishing trips (days) 2017	Lost traps 2017	Fishing trips (days) 2018	Lost traps 2018	Fishing trips (days) 2019	Lost traps 2019
Canadian Spirit	5 (118 days)	50 (metallic)	9 (214 days)	90 (metallic)	6 (138 days)	552(wooden)
Maxal	4 (96 days)	384(wooden)	9 (186 days)	744(wooden)	9 (164 days)	656(wooden)
Total number of traps lost/year		434		834		1208

6.3.10 Principle 2 Performance Indicator scores and rationales

PI 2.1.1 – Primary species outcome

PI 2.1.1		The UoA aims to maintain primary species above the point where recruitment would be impaired (PRI) and does not hinder recovery of primary species if they are below the PRI		
Scoring Issue		SG 60	SG 80	SG 100
a	Main primary species stock status			
	Guide post	Main primary species are **likely** to be above the PRI. OR If the species is below the PRI, the UoA has measures in place that are **expected** to ensure that the UoA does not hinder recovery and rebuilding.	Main primary species are **highly likely** to be above the PRI. OR If the species is below the PRI, there is either **evidence of recovery** or a demonstrably effective strategy in place **between all MSC UoAs which categorise this species as main**, to ensure that they collectively do not hinder recovery and rebuilding.	There is a **high degree of certainty** that main primary species are above the PRI **and are** fluctuating around a level consistent with MSY.
	Met?	**No**	**No**	**No**
Rationale				

The observer coverage during 2017-2019 on board the vessels included in the UoA is as follows:

In 2017, 9 out of the 11 fishing trips were covered by observers (82%).
In 2018, 13 of the 18 fishing trips that took place were covered (72%).
In 2019, 4 out of the 15 fishing trips were covered (27%).

This observer coverage information was provided by the client to the assessment team but no further information about the different species caught by the UoA (from logbooks, observers, or any other source) was provided and therefore, it cannot be assessed if there are main primary species caught. This lack of information prevents the team to score this SI and consequently, **SG60 is not met**.

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

	Met?			**No**

Rationale

The only minor primary species identified in this assessment, which was used as bait by the UoA, is the bluefish (*Pomatomus saltatrix*) (see **section 6.3.3**).

<u>Bluefish Stock status</u>

The most recent Atlantic States Marine Fisheries Commission (ASMFC) bluefish stock assessment was completed in 2005. The assessment passed peer review and was approved by the ASMFC Bluefish Management Board and the Mid-Atlantic Fishery Management Council (MAFMC) Coastal Migratory Species Committee. The assessment developed biological reference points for both bluefish biomass and fishing mortality (½BMSY = 73,526 mt; FMSY = 0.19). The ASAP model used to calculate population abundance in this assessment has been updated annually since 2005. The output from this model is used to set the annual Total Allowable Catch (TAC).

The most recent stock status information indicates that bluefish are not overfished and overfishing is not occurring. The biomass estimates in 2008 exceeded the BMSY and therefore bluefish were considered rebuilt two years ahead of the 2010 rebuilding deadline. The 2013 stock assessment update suggests that total biomass in 2012 was 85% of its target. For 2012, fishing mortality rates estimated in ASAP using state and federal indices show a low fishing mortality and a stable trend in population biomass (B2012 = 125.8 MT; F2012 = 0.097). Abundance estimates peaked in 1982 at 166 million fish, but declined to 58 million in the mid-1990s. Since 1997 abundance has generally increased to a high of 99.88 million fish in 2008, although since then, abundance estimates declined to 64.2 million fish in 2012.

Bluefish are managed as a single coastal stock. A benchmark stock assessment (SA) completed in 2015 projected stocks status through 2018. The peer-reviewed assessment used new input data to improve upon the shortcomings of the previous model, which relied heavily on uncertain relationships between spawning stock biomass (SSB) and future recruitment. Catch estimates and juvenile recruitment indices were incorporated into the age-structured assessment program (ASAP) model to produce estimates of fishing mortality (F) and stock biomass. The 2015 assessment resulted in lower biomass estimates and reference points than the previous model, and a 10% decrease in the acceptable biological catch (ABC) to 19.45 million pounds.

Bluefish are not overfished, i.e. spawning stock biomass in 2014 (191 million pounds) was above the SSB threshold (112 million pounds). SSB was 50% of the target level of 223 million pounds. Overfishing is not occurring, i.e. fishing mortality (F) in 2014 (0.157) was below the threshold of 0.17. Fishing mortality has declined steadily since 2007. Coastal recruitment has historically been variable, but a period of low recruitment persisted from 2008-2012. Coastal recruitment in 2013 and 2014 was above average. Total abundance increased in 2014 to 82 million fish, while total stock biomass decreased slightly from 214 million pounds in 2013 to 208 million pounds in 2014.

Apart from the Bluefish classified as Primary minor, the assessment team has no other information about the different species in the UoA and therefore, it cannot be assessed if there are main primary species caught. This lack of information prevents the team to score this SI and consequently, **SG100 is not met**

References

Rootes-Murdy, K., 2104. 2014 Review of the ASMFC fishery management plan for bluefish (*pomatomus saltatrix*), Atlantic States Marine Fisheries Commission. 10pp.

Butowski,N., Morin, R., 2016. 2015 Fishery Management Plans Report to the Legislative Committees. Maryland Department of Natural Resources. 336pp. Available at: https://dnr.maryland.gov/fisheries/Documents/Full_FMP_2016.pdf

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**

Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 2.1.2 – Primary species management strategy

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are **measures** in place for the UoA, if necessary, that are expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are likely to be above the PRI.	There is a **partial strategy** in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are highly likely to be above the PRI.	There is a **strategy** in place for the UoA for managing main and minor primary species.
	Met?	**No**	**No**	**No**
Rationale				

The MSC Fisheries Standard 2.01 defines:

"**Measures**" are actions or tools in place that either explicitly manage impacts on the component or indirectly contribute to management of the component under assessment having been designed to manage impacts elsewhere.
A "**partial strategy**" represents a cohesive arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and an awareness of the need to change the measures should they cease to be effective. It may not have been designed to manage the impact on that component specifically.

A "**strategy**" represents a cohesive and strategic arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and which should be designed to manage impact on that component specifically. A strategy needs to be appropriate to the scale, intensity and cultural context of the fishery and should contain mechanisms for the modification fishing practices in the light of the identification of unacceptable impacts.

The observer coverage during 2017-2019 on board the vessels included in the UoA is as follows:

In 2017, 9 out of the 11 fishing trips were covered by observers (82%).
In 2018, 13 of the 18 fishing trips that took place were covered (72%).
In 2019, 4 out of the 15 fishing trips were covered (27%).

This observer coverage combined with closed areas and fishing depths established in the fishing licenses could be considered a management strategy but as the team has no information regarding the main and minor primary species for the UoA, it cannot be assessed if there are measures/partial strategy/strategy in place for the UoA that are expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are likely to be above the PRI. Therefore, **SG60 is not met.**

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

Due to the lack of information that prevents the team from assessing SIa), this **SI does not meet SG60**.

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

Due to the lack of information that prevents the team from assessing SIa), this **SI does not meet SG80**.

	Shark finning			
d	Guide post	It is **likely** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is not taking place.
	Met?	**No**	**No**	**No**
Rationale				

There is no information on the UoA species caught composition and therefore, **SG60 is not met.**

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

Despite the fact that the assessment team has no information on the species caught by the UoA, the high numbers of lost traps (see Section 6.3.9) by the UoA and the lack of studies on the impact that this lost gear has on the mortality of unwanted catches, this **SG does not meet SG60.**

References

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 2.1.3 – Primary species information

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

There is no qualitative information to estimate the impact of the UoA on the main primary species as no bycatch information collected by the observers or by the fleet have been provided and therefore, **SG60 is not met.**

b	Information adequacy for assessment of impact on minor primary species			
	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status.
	Met?			**No**
Rationale				

There is no quantitative information to estimate the impact of the UoA on the minor primary species as no bycatch information collected by the observers or the fleet have been provided and therefore, **SG100 is not met.**

c	Information adequacy for management strategy			
	Guide post	Information is adequate to support **measures** to manage **main** primary species.	Information is adequate to support a **partial strategy** to manage **main** primary species.	Information is adequate to support a **strategy** to manage **all** primary species, and evaluate with a **high degree of certainty** whether the

				strategy is achieving its objective.
	Met?	**No**	**No**	**No**
Rationale				

There is no information to support measures to manage main primary species as no bycatch information collected by the observers or the fleet have been provided and therefore, **SG60 is not met.**

References

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 2.2.1 – Secondary species outcome

PI 2.2.1		The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit		
Scoring Issue		SG 60	SG 80	SG 100
a	Main secondary species stock status			
	Guide post	Main secondary species are **likely** to be above biologically based limits. OR If below biologically based limits, there are **measures** in place expected to ensure that the UoA does not hinder recovery and rebuilding.	Main secondary species are **highly likely** to be above biologically based limits. OR If below biologically based limits, there is either **evidence of recovery** or a **demonstrably effective partial strategy** in place such that the UoA does not hinder recovery and rebuilding. AND Where catches of a main secondary species outside of biological limits are **considerable**, there is either **evidence of recovery** or a, **demonstrably effective strategy in place between those MSC UoAs that have considerable catches of the species**, to ensure that they collectively do not hinder recovery and rebuilding.	There is a **high degree of certainty** that main secondary species are above biologically based limits.
	Met?	**No**	**No**	**No**
Rationale				

The only 2 species identified and assessed as secondary components are part of the bait used in the red crab fishery, i.e., the Brazilian menhaden (*Brevoortia aurea*) and various (Whitemouth croaker (*Micropogonias fournieri*), Stripped weakfish (*Cynoscion guatucupa*), King weakfish (*Macrodon ancylodon*) and Argentine croaker (*Umbrina canosai*).) (see **section 6.3.3**).

The assessment team has no information about the different % of each species within the "various" group and therefore, even though the whole group of "various" would be considered as main secondary due to the fact that they represent over 5% of the total catch of the UoA, the team cannot assess how each one of these species would be classified. Despite all this, the team also lacks information on the UoA bycatch composition (collected by the observers or the fleet) and therefore, it cannot be assessed if there are any other main secondary species caught. This lack of information prevents the team to score this SI and consequently, **SG60 is not met**.

b	Minor secondary species stock status			
	Guide post			Minor secondary species are highly likely to be above biologically based limits. OR If below biologically based limits', there is evidence that the UoA does not hinder the recovery and rebuilding of secondary species
	Met?			**No**

Rationale

As explained above, the assessment team lacks information about the UoA species composition and therefore, it cannot be assessed if there are minor secondary species caught. This lack of information prevents the team to score this SI and consequently, **SG100 is not met.**

References

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 2.2.2 – Secondary species management strategy

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

The MSC Fisheries Standard 2.01 defines:

"**Measures**" are actions or tools in place that either explicitly manage impacts on the component or indirectly contribute to management of the component under assessment having been designed to manage impacts elsewhere.
A "**partial strategy**" represents a cohesive arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and an awareness of the need to change the measures should they cease to be effective. It may not have been designed to manage the impact on that component specifically.

A "**strategy**" represents a cohesive and strategic arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and which should be designed to manage impact on that component specifically. A strategy needs to be appropriate to the scale, intensity and cultural context of the fishery and should contain mechanisms for the modification fishing practices in the light of the identification of unacceptable impacts.

The observer coverage during 2017-2019 on board the vessels included in the UoA is as follows:

In 2017, 9 out of the 11 fishing trips were covered by observers (82%).
In 2018, 13 of the 18 fishing trips that took place were covered (72%).
In 2019, 4 out of the 15 fishing trips were covered (27%).

This observer coverage combined with closed areas and fishing depths established in the fishing licenses could be considered a management strategy but as the team has no information regarding the main and minor secondary species for the UoA, it cannot be assessed if there are measures/partial strategy/strategy in place which are expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be above biologically based limits or to ensure that the UoA does not hinder their recovery. Therefore, **SG60 is not met.**

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

Due to the lack of information that prevents the team from assessing SIa), this **SI does not meet SG60**.

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

Due to the lack of information that prevents the team from assessing SIa), this **SI does not meet SG80**.

d	Shark finning			
	Guide post	It is **likely** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is not taking place.
	Met?	**No**	**No**	**No**
Rationale				

There is no information on the UoA species caught composition and therefore, **SG60 is not met** as it cannot be confirmed if there are any sharks included in the bycatch that could be classified as secondary species.

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

Despite the fact that the assessment team has no information on the species caught by the UoA, the high numbers of lost traps (see **Section 6.3.9**) by the UoA and the lack of studies on the impact that this lost gear has on the mortality of unwanted catches, this **SG does not meet SG60.**

References

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 2.2.3 – Secondary species information

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

There is no information on the different species of bycatch collected by the observers or by the fleet. This lack of information and, consequently, no P2 species classification under MSC requirements makes the team unable to estimate the impact of the UoA on the main secondary species and therefore, **SG60 is not met.**

b	Information adequacy for assessment of impacts on minor secondary species			
	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status.
	Met?			**No**
Rationale				

There is no quantitative information to estimate the impact of the UoA on the minor secondary species and therefore, **SG100 is not met.**

c	Information adequacy for management strategy			
	Guide post	Information is adequate to support **measures** to manage **main** secondary species.	Information is adequate to support a **partial strategy** to manage **main** secondary species.	Information is adequate to support a **strategy** to manage **all** secondary species, and **evaluate** with a **high degree of certainty** whether the

				strategy is **achieving its objective**.
	Met?	**No**	**No**	**No**

Rationale

There is no information to support measures to manage main secondary species therefore, **SG60 is not met**

References

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 2.3.1 – ETP species outcome

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

As stated by the client, the bycatch in the red crab (*Chaceon notialis*) fishery is insignificant and there is no records of interactions with marine mammals or sea birds. Despite this, the assessment team did not receive any information on bycatch by the UoA and therefore, it cannot be confirmed if there are any ETP interactions. Thus, **SG60 is not met**.

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

<u>Marine Mammals</u>

No records and/or research has been found on trap gear interactions with marine mammals. Such interactions might for example be in the form of entanglement with the buoy lines. PINRO (2015) explicitly stated that no such interactions have been recorded by the crab fishing vessels.

<u>Sharks and rays</u>

According to PAN- Condrictios Uruguay, vessels using traps targeting red crab (*Chaceon notialis*) and Patagonian toothfish incidentally catch rays (*Amblyraja frerichsi* and other species), which are distributed in depths ranging from 600 to 2600 m. The assessment team has no information on the UoA bycatch and therefore, this cannot be assessed. Despite this, the only source of information available, which is from Argentina (see **section 6.3.3a**), includes within their bycatch, different species of sharks and rays.

<u>Sea turtles</u>

Traps and fyke nets are fishing gears used mainly to catch mollusks, lobster, crabs and benthic fish. Interaction with sea turtles has been observed while using these types of fishing gear, however**,** the scarcity of information does not allow for an analysis of the impact level of these methods. Nevertheless, the existing records indicate that sea turtles do indeed interact with this type of fishing gear to some degree. Sánchez *et* *al.* (in press) reported the bycatch of three *D. coriacea*, which were caught on the main line of a boat that was conducting exploratory conch fishing using fyke nets in the Uruguayan EEZ (Domingo et al, 2006).

As the client states that there are no interactions with ETPs in the Red Crab fishery, the team considers that known direct effects of the UoA are likely to not hinder recovery of ETP species. Therefore, **SG60 is met.**

Due to the lack of information from the observer reports, the team cannot confirm that direct effects of the UoA are highly likely to not hinder recovery of ETP species. Thus, **SG80 is not met.**

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

Indirect impacts of the UoA on ETP species potentially include the reduction in the available prey abundance for the ETP species, changes in abundance of the predators of the ETP species, changes in the habitat that could affect the ETP species. The assessment team believes that indirect effects of the red crab fisheries on ETP species are believed to be minimal based on experience. But due to the high number of lost traps and the potential unknown ghost fishing impacts of these traps, the team considers that it cannot be confirmed that indirect effects for the UoA are highly unlikely to not create unacceptable impacts on ETP species, therefore **SG80 requirement is not met.**

References

Steimle FW, Zetlin CA, Chang S. 2001. Essential Fish Habitat Source Document: Red Deep Sea Crab, Chaceon (Geryon) quinquedens, Life History and Habitat Characteristics. NOAA Tech Memo. NEFSC NMFS-NE-163.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 2.3.2 – ETP species management strategy

<table>
<tr><td>PI 2.3.2</td><td colspan="4">The UoA has in place precautionary management strategies designed to:
- meet national and international requirements;
- ensure the UoA does not hinder recovery of ETP species.

Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species</td></tr>
<tr><td colspan="2">Scoring Issue</td><td>SG 60</td><td>SG 80</td><td>SG 100</td></tr>
<tr><td rowspan="3">a</td><td colspan="4">Management strategy in place (national and international requirements)</td></tr>
<tr><td>Guide post</td><td>There are measures in place that minimise the UoA-related mortality of ETP species, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.</td><td>There is a strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.</td><td>There is a comprehensive strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to achieve above national and international requirements for the protection of ETP species.</td></tr>
<tr><td>Met?</td><td>No</td><td>No</td><td>No</td></tr>
<tr><td colspan="5">Rationale</td></tr>
</table>

According to the Client, as stated in PI 2.3.1 SIa), the bycatch in the red crab (*Chaceon notialis*) fishery is insignificant and there are no records of interactions with marine mammals or sea birds. Despite this, the assessment team did not receive any information on bycatch by the UoA and therefore, it cannot be confirmed if there are any ETP interactions. Due to this lack of information, the team cannot confirm that there are **measures** in place that minimise the UoA-related mortality of ETP species, and are expected to be **highly likely to achieve** national and international requirements for the protection of ETP species. Thus, **SG60 is not met**.

<table>
<tr><td rowspan="3">b</td><td colspan="4">Management strategy in place (alternative)</td></tr>
<tr><td>Guide post</td><td>There are measures in place that are expected to ensure the UoA does not hinder the recovery of ETP species.</td><td>There is a strategy in place that is expected to ensure the UoA does not hinder the recovery of ETP species.</td><td>There is a comprehensive strategy in place for managing ETP species, to ensure the UoA does not hinder the recovery of ETP species.</td></tr>
<tr><td>Met?</td><td>No</td><td>No</td><td>No</td></tr>
<tr><td colspan="5">Rationale</td></tr>
</table>

Ley Nº 19.128 SANTUARIO DE BALLENAS Y DELFINES, Ley Nº 9.481 4 de julio de 1935, DECRETO 565 DEL 6 DE NOVIEMBRE DE 1981 de Fauna Silvestre, Decreto N° 514/001, Decreto N° 238/998 y Decreto N° 164/996.

Uruguay has National Plans of Action for reducing seabird bycatch and for chondrichthyan conservation in fisheries. However, no specific information has been found on mitigation measures in these plans applied to the red crab fishery.

Uruguay applies the regulations included in the Comisión Ténica Mixta del frente Marítimo (CTMFM).

According to the Client, as stated in PI 2.3.1 SIa), the bycatch in the red crab (*Chaceon notialis*) fishery is insignificant and there are no records of interactions with marine mammals or sea birds. Despite this, the assessment team did not receive any information on bycatch by the UoA and therefore, it cannot be confirmed if there are any ETP interactions. Due to this lack of information, the team cannot confirm that there are **measures** in place that minimise the UoA-related mortality of ETP species, and are expected to be **highly likely to achieve** national and international requirements for the protection of ETP species. Thus, **SG60 is not met**.

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

Due to the same lack of information that prevents the team from assessing SIa), this **SI does not meet SG60**.

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

Due to the lack of information that prevents the team from assessing SIa), this **SI does not meet SG80**.

e	Review of alternative measures to minimize mortality of ETP species			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality ETP species, and they are implemented, as appropriate.
	Met?	**No**	**No**	**No**
Rationale				

The fact that the assessment team has no information on the species caught by the UoA , prevents the team from having any information regarding the ETPs and as a consequence, no knowledge about alternative measures to minimize mortality of ETPs or the review of these measures. Therefore, **SI does not meet SG60.**

References

List any references here, including hyperlinks to publicly-available documents.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 2.3.3 – ETP species information

PI 2.3.3	Relevant information is collected to support the management of UoA impacts on ETP species, including: - Information for the development of the management strategy; - Information to assess the effectiveness of the management strategy; and - Information to determine the outcome status of ETP species			
Scoring Issue		SG 60	SG 80	SG 100
a	Information adequacy for assessment of impacts			
	Guide post	Qualitative information is **adequate to estimate** the UoA related mortality on ETP species. **OR** **If RBF is used to score PI 2.3.1 for the UoA:** Qualitative information is **adequate to estimate productivity and susceptibility** attributes for ETP species.	Some quantitative information is **adequate to assess** the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species. **OR** **If RBF is used to score PI 2.3.1 for the UoA:** Some quantitative information is **adequate to assess productivity and susceptibility attributes** for ETP species.	Quantitative information is available to assess with a high degree of certainty the **magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status** of ETP species.
	Met?	**Yes**	**No**	**No**
Rationale				

As explained in SI 2.3.1a), no information on the UoA bycatch has been provided to the assessment team but as explained in SI 2.3.1 b), there is some qualitative information consider **adequate to estimate** the UoA related mortality on ETP species. Thus**, SG60 is met**.

No further information is provided and therefore, it cannot be considered that some quantitative information is **adequate to assess** the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species**. SG 80 is not met**.

b	Information adequacy for management strategy			
	Guide post	Information is adequate to support **measures** to manage the impacts on ETP species.	Information is adequate to measure trends and support a **strategy** to manage impacts on ETP species.	Information is adequate to support a **comprehensive strategy** to manage impacts, minimize mortality and injury of ETP species, and evaluate with a **high degree of**

				certainty whether a strategy is achieving its objectives.
	Met?	**No**	**No**	**No**
Rationale				

The only information provided about the potential ETPs interaction with the UoA is the client statement that there are no ETPs' interactions. Therefore, the information is not adequate to support measures to manage the impacts on ETP species, thus **SG60 is not met.**

References

List any references here, including hyperlinks to publicly-available documents.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 2.4.1 – Habitats outcome

PI 2.4.1		The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates		
Scoring Issue		SG 60	SG 80	SG 100
a	Commonly encountered habitat status			
	Guide post	The UoA is **unlikely** to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	The UoA is **highly unlikely** to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	There is **evidence** that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.
	Met?	**Yes**	**No**	**No**
Rationale				

Commonly encountered habitats are defined by MSC Requirements (MSC Fisheries Standard 2.01 GSA3.13.3.1) as those preferred by the target species, that the UoA's gear is designed to exploit, and/or make up a reasonable portion of the UoA's fishing area. In the red crab fishery, the commonly encountered habitat is the continental platform in rock and sandy bottoms.

Pots are considered less damaging compared to trawls or dredges because pots are predominantly static gears (NOAA 201764). Although they are a bottom gear, they have contact with a substantially smaller area of the seafloor than dredges or trawls. Pots can affect habitat, however, because they do not always remain entirely stable on the seafloor. They can get dragged across the seafloor when being removed, especially during a storm or when pots are stuck in the sand (Morgan and Chuenpagdee, 2003). Morgan and Chuenpagdee (2003) conducted a study to gauge the relative severity of impacts associated with all commercial fishing gears and compare and rank the overall ecological impact of each gear type. They found that pots (including the kind used in the red king crab fishery) generally have a "medium impact" on physical structure and a "low impact" on biological habitat (seafloor organisms).

The impact of fishing gear on habitat also depends on the spatial scale of the fishery, because although each pot may have a small impact, the cumulative effect of thousands of pots can be larger (Morgan and Chuenpagdee, 2003).

A better understanding of how passive fishing gear, such as the 20-trap lines in Schweitzer et al. study, impacts complex habitat can facilitate a shift toward ecosystem-based fisheries management. They observed traps being dragged along the floor and colliding with and breaking clay bedforms, running over stone coral, breaking gorgonian corals, burying epifauna, and overturning cobble. During retrieval, traps were dragged along the ocean floor for various durations, such that there was a significant correlation between trap position and drag time. Previous research investigating trap impacts on benthic habitat suggested that traps created minimal disturbance (Eno et al., 2001; Stephenson et al., 2017). Therefore, it is considered that the UoA is **unlikely** to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm. Thus **SG60 is met**.

However, these studies investigated the impacts of single trap or three-trap lines. In the UoA that is being assessed, the fishing vessel Maxal II uses 4 fishing lines and the Canadian Spirit 6 fishing lines. Ground lines have between 200-220 baited traps. That gives us an overall number of 840-1260 traps used in each vessel. There are no studies that have investigated the impact of such amount of traps in the habitat and therefore, the assessment team cannot state that the UoA is **highly unlikely** to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm. Thus, **SG80 is not met**.

b	VME habitat status			
	Guide post	The UoA is **unlikely** to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	The UoA is **highly unlikely** to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	There is **evidence** that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.
	Met?	**No**	**No**	**No**
Rationale				

In the Uruguayan red crab fishing area, we can encounter the following VMEs (AltaMar DINAMA-MVOTMA, 2016) (see **section 6.3.8** for further details):

1.- Cañones submarinos
2.- Pockmarks
3.- Elevaciones submarinas
4. - Arrecifes coralinos de aguas profundas

In the observer´s reports instructions, it is stated that when pot fishing is conducted, primarily at depths between 250 and 400 m, it is necessary to record the presence of vulnerable marine ecosystem (VME) indicator organisms to determine if a VME has been encountered. This includes primarily the presence of cold water corals and benthic organisms that may be associated with or attached to corals, either inside the pots, outside the pots, on headlands, orinques, etc. Samples should be brought in fixed and appropriately labeled with haul number, latitude, longitude and depth. The client stated that these indicator organisms have never been registered in the crab´s pots, but as the assessment team had no access to the observers report and/or bycatch information, this cannot be confirmed.

Corals exist next to the fishing zone and even though the interference zone seems to be very small, there are some evidences that overlapping exists. The ad hoc AltaMar DINAMA-MVOTMA, 2016 states that fishing activities using pots targeting *Chaceon notialis* (red crab) have also been described over the area where the corals are found (UDELAR-ANCAP, 2012).

Next two figures show the distribution of corals within the Uruguayan EEZ by Ad hoc Altamar DINAMA-MVOTMA (2016) and Carranza et al. (2012):

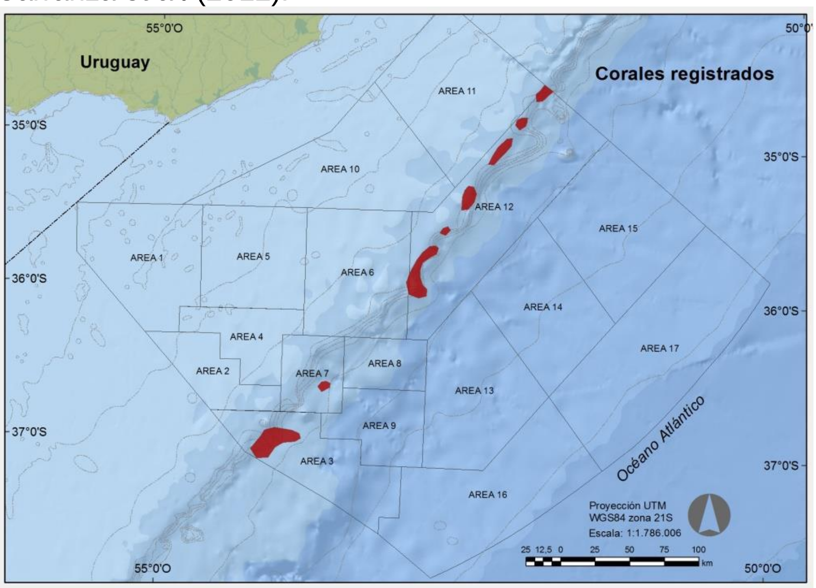


Figure XXX. Localización de los arrecifes coralinos registrados en la ZEE uruguaya (ad hoc Altamar).

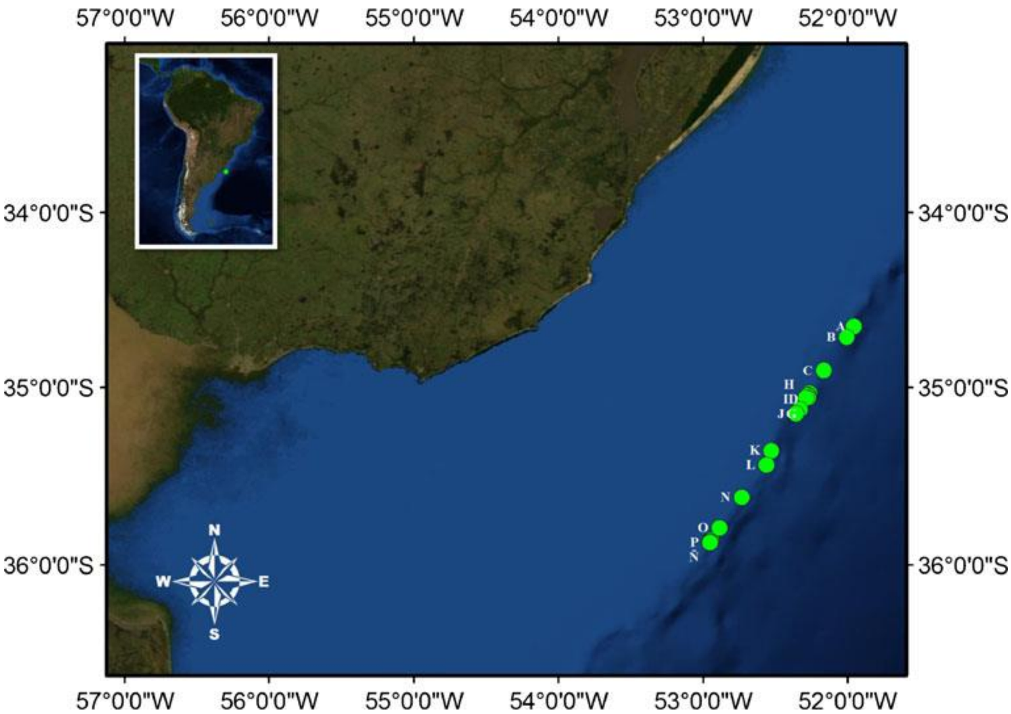


Figure XXX. Location of the identified mounds (A–P) where coral reefs were detected on the Uruguayan outer shelf and slope (Carranza et al 2012).

Hereafter, it can be seen the maps with different areas where the 2 assessed vessels conducted their fishing operations during 2017, 2018 and 2019.

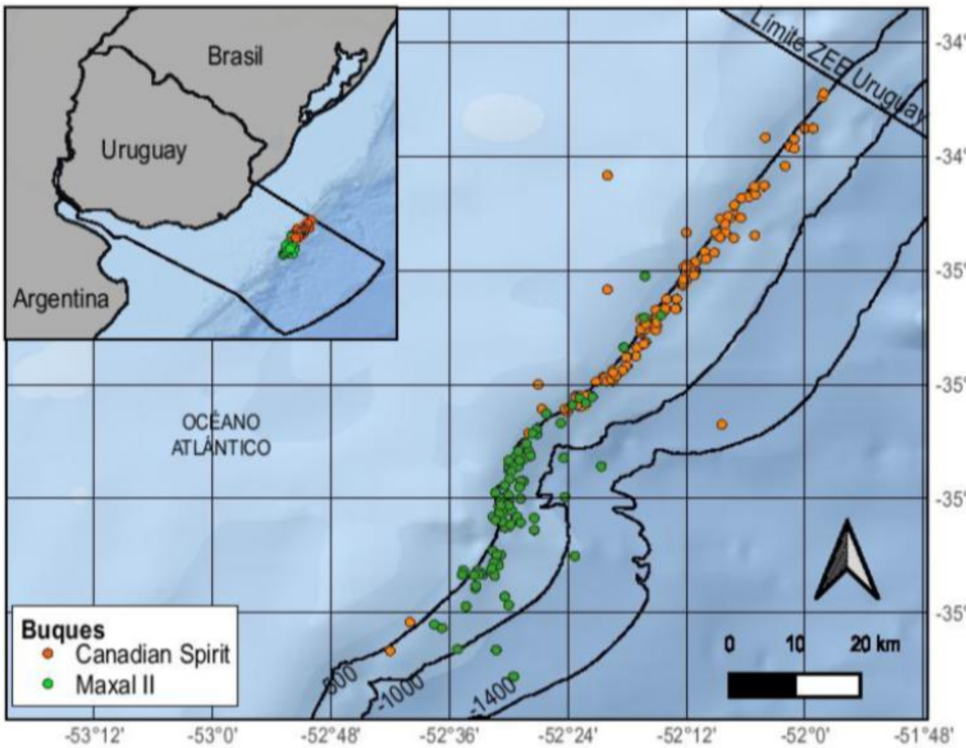


Figure XXX. Localización de los lances de pesca para los buques Maxal II y Canadian Spirit para el año 2017.

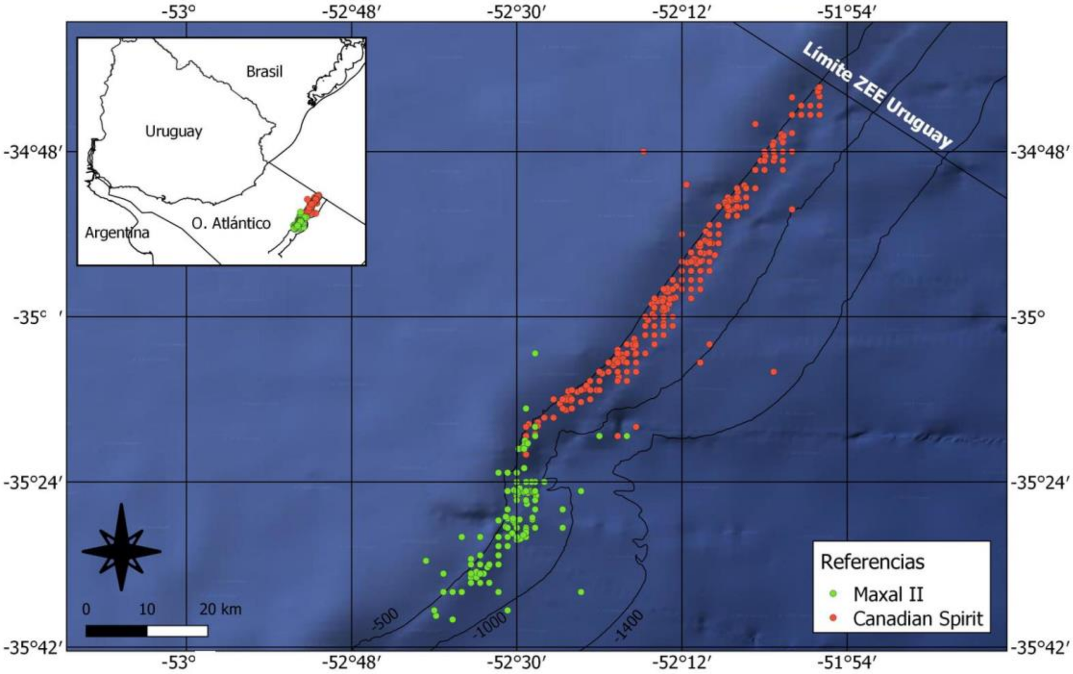


Figure XXX.- Localización de los lances de pesca para los buques Maxal II y Canadian Spirit para el año 2018.

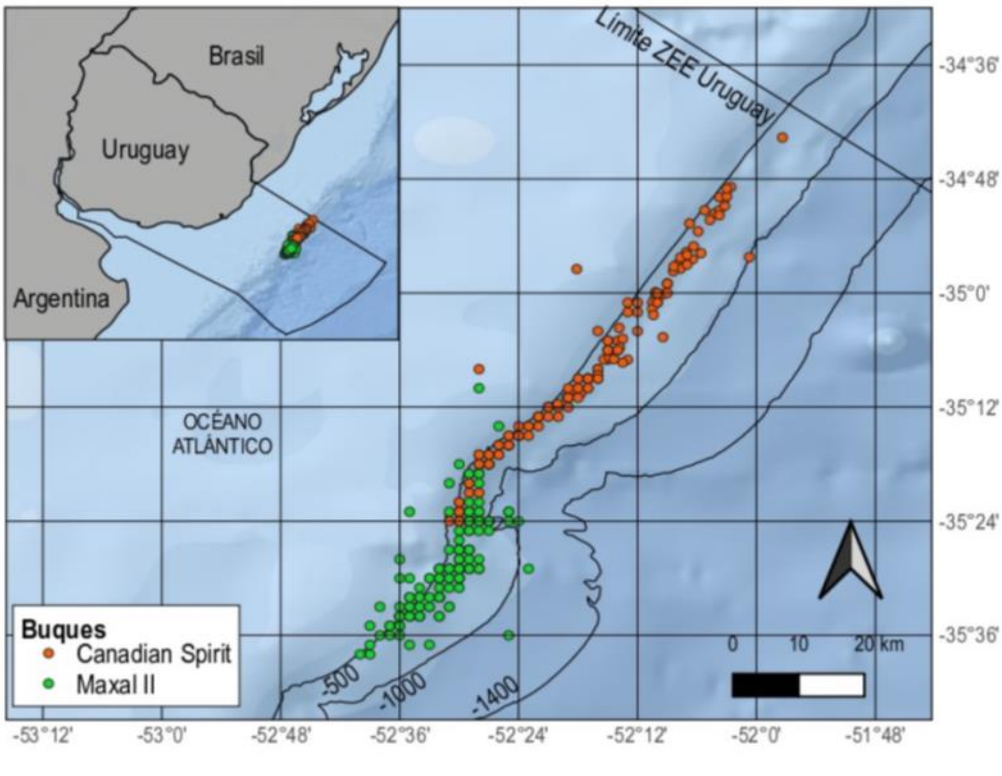


Figure XXX. Localización de los lances de pesca para los buques Maxal II y Canadian Spirit para el año 2019.

The maps with the different fishing areas provided by the client in the "Informe sobre la operativa de pesca del cangrejo rojo Chaceon notialis en Uruguay en el año 2017, 2018 y 2019" have been overlapped with the different VMEs maps in the ad hoc AltaMar DINAMA-MVOTMA, 2016 (Figure XXX) and also with the coral distribution maps obtained from the Carranza et at 2012 report (Figure XXX). Maps from these sources have different latitude-longitudes scales and it was complicated to overlap them but it is obvious the close proximity of the red crab fishery to these VMEs, therefore further maps and analyses need to be obtained to be able to assess this SI. Thus, **SG60 is not met**.

	Minor habitat status			
c	Guide post			There is **evidence** that the UoA is highly unlikely to reduce structure and function of the minor habitats to a point where there would be serious or irreversible harm.
	Met?			**No**

Rationale

Minor habitats are defined by MSC as those that do not fall within the classification of Commonly Encountered Habitats or VMEs (GSA3.13.3).

Based on this definition, no minor habitats have been identified in this assessment. However, studies to gain knowledge about the impact of the fishery on the bottom habitats' structure and function are unlikely to be a priority for funding and there is no evidence that the UoA is highly unlikely to reduce structure and function of minor habitats to a point where there would be serious or irreversible harm. **SG100 is not met**.

References

Morgan, L.E. and R. Chuenpagdee. 2003. Shifting Gears: Addressing Collateral Impacts of Fishing Methods in U.S. Waters. Accessed on: October 9, 2006.: http://www.mcbi.org/publications/pub_pdfs/Chuenpagdee_et_al_2003.pdf

PINRO (2014), Results from analysis of the impact of the red king crab Paralithodes Camtschaticus on the Barents Sea ecosystem in the context of the biology and current status of fishery of this commercial crustacean species, Murmansk: PINRO.

Impacts of a multi-trap line on benthic habitat containing emergent epifauna within the Mid-Atlantic Bight

Cara C. Schweitzer 1,*, Romuald N. Lipcius2, and Bradley G. Stevens1

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 2.4.2 – Habitats management strategy

PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are **measures** in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a **partial strategy** in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a **strategy** in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.
	Met?	**Yes**	**No**	**No**
Rationale				

A spatial management framework is proposed, which includes closing areas to fishing where ovigerous females, juvenile crabs and largest males are concentrated The observed long-term and recurrent spatial patterns in relative abundance, population structure, segregation by sex and condition, commonly seen in sedentary and sessile invertebrates (Orensanz and Jamieson, 1998; Orensanz et al., 1998; Caddy and Defeo, 2003; Hamilton et al., 2011; Biscoito et al., 2015; Gardner et al., 2015), suggest the need to implement a spatial management framework to harvest *C. notialis*. In this setting, fishing at the northernmost edge (35º00' – 35º40' S) is detrimental because reproduction occurs at these latitudes, with egg bearing females occurring mainly at 300 and 400 m. In addition, more than 50% of moulting and sexually mature and receptive females were found at these northern latitudes. This spawning area is restricted to specific latitudes and depths and should be closed to fishing to protect the stock. However, the fishing area of the B/P Canadian Spirit did not vary substantially within 2018 or with respect to 2017. The fishing trips were concentrated in the northern area, at 34°41' - 35°21' S latitude and 51°57' - 52°58' W longitude, close to the territorial sea boundary with Brazil. The B/P Maxal II, operated at minimum depths of 503 m and maximum depths of 790 m, with an average depth of 623 m in latitudes between 35°16' and 35°42' S and longitudes between 52°22' and 52°44' W, corresponding to latitudes further south than the Canadian Spirit, although they would be north-central latitudes in relation to the area available for fishing.

Fishing activities should also be limited at depths higher than 1200 m, where recruitment takes place according to the clear decrease in individual weight with depth observed from 1200 to 1600 m. Moreover, the capture of the largest males in the southernmost edge of the range at depths <500 m may affect the reproductive capacity of the population (Hankin et al., 1997; Wahle et al., 2008), suggesting that shallow depths <500 m should be closed to harvesting activities throughout the entire distribution range of the species in Uruguayan waters. This spatial management framework is also consistent with operational measures implemented in Brazilian waters for the same species, which include the restriction of harvesting activities to depths shallower than 400 m, a fishing ban between July and December at depths shallower than 600 m and a maximum of 2 operating fishing vessels to harvest the resource (Instruc¸ ão Normativa SEAP/PR N◦23, 2008).

Management measures based on controls of catch, effort and individual sizes have proved historically unsuccessful as control mechanisms for balancing fishing fleet capacity and productivity of deep sea red crab stocks (Hastie, 1995). The significant latitudinal and bathymetric gradients detailed here could be used to set spatially explicit management tools (e.g., area closures) to diminish overexploitation risks. In fact, spatial closures have been recently implemented in several invertebrate fisheries, including scallops, sea urchins and crabs. For the red crab fishery in Uruguayan waters, the isobaths comprised between 300 and 500m depth could be closed to fishing, due to the presence of the highest percentages of ovigerous females, mainly between latitudes 35"00#S and 35"40#S (NE) towards Brazilian waters. Fishing at low depths should also be avoided at southern latitudes, where high proportions of big male sizes are needed to assure female fertilization. Fishing activities should also be restricted at depths > 1200 m, where the occurrence of high numbers of small size individuals suggests a recruitment area.

So, there are several management measures intended to serve multiple purposes (resource conservation, effort control, etc.) that also provide direct benefits to habitat. These measures include depth limits, type of traps, minimum size limit and male only fishery. Therefore, it is considered that are **measures** in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance. Thus, **SG60 is met**.

Most of these management measures are just included in the fishing licenses and not in a Decree or a fishing law. Also, considering the aggregated nature of the distribution of the species and the fishing process, these spatially explicit management tools should be simultaneously used with effort regulations, in a framework of management redundancy. Strong cooperation between managers and stakeholders (fishers and industry) in a co-management framework should be encouraged in order to improve management and to lower costs associated with control, monitoring and compliance with fishery regulations. Therefore, the team considers that there is not a **partial strategy** in place, if necessary that is expected to achieve the Habitat Outcome 80 level of performance or above and further information would need to be gathered in a site visit to potentially achieve **SG80**.

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

As explained above in SIa) and taking into consideration that those measures are also used in similar fisheries, the team considers that the measures are **considered likely** to work, based on plausible argument. Therefore, **SG60 is met.**

The team cannot confirm that there is some **objective basis for confidence** that the measures/partial strategy will work, based on **information directly about the UoA and/or habitats** involved. **SG80 is not met.**

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

There is **some quantitative evidence** that the measures/partial strategy, including depth limits, type of traps, minimum size limit and male only fishery are being implemented successfully. Therefore, **SG80 is met.**

d	Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs			
	Guide post	There is **qualitative evidence** that the UoA complies with its management requirements to protect VMEs.	There is **some quantitative evidence** that the UoA complies with both its management requirements and with protection measures	There is **clear quantitative evidence** that the UoA complies with both its management requirements and with protection measures

			afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.	afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
	Met?	**No**	**No**	**No**

Rationale

All the information analyzed on the “Identification of ecologically relevant environments in the Uruguayan exclusive economic zone” ad hoc Altamar, 2016 had the overall goal of identification, characterization, localization and prioritization of these ecologically relevant environments (VMEs).This information is intended to be useful to guide and support decision making, spatial planning of marine space and to advance in the design of strategies aimed at controlling or mitigating pressures on biodiversity and ecosystem services and their protection for future generations.

These papers refers to different legal aspects when talking about deep-water coral reefs: UNCLOS Cap. XII (establishes the need to take measures for the protection and conservation of fragile ecosystems) and Resolution 58/240 of UNCLOS reiterates the need to integrate the management of risks to cold water coral reef biodiversity and stresses the need to incorporate coral reef management into national development strategies.

The assessment team has no knowledge of **qualitative evidence** that the UoA complies with these management requirements to protect VMEs. Therefore, **SG60 is not met**.

References

The deep-sea red crab Chaceon notialis (Geryonidae) in the southwestern Atlantic Ocean: Spatial patterns and long-term effects of fishing 2016. Arianna Masello, ∗, Omar Defeo, b

Spatial distribution patterns in biomass and population structure of the deep sea red crab Chaceon notialis in the Southwestern Atlantic Ocean (2011)

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 2.4.3 – Habitats information

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat		
Scoring Issue		SG 60	SG 80	SG 100
a	Information quality			
	Guide post	The types and distribution of the main habitats are **broadly understood**. **OR** **If CSA is used to score PI 2.4.1 for the UoA:** Qualitative information is adequate to estimate the types and distribution of the main habitats.	The nature, distribution and **vulnerability** of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA. **OR** **If CSA is used to score PI 2.4.1 for the UoA:** Some quantitative information is available and is adequate to estimate the types and distribution of the main habitats.	The distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats.
	Met?	**Yes**	**No**	**No**
Rationale				

As described in detail in Section 6.3.8, the team considers that the types and distribution of the main habitats are **broadly understood,** therefore **SG60 is met.**

The nature, distribution and **vulnerability** of the main habitats in the UoA area are not known at a level of detail relevant to the scale and intensity of the UoA due to the proximity to the VMEs and lack of accurate overlapping maps. Therefore, **SG80 is not met.**

b	Information adequacy for assessment of impacts			
	Guide post	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear. OR **If CSA is used to score PI 2.4.1 for the UoA:** Qualitative information is adequate to estimate the consequence and spatial attributes of the main habitats.	Information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear. OR **If CSA is used to score PI 2.4.1 for the UoA:** Some quantitative information is available and is adequate to estimate the consequence	The physical impacts of the gear on all habitats have been quantified fully.

			and spatial attributes of the main habitats.	
	Met?	**No**	**No**	**No**
Rationale				

GSA3.13.3 clearly states that the determination of commonly encountered habitats and VMEs (both of which are treated as “main” habitats in the information PI 2.4.3) should be supported by evidence provided by the UoA to the assessment team. Therefore, the team considers that the information is not adequate to broadly understand the nature of the main impacts of gear use on the main habitats, especially in the VMEs, including spatial overlap of habitat with fishing gear. **SG60 is not met.**

c	Monitoring			
	Guide post		Adequate information continues to be collected to detect any increase in risk to the main habitats.	Changes in all habitat distributions over time are measured.
	Met?		**No**	**No**
Rationale				

With the information provided to the assessment team, it cannot be confirmed that adequate information continues to be collected to detect any increase in risk to the main habitats. **SG80 is not met.**

References

List any references here, including hyperlinks to publicly-available documents.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 2.5.1 – Ecosystem outcome

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
a	Ecosystem status			
	Guide post	The UoA is **unlikely** to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The UoA is **highly unlikely** to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	There is **evidence** that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
	Met?	**Yes**	**No**	**No**
Rationale				

As reported in Steimle et al. (2001), there is little indication that red crabs constitute a major prey item for any species. There are a few records of predation on red crabs, but these appear only as minor components of prey sources. Also, there are few records of red crab prey sources. Sea anemones may be a desired prey, but most likely red crabs are opportunistic omnivores due to the limited availability of food at the water depths common for this species (Steimle et al., 2001). Steimle et al. (2001) describes few competitive interactions between red crab and any other fishery resources. The primary competitive interactions involve Jonah crab, *Cancer borealis*, American lobster, *Homarus americanus*, and golden crab, *Chaceon fenneri*, but none of these appears significant. There is no information that suggests red crabs are a significant, or even a minor, component of the diets of any marine mammals or endangered species. The effect of the red crab fishery on the continental slope ecosystem trophic structure and function, community composition, and biodiversity, has not been formally addressed by the management agencies to date, however it can be reasonably assessed from existing information. As has been noted previously, red crab females that are captured and discarded have a high survival. Therefore, the team considers that the UoA is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. Thus, **SG60 is met**.

The gear lost information provided by the client on the UoA vessels is as follows:

- Wooden pots (both MX and CS): about 4 per day are lost.
- Metal pots (used throughout 2017 and 2018 by CS): lost at the rate of 10 per fishing trip.

With that information, the number of lost traps per year (taking into consideration number of fishing trips and days for each vessel during each year) has been estimated (Table XX).

Table XX.- Number of traps lost for each fishing season and vessel, and overall of traps lost in each of the 3 years assessed. Source: Information provided by the client.

Vessel	Fishing trips (days) 2017	Lost traps 2017	Fishing trips (days) 2018	Lost traps 2018	Fishing trips (days) 2019	Lost traps 2019
Canadian Spirit	5 (118 days)	50 (metallic)	9 (214days)	90 (metallic)	6 (138 days)	552(wooden)
Maxal	4 (96 days)	384(wooden)	9 (186 days)	744(wooden)	9 (164 days)	656(wooden)
Total number of traps lost/year		434		834		1208

The fact that the red crab stock status is unknown (last stock assessment in 1991), that the team has no information on the UoA bycatch to assess its impact on habitats and ETP species, and that there are no studies on the effect that a high number of lost pots can have in the area and close to a VMEs area leads the team to confirm that there is no clear evidence that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. **SG80 is** not **met.**

References

Steimle FW, Zetlin CA, Chang S. 2001. Essential Fish Habitat Source Document: Red Deep sea Crab, Chaceon (Geryon) quinquedens, Life History and Habitat Characteristics. NOAA Tech Memo. NEFSC NMFS-NE-163

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**60-79**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 2.5.2 – Ecosystem management strategy

PI 2.5.2		There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are **measures** in place, if necessary which take into account the **potential impacts** of the UoA on key elements of the ecosystem.	There is a **partial strategy** in place, if necessary, which takes into account **available information and is expected to restrain impacts** of the UoA on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	There is a **strategy** that consists of a **plan**, in place which contains measures to **address all main impacts of the UoA** on the ecosystem, and at least some of these measures are in place.
	Met?	**No**	**No**	**No**
Rationale				

With the high number of lost pots within the UoA, the proximity of the fishery to the VMEs and no management strategy that considers the effect of all these pots being dragged alongside the seabed or the potential unwanted mortality related to this lost pots, we cannot consider that there are **measures** in place, if necessary which take into account the **potential impacts** of the UoA on key elements of the ecosystem. Therefore, **SG60 is not met**.

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

As explained in previous PIs (2.1.2, 2.2.2, 2.3.2 and 2.4.2), due to the lack of information that prevents the team from assessing Primary, Secondary, and ETP species, the assessment team cannot assess if the measures are considered likely to work based on plausible argument. Thus, **SG 60 is not met**.

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

Rationale

There are no evidences that the measures are being implemented successfully. **SG80 is not met.**

References

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 2.5.3 – Ecosystem information

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem		
Scoring Issue		SG 60	SG 80	SG 100
a	Information quality			
	Guide post	Information is adequate to **identify** the key elements of the ecosystem.	Information is adequate to **broadly understand** the key elements of the ecosystem.	
	Met?	**Yes**	**No**	
Rationale				

Based on what has been explained in SI 2.5.1a), the team considers that the information is adequate to identify the key elements of the ecosystem, therefore, **SG60 is met.**

b	Investigation of UoA impacts			
	Guide post	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, but **have not been investigated** in detail.	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and **some have been investigated in detail**.	Main interactions between the UoA and these ecosystem elements can be inferred from existing information, and **have been investigated in detail**.
	Met?	**Yes**	**No**	**No**
Rationale				

As explained above in PI 2.5.1 and PI 2.5.2, main impacts of the UoA on these key ecosystem elements can be inferred from existing information (similar fisheries, scientific intomation,.), but **have not been investigated** in detail. Therefore, **SG60 is met** and **SG80 is not met.**

c	Understanding of component functions			
	Guide post		The main functions of the components (i.e., P1 target species, primary, secondary and ETP species and Habitats) in the ecosystem are **known**.	The impacts of the UoA on P1 target species, primary, secondary and ETP species and Habitats are identified and the main functions of these components in the ecosystem are **understood**.
	Met?		**No**	**No**
Rationale				

As the team has no information on the UoA bycatch and no knowledge of the primary, secondary and ETP species caught by the assessed vessels, it is concluded that the main functions of these components in the ecosystem are unknown. Thus, **SG80 is not met**.

d	Information relevance			
	Guide post		Adequate information is available on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.	Adequate information is available on the impacts of the UoA on the components **and elements** to allow the main consequences for the ecosystem to be inferred.
	Met?		**No**	**No**
Rationale				

As stated above, there is no knowledge of all the components (primary, secondary and ETP species and Habitats) and therefore, the impacts of the UoA on these components cannot be assessed. Therefore, **SG80 is not met.**

e	Monitoring			
	Guide post		Adequate data continue to be collected to detect any increase in risk level.	Information is adequate to support the development of strategies to manage ecosystem impacts.
	Met?		**No**	**No**
Rationale				

The biggest risk found (with the information provided to the assessment team) associated to the impact of the UoA in the ecosystem is the high number of lost pots by both assessed vessels (see **section 6.3.9** for further information). There is information collected on this by the client but due to the lack of information regarding the UoA bycatch (collected by the observers or by the fleet itself), the team cannot say that adequate data continues to be collected to detect any increase in risk level. Thus, **SG80 is not met.**

References

List any references here, including hyperlinks to publicly-available documents.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**60-79**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

6.4 Principle 3

6.4.1.1 Area of operation of the fishery

La pesquería de cangrejo rojo se realiza dentro de la Zona Económica Exclusiva de Uruguay, limitando al norte con la ZEE de Brasil y dentro de la denominada Zona Común de pesca Argentino-Uruguaya (ZCPAU).

Los permisos de pesca incluyen una zona de pesca más acotada en relación con las profundidades (entre 500 y 1100 m) con el fin de proteger a las hembras ovígeras, hembras con signos de muda y machos más grandes en profundidades menores a los 500 m en todo el rango latitudinal, así como el reclutamiento en torno a los 1200 y 1400 m.

6.4.1.2 Jurisdiction of the fishery

La pesquería se lleva a cabo íntegramente en la Zona Económica Exclusiva de Uruguay y dentro de la dentro de la denominada Zona Común de pesca Argentino-Uruguaya (ZCPAU) que fue establecida a partir de la firma del Tratado del Río de la Plata y su Frente Marítimo entre la República Oriental del Uruguay y la República Argentina.

6.4.1.3 Particulars of the recognised groups with interests in the UoA

Además de la empresa Cooke Uruguay S.A. armadora de los dos buques de pesca que integran la UoA y la UoC no hay otras partes interesadas que capturen cangrejo rojo en la UoA.

6.4.1.4 Consultations, decision-making process or processes and recognised participants

A nivel nacional, la Ley Nº 19.175 RECURSOS HIDROBIOLÓGICOS DECLARA DE INTERÉS GENERAL SU CONSERVACIÓN, INVESTIGACIÓN Y DESARROLLO SOSTENIBLE de enero de 2014, es la norma base de la regulación de las actividades pesqueras y la acuicultura del país.

Esta Ley fue reglamentada a través del Decreto Nº 115/018 de 24/04/2018[1] y su modificación posterior a través del Decreto Nº 269/018 de 27/08/2018.

La normativa en vigor establece los criterios y obligaciones para ejercer la actividad pesquera. Esto incluye un marco diferenciado para la pesca de subsistencia, artesanal e industrial. Además, determina cómo se gestiona la actividad y los roles y funciones de cada una de las partes implicadas.

Por otra parte, la Ley establece las funciones de la Dirección Nacional de Recursos Acuáticos (DINARA) siendo el organismo al que el Poder Ejecutivo delega la gestión y seguimiento de las actividades pesqueras. También está encargada del desarrollo y normativa de la acuicultura y de los cuestiones de índole sanitaria de los productos pesqueros. La DINARA también tiene el rol de llevar a cabo investigación pesquera y dispone de personal, instalaciones y un barco de investigación (Aldebarán).

A nivel internacional, el marco normativo del Sector Pesquero uruguayo incluye acuerdos de naturaleza obligatoria, tales como la Convención de las Naciones Unidas sobre el Derecho del Mar (suscrita en 1982 y ratificada en 1992), el Tratado de Límites en el Río Uruguay (1961), el Tratado del Río de la Plata y su Frente Marítimo (1973) y el Estatuto del Río Uruguay (1975), el Acuerdo sobre medidas del estado rector del puerto destinadas a prevenir, desalentar y eliminar la pesca ilegal, no declarada y no reglamentada (ratificada en 2013), Convención de las Naciones Unidas sobre el Derecho del Mar de 10 de diciembre de 1982, relativas a la conservación y ordenación de las poblaciones de peces transzonales y las poblaciones de peces altamente migratorios. Existe, además, un conjunto de instrumentos internacionales de carácter no obligatorio que incluyendo el Código de Conducta para la Pesca Responsable de FAO (1995).

[1] Decreto N° 115/018 REGLAMENTACION DE LA LEY 19.175 RELATIVO A LA DECLARACION DE INTERES GENERAL. CONSERVACION, INVESTIGACION Y EL DESARROLLO SOSTENIBLE DE LOS RECURSOS HIDROBIOLOGICOS Y ECOSISTEMAS

Uruguay participa en diversos foros y comisiones internacionales relacionadas con la ordenación, protección y el desarrollo de los recursos pesqueros, siendo las principales:

- Comisión Técnica Mixta del Tratado del Río de la Plata y su Frente Marítimo (entre Uruguay y Argentina)
- Comisión Administradora del Río de la Plata - CARP
- Comisión Administradora del Río Uruguay - CARU
- Comisión Mixta Uruguayo-Brasileña para el desarrollo de la cuenca de la laguna Merin (CLM).
- Comité Internacional de la pesca del atún en el Atlántico (ICCAT)
- Comisión para la Conservación de los Recursos Vivos Marinos Antárticos - CCRVMA (CCAMLR)
-

Además de lo anterior, a nivel interno existen el Consejo Consultivo de Pesca, el Consejo Consultivo de Acuicultura y los Consejos Zonales y Locales Pesqueros. El Consejo Consultivo de Pesca tiene como principal objetivo actuar como órgano asesor del Poder Ejecutivo en todas las materias relacionadas con la pesca. El Consejo servirá como ámbito de intercambio participativo de ideas, sin que las mismas tengan carácter vinculante para la Administración.

Respecto a sus integrantes, formarán parte, entre otros, representantes de la DINARA, de los Ministerios de Defensa Nacional, Relaciones Exteriores y Vivienda, Ordenamiento Territorial y Medio Ambiente. Además, los pescadores formarán parte del Consejo a través de un representante de los armadores industriales y otro de los pescadores artesanales.

El Consejo Consultivo de Pesca podrá convocar a los organismos y dependencias con competencias específicas vinculadas a la pesca, cuando sea requerido su asesoramiento.

Los Consejos Zonales Pesqueros tienen, por ley, el objetivo de participar en el co-manejo de los recursos en cada zona pesquera, aunque sus decisiones no serán vinculantes para la Administración. En cada uno de los Consejos Zonales participan dos representantes de los pescadores, así como otros representantes de la Administración del país. Incluyendo a los alcaldes de las localidades de cada zona, un representante de la DINARA y otro de la Prefectura Naval. Estos Consejos están más orientados a la pesca artesanal y tienen los siguientes cometidos:

a) brindar a las organizaciones de pescadores un ámbito de discusión de aquellos temas relacionados a la actividad pesquera dentro de la respectiva zona;

b) establecer mecanismos de coordinación de las propuestas que realicen dichas organizaciones con otros organismos involucrados;

c) proporcionar un ámbito de participación de los actores del sector en los procesos de toma de decisiones en temas relativos a la actividad y su desarrollo de la zona.

Todas las propuestas que se discutan en estos Consejos deben estar orientadas a la utilización responsable de los recursos pesqueros, así como la conservación de la biodiversidad y los ecosistemas que la contienen.

Los Consejos constituyen mecanismos de consulta que dan la oportunidad a todas las partes interesadas a debatir y aportar ideas para mejorar los procesos de gestión, pero no tiene un carácter vinculante.

Estructura administrativa

Uruguay a través del Ministerio de Ganadería, Agricultura y Pesca es el responsable de la política vinculada a los recursos hidrobiológicos del país mediante 4 cometidos especiales:

1) Acordar con los Ministerios competentes, el establecimiento y la regulación de los sitios de desembarque y acopio de productos pesqueros.

2) Promover la armonización legislativa con otros países en materia de sanidad e inocuidad alimentaria a fin de favorecer la comercialización de los productos pesqueros uruguayos.

3) Suscribir convenios o acuerdos internacionales sobre todos los aspectos relativos a la pesca y a la acuicultura, previa consulta con la Dirección Nacional de Recursos Acuáticos del Ministerio de Ganadería, Agricultura y Pesca.

4) Proponer las medidas tendientes al fomento de la acuicultura

La Dirección Nacional de Recursos Acuáticos (DINARA) es la entidad delegada del Ministerio para, la investigación del estado de los recursos pesqueros, la orientación, el fomento y el desarrollo, en todos sus aspectos, de las actividades relacionadas con el aprovechamiento responsable de los recursos hidrobiológicos, de los ecosistemas que los contienen y de las industrias derivadas, a nivel público y privado. En este sentido, es la encargada de ejecutar y controlar el cumplimento de todas las actividades vinculadas con la pesca y la acuicultura, de conformidad con la Ley. Además, se encarga de la promoción para la participación en la administración de los recursos hidrobiológicos de todas las personas interesadas a través del Consejo Consultivo de Pesca, del Consejo Consultivo de Acuicultura y de los Consejos Zonales y Locales Pesqueros.

Las atribuciones particulares de la DINARA, se exponen en el artículo 12 de la Ley 19.15:

A) Ejecutar y controlar el cumplimento de todas las actividades vinculadas con la pesca y la acuicultura, de conformidad con la ley.

B) De conformidad con la reglamentación que se dicte, siguiendo los procedimientos y criterios que en esta se indiquen, proceder a, entre otras:

1) Recepcionar las solicitudes de permisos, autorizaciones y concesiones, las que serán otorgadas en todos los casos por el Ministerio de Ganadería, Agricultura y Pesca.

2) Actuar como la autoridad oficial competente en materia de sanidad e inocuidad alimentaria de los productos pesqueros y acuícolas, expidiendo los certificados que correspondan a nivel nacional e internacional.

4) Fijar talla y peso mínimo de desembarque de las especies susceptibles de captura.

5) Determinar las artes y los métodos de pesca.

6) Establecer épocas, especies y zonas de veda, así como zonas de reservas, refugios o viveros, considerando entre otros, criterios ecosistémicos y hábitat críticos.

7) Determinar las cuotas y el volumen de captura permitida, así como modificar cuotas o volumen en casos excepcionales.

8) Establecer un sistema nacional de información pesquera y acuícola, incluyendo los registros que fueren oportunos.

9) Prohibir, si lo considerase apropiado, la permanencia de embarcaciones pesqueras en las zonas de veda, así como en zonas de reservas, refugios o viveros.

10) Fijar y modificar los porcentajes de desembarque por especies respecto al desembarque total, tomando en consideración la modalidad de pesca, la especie y la interdependencia de las poblaciones.

11) Declarar, en su caso, plenamente explotado un determinado recurso o conjunto de recursos pesqueros.

12) Establecer zonas y subzonas para la mejor administración de los recursos pesqueros explotados por pescadores artesanales.

13) Proponer al Poder Ejecutivo medidas de incentivo con respecto a aquellas actividades que conducen al desarrollo sostenible de la pesca y al fomento de la acuicultura.

14) Promover la investigación científica en cuanto sea necesaria para la correcta administración de los recursos hidrobiológicos y, a tal fin, establecer y administrar estaciones de acuicultura, viveros, estaciones y centros y áreas de repoblación.

17) Asesorar al Poder Ejecutivo en todo lo relacionado a la pesca, la caza acuática y la acuicultura.

18) Actuar como organismo de contralor de las actividades directa o indirectamente vinculadas a la pesca o a la acuicultura que deriven de acuerdos o tratados internacionales.

19) Proponer al Poder Ejecutivo los representantes en las comisiones nacionales o internacionales que el país integre en materia pesquera y acuícola.

20) Velar por el cumplimento de los compromisos asumidos con los organismos internacionales en los cuales el Estado participe y suscriba en materia pesquera y acuícola y de conservación de los recursos hidrobiológicos y de los ecosistemas que los contienen.

22) La determinación de sanciones, cuando considere que existieron infracciones a la presente ley, acuerdos internacionales suscritos por el Estado, disposiciones reglamentarias o resoluciones, previo dictamen de la División Servicios Jurídicos del Ministerio de Ganadería, Agricultura y Pesca el que no será vinculante.

23) Percibir y afectar los ingresos económicos derivados del pago de precios, tasas, derechos de acceso y multas por infracciones, de acuerdo con la normativa vigente.

Por otra parte, la Armada Nacional del Uruguay es la entidad encargada de ejercer la Autoridad y la Policía Marítima de la República. (Ley Nº 10.808). En este sentido, otorga los permisos de zarpe y el cumplimiento de las normativas para la marina mercante y buques de pesca en relación con los requerimientos para la navegación y seguridad a bordo. Además, tiene la autoridad de inspeccionar cualquier buque que se encuentre en la zona económica exclusiva de Uruguay incluyendo la actividad pesquera. Colabora con la DINARA en los procesos de inspección y seguimiento de la actividad pesquera ilegal.

Seguimiento de las actividades pesqueras

Mediante el Decreto N° 481/007 REGLAMENTACION DEL USO DE SISTEMAS VMS EN LA FLOTA PESQUERA, todos los buques de pesca de bandera uruguaya y mayores de 10 T.R.B. están obligados a disponer de un sistema VMS a bordo operativo que reporte cada hora datos de posición, identificación, rumbo y velocidad.

Esta información es enviada a DINARA que a su vez se encargará de proponer sanciones en caso de que se produzcan infracciones a la normativa en vigor.

6.4.1.5 Objectives for the fishery: Resource, Environmental, Biodiversity and ecological, Technological, Social and Economic

La Ley 19.175 establece en su artículo 16 que en la formulación de políticas y en la elaboración y aplicación de la legislación pesquera, deberá respetarse el criterio de precaución en la conservación, ordenación y explotación de los recursos hidrobiológicos y de los ecosistemas que los contienen, de conformidad con la presente ley así como con los compromisos asumidos por el país en la Convención de las Naciones Unidas sobre el Derecho del Mar, de 10 de diciembre de 1982, aprobada por la Ley Nº 17.082, de 15 de abril de 1999, sin perjuicio de otros que puedan celebrarse. Además, el artículo 7 del reglamento 115/018 establece que en una pesquería se determinará cerrada para conseguir situar el esfuerzo de pesca por debajo del que permita obtener el rendimiento máximo sostenible (RMS). Por tanto, de este marco legal se infiere que la gestión pesquera se lleva a cabo teniendo en cuenta el RMS como límite de capturas y existen objetivos para mantener las pesquerías a este nivel.

Sin embargo, pese a la situación anterior no se tiene información de cómo se calcula el RMS y como se calculan las cuotas. En el caso específico de la pesquería del cangrejo rojo de Uruguay la pesquería está cerrada a nuevos operadores y solo tienen licencia dos barcos (COOKE URUGUAY S.A.). Estos barcos pescan una captura calculada anualmente por la DINARA a partir de los datos históricos de la pesquería que monitorizan anualmente. Sin embargo, no es pública la manera con que la DINARA calcula estas cuotas y si están fundamentadas en el objetivo del Rendimiento Máximo Sostenible que marca la ley de pesca.

6.4.1.6 Outline the fleet types or fishing categories participating in the fishery

La única flota que participa en esta pesquería son los dos barcos pertenecientes al cliente COOKE URUGUAY S.A. No hay información acerca de si existen capturas de cangrejo procedentes de otro tipo de barcos o modalidades.

El arte de pesca empleado para la captura es la nasa. En 2019, ambos buques Maxal II y C. Spirit operaron con el mismo tipo de nasas tronco-piramidales de base rectangular construidas con listones de madera espaciados entre sí para permitir el escape de los individuos de menor tamaño. Si bien, en años anteriores, también se utilizaban nasas metálicas. En ambos buques el número de nasas por línea varía entre 200 y 220 nasas y la separación entre nasas en la línea, varía entre 27 y 30 m. Ambos barcos están incluidos en la categoría C de la clasificación de los buques de pesca de acuerdo con la Ley de Pesca de Uruguay.

6.4.1.7 Individuals or groups granted rights of access to the fishery and particulars of the nature of those rights

Como ya se ha comentado, solo un grupo operador está presente en la pesquería con dos barcos. COOKE URUGUAY S.A.

6.4.1.8 Particulars of arrangements and responsibilities for monitoring, control and surveillance and enforcement

La Ley de pesca 19.175 y su reglamento establecen el marco de infracciones y sanciones relativas a las actividades de pesca ilegal, así como los elementos de seguimiento, control, vigilancia y aplicación de la ley. La DINARA es la encargada de realizar el control de las actividades pesqueras. A través de sus inspectores a bordo y en los muelles de desembarque y plantas procesadoras. La Armada Nacional, a través de la Prefectura Nacional Naval uruguaya (PRENA), dependiente del Ministerio de Defensa Nacional, ejerce el rol de policía marítima, registra y otorga la matrícula y el pabellón nacional a los buques pesqueros y realiza el control de entradas y salidas de buques a puerto, impide la salida de los barcos que no dispongan de licencias de pesca y ordena el regreso a puerto de aquellos que deban hacerlo a solicitud de la DINARA, colaborando con este organismo en caso de abordajes e inspecciones en el mar. La Armada, vigila la incursión en la ZEE de buques pesqueros extranjeros no autorizados de acuerdo con la legislación vigente y captura y trae a puerto a los que operen ilegalmente en la ZEE nacional.

Los artículos 24 y 25 de la Ley de Pesca, regula la figura de inspector de pesca y sus funciones. Los inspectores son personal de la DINARA y tienen, entre otras atribuciones, acceder e inspeccionar libremente a los buques pesqueros de bandera nacional, incluso cuando se encuentren en puertos extranjeros.

6.4.1 Principle 3 Performance Indicator scores and rationales

PI 3.1.1 – Legal and/or customary framework

PI 3.1.1		**The management system exists within an appropriate legal and/or customary framework which ensures that it:** - **Is capable of delivering sustainability in the UoA(s);** - **Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and** - **Incorporates an appropriate dispute resolution framework**		
Scoring Issue		SG 60	SG 80	SG 100
a	Compatibility of laws or standards with effective management			
	Guide post	There is an effective national legal system **and a framework for cooperation** with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and **organised and effective cooperation** with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and **binding procedures governing cooperation with other parties** which delivers management outcomes consistent with MSC Principles 1 and 2.
	Met?	**Yes**	**Yes**	**Yes**
Rationale				

<u>National legal framework</u>

Law No. 19.175 on Hydrobiological Resources, which declares its conservation, research and sustainable development to be of general interest, and its Regulations (Decree No. 115/018) (amended by Decree No. 269/018 of 27/08/2018) constitute the legal basis for fisheries management in the country. These regulations establish the legal regime for fisheries and aquaculture, which aims to ensure the conservation, management, sustainable development and responsible use of hydrobiological resources and the ecosystems that contain them in the national territory and in the waters, both continental and maritime, over which the State exercises its sovereignty and jurisdiction. Article 3 of the Act also establishes that the State exercises its sovereignty, dominion and full jurisdiction over the hydrobiological resources that are permanently or occasionally found in Uruguay's inland waters, territorial sea, exclusive economic zone and continental shelf, as well as in adjacent areas of national jurisdiction, in accordance with international laws and treaties.

The Ministry of Livestock, Agriculture and Fisheries is the body responsible for the policy related to hydrobiological resources in accordance with the provisions of the law. However, the National Directorate of Aquatic Resources (DINARA) is responsible for regulating and promoting the sustainable use of fishery and aquaculture resources through responsible fishing and processing that meets health and quality standards in order to achieve the maximum possible benefit from the available aquatic resources.

In addition, DINARA has the task of executing and monitoring compliance with all activities related to fishing and aquaculture, including research, proposing, and monitoring management measures, and determining penalties in the event of infringements and the collection of such penalties.

Moreover, DINARA acts as a monitoring body for activities directly or indirectly linked to fishing under international agreements or treaties, proposes to the Ministry the representatives on national or international commissions that the country should join in the area of fishing and aquaculture and is responsible for ensuring compliance with the commitments made to international bodies in which the State participates and signs up to in the area of fishing, aquaculture and the conservation of hydrobiological resources and the ecosystems that contain them.

The crab fishery under evaluation has the highest volume of catches, mainly within the waters of the Uruguayan Exclusive Economic Zone. The distribution of the species reaches both the EEZ of Brazil to the north and that of Argentina to the south, although its area of distribution and the catches made by adjacent countries are not clear.

In relation to Argentina, in 1964 the Treaty of the River Plate and its Maritime Front was signed in order to jointly manage the interests and resources of the mouth of the River Plate and its maritime front. In relation to fishing activity, Article 73 of the Treaty states that the Parties agreed to establish a common fishing zone, beyond twelve nautical miles measured from the corresponding coastal baselines, for vessels flying their flags and duly registered. It is therefore established that there are cooperation mechanisms in place for the management of fisheries resources between the two countries. In the case of the Argentine hake, *Merluccius hubbsi*, it has a permanent breeding and spawning area located in the Argentine Uruguayan Common Fishing Zone.

Article 3 of the Law on Hydrobiological Resources establishes that the State exercises its sovereignty, dominion and full jurisdiction over the hydrobiological resources that are permanently or occasionally found in Uruguay's inland waters, territorial sea, exclusive economic zone and continental platform, as well as in adjacent areas of national jurisdiction, in accordance with international laws and treaties.

The regulatory framework of the Uruguayan fishing sector includes agreements of a mandatory nature, such as, the United Nations Convention on the Law of the Sea – UNCLOS (signed in 1982 and ratified in 1992), the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (ratified in 2013), the Treaty on the Limits of the Uruguay River (1961), the aforementioned Treaty of the River Plate and its Maritime Front (1973) and the Statute of the Uruguay River (1975). There is also a set of international instruments of a non-binding nature that includes the FAO Code of Conduct for Responsible Fisheries (1995).

Therefore, this **SI meets SG100.**

b	Resolution of disputes			
	Guide post	The management system incorporates or is subject by law to a **mechanism** for the resolution of legal disputes arising within the system.	The management system incorporates or is subject by law to a **transparent mechanism** for the resolution of legal disputes which is **considered to be effective** in dealing with most issues and that is appropriate to the context of the UoA.	The management system incorporates or is subject by law to a **transparent mechanism** for the resolution of legal disputes that is appropriate to the context of the fishery and has been **tested and proven to be effective**.
	Met?	**Yes**	**Yes**	**No**

Rationale

In the international framework, Uruguay is a signatory to the UNCLOS and must therefore resolve its disputes with other parties concerning the interpretation or application of the Convention by peaceful means and, if no agreement is reached, they must be settled through a court or tribunal that has jurisdiction in accordance with the provisions of the Convention.

Argentina and Brazil are also parties to UNCLOS. In 2017, the Commission on the Outer Limit of the Continental Shelf, a scientific body composed of 21 international experts and created by the UN Convention on the Law of the Sea, granted Argentina an extension of its exclusive economic zone after resolving some controversies raised in relation to the northern limit of the new alleged extension and close to Uruguayan waters. On the other hand, there are no disputes between Brazil and Uruguay in relation to maritime waters, although there are inland waters.

Moreover, the Treaty of the Río de la Plata and its Maritime Front establishes mechanisms for the resolution of conflicts between the parties (Argentina and Uruguay) through Article 87 which gives priority to resolving it through direct negotiations, but in the event that an agreement is not reached, it may be submitted, by either party, to the International Court of Justice.

Therefore, it is considered that there are effective and proven dispute resolution mechanisms at the international level.

However, there are no specific mechanisms for this purpose in Uruguayan fisheries legislation. However, the resolution of disputes that may arise from non-compliance with fisheries regulations must be resolved through the national judicial system in accordance with the legislation in force.

Therefore, this **SI meets SG80, but not SG100.**

c	Respect for rights			
	Guide post	The management system has a mechanism to **generally respect** the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to **observe** the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to **formally commit** to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.
	Met?	**Yes**	**Yes**	**Yes**
Rationale				

The management system, has mechanisms to respect, in general terms, the legal rights of people who depend on fishing. Thus, at both national and regional levels, fisheries regulations take this into account.

The Fishing Act grants access to the exploitation of fisheries and aquaculture resources only to natural or legal persons domiciled in the territory of the Republic, who have obtained the corresponding permits and who comply with the other conditions established by the Act and its regulations. This access is carried out through fishing permits issued after payment of the access fees, which are set by the Executive Branch with the advice of DINARA. This access will be considered by the authority in accordance with the principle of long-term sustainability of the hydrobiological resources. This is based in the proportionality between fishing or extraction effort and production capacity, the management and background of the applicant as well as the relevant socio-economic and environmental factors. Fishermen will have to provide a guarantee for the fulfilment of the obligations imposed by national and international regulations. Artisanal and subsistence fishing are excluded from formalizing such guarantee.

Under the Fishing Act, a fishing permit is a right granted to a natural or legal person, in relation to a specific vessel, for a set period of time, to carry out fishing operations for certain species and under certain conditions in waters under its jurisdiction or on the high seas.

It should be noted that there are no aboriginal or indigenous peoples who depend on fishing for their food or livelihood, and therefore it is not relevant that fisheries consider the specific legal rights of these groups of people.

This **SI meets SG100.**

References

Decretos N° 115/018 de 24/04/2018 y 269/018 de 27/08/2018. REGLAMENTACION DE LA LEY 19.175 RELATIVO A LA DECLARACION DE INTERES GENERAL. CONSERVACION, INVESTIGACION Y EL DESARROLLO SOSTENIBLE DE LOS RECURSOS HIDROBIOLOGICOS Y ECOSISTEMAS. http://extwprlegs1.fao.org/docs/pdf/uru176695.pdf

Ley Nº 19.175. RECURSOS HIDROBIOLÓGICOS. SE DECLARA DE INTERÉS GENERAL SU CONSERVACIÓN, INVESTIGACIÓN Y DESARROLLO SOSTENIBLE. https://legislativo.parlamento.gub.uy/temporales/leytemp6743642.htm

Convención de las Naciones Unidas sobre el Derecho del Mar. https://www.un.org/Depts/los/convention_agreements/texts/unclos/convemar_es.pdf

Código de Conducta para la Pesca Responsable de FAO. http://www.fao.org/3/a-v9878s.pdf

Acuerdo sobre la aplicación de las disposiciones de la Convención de las Naciones Unidas sobre el Derecho del Mar de 10 de diciembre de 1982, relativas a la conservación y ordenación de las poblaciones de peces transzonales y las poblaciones de peces altamente migratorios, suscrito por la República, en la sede de la Organización de las Naciones Unidas en Nueva York, el 16 de enero de 1996.

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ACUERDO SOBRE MEDIDAS DEL ESTADO RECTOR DEL PUERTO DESTINADAS A PREVENIR, DESALENTAR Y ELIMINAR LA PESCA ILEGAL, NO DECLARADA Y NO REGLAMENTADA http://www.fao.org/fileadmin/user_upload/legal/docs/037s-s.pdf

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 3.1.2 – Consultation, roles and responsibilities

PI 3.1.2	The management system has effective consultation processes that are open to interested and affected parties The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties			
Scoring Issue		SG 60	SG 80	SG 100
a	Roles and responsibilities			
	Guide post	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are **generally understood**.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are **explicitly defined and well understood for key areas** of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are **explicitly defined and well understood for all areas** of responsibility and interaction.
	Met?	**Yes**	**Yes**	**No**
Rationale				

The key areas of responsibility are well identified within the fishery.

The Executive Branch, through the Ministry of Livestock, Agriculture and Fisheries, is responsible for the policy related to the country's hydrobiological resources by means of 4 tasks:

- the determination and operation of landing points
- legislative harmonization with other countries
- signing international conventions and agreements
- encouraging the development of aquaculture.

All fishing policies are articulated through the National Directorate of Aquatic Resources (DINARA). This is an entity delegated by the Ministry for the research of fishing resources, the guidance, the promotion and the development, in all its aspects, of the activities related to the responsible use of the hydrobiological resources, of the ecosystems that contain them and of the derived industries, at a public and private level.

In this sense, it is responsible for implementing and monitoring compliance with all activities related to fisheries and aquaculture, in accordance with the Law. It is also responsible for promoting participation in the administration of hydrobiological resources by all interested persons through the Advisory Council on Fisheries, the Advisory Council on Aquaculture and the Zonal and Local Fisheries Councils. These Councils include representatives of the Administration, fishermen, ship owners and all the interested parties related to the fishing activity.

In short, DINARA is considered to cover all areas of fisheries management from catching to processing and marketing of the fish.

It is therefore considered that, in Uruguay, the management system does adequately identify the organizations and persons involved and that the functions, roles and responsibilities, in all areas of responsibility, are well defined and known so that **this SI complies with the SG80**. However, it cannot be determined that this element complies with the SG100 on the basis of the existing information.

b	Consultation processes			
	Guide post	The management system includes consultation processes that **obtain relevant information** from	The management system includes consultation processes that **regularly seek and accept** relevant	The management system includes consultation processes that **regularly seek and accept** relevant

		the main affected parties, including local knowledge, to inform the management system.	information, including local knowledge. The management system demonstrates consideration of the information obtained.	information, including local knowledge. The management system demonstrates consideration of the information and **explains how it is used or not used**.
	Met?	**Yes**	**Yes**	**No**
Rationale				

The Fishing Act (Art. 14) establishes the creation of a Fisheries Advisory Council as an advisory body to the Executive in all matters related to fisheries and its main task is to carry out a participatory exchange of ideas and proposals, without their being binding on the Administration. The Council is made up of nine representatives from the different bodies linked to fishing activity and includes representatives from the Administration, ship owners, artisanal fishermen and workers, among others. In addition, the Council may convene the bodies and agencies with specific fisheries-related competences, when their advice is required.

In addition, the Regulation to the Fishing Act, provide for the creation of Zonal Fishing Councils and Local Councils for small-scale fishing.

The Zonal Fishing Councils (Art. 56 of the Regulation to the Fishing Act) have, among other things, the following tasks:

a) to provide the fishermen's organizations with an environment for the discussion of those issues related to the fishing activity within the respective zone.

b) to establish mechanisms for the coordination of the proposals made by these organizations with other involved organizations and.

c) to provide an environment for the participation of the actors of the sector in the decision-making processes on issues related to the activity and its development in the zone

With regard to the Local Councils for small-scale fishing (Art 58 of the Regulation to the Fishing Act) their tasks are mainly to manage, communicate and debate issues related to the fishing activity and its process within the locality, promoting the participation in the decision-making processes of those interested in this activity. All proposals for management and conservation will be directed towards the responsible use of hydrobiological resources and the ecosystems that contain them, taking measures to ensure sustainable development,

The Zonal Fishing Councils shall hold sessions at the proposal of the DINARA or at any time that the Council itself considers necessary or at the request of three of its members, as established in its internal regulations. The Local Councils shall do so in accordance with existing needs, with a minimum of 1 (one) annual meeting.

Therefore, it is considered that consultation procedures are in place within the management system and all parties are represented. However, even though there are three levels of consultation, it is not possible to determine how the information is considered and used by the system. Therefore, this **SI meets SG80**, but not SG100.

c	Participation			
	Guide post		The consultation process **provides opportunity** for all interested and affected parties to be involved.	The consultation process provides **opportunity and encouragement** for all interested and affected parties to be involved, and **facilitates** their effective engagement.
	Met?		**Yes**	**No**
Rationale				

If, as developed in SI3.1.2b, the consultation procedure is considered to provide the opportunity and encourage, through the Advisory Council for Fisheries and the Zonal and Local Councils, the participation of all interested and affected parties.

It is considered that there is a harmonized process of consultation at the state, zone, and local levels and that there is an adequate flow of information to stakeholders.

Therefore, it is considered that this **SI meets SG80.**

However, the details of how the information obtained from stakeholders is used are not known. Therefore, **SG100 is not met.**

References

Decretos N° 115/018 de 24/04/2018 y 269/018 de 27/08/2018. REGLAMENTACION DE LA LEY 19.175 RELATIVO A LA DECLARACION DE INTERES GENERAL. CONSERVACION, INVESTIGACION Y EL DESARROLLO SOSTENIBLE DE LOS RECURSOS HIDROBIOLOGICOS Y ECOSISTEMAS. http://extwprlegs1.fao.org/docs/pdf/uru176695.pdf

Ley Nº 19.175. RECURSOS HIDROBIOLÓGICOS. SE DECLARA DE INTERÉS GENERAL SU CONSERVACIÓN, INVESTIGACIÓN Y DESARROLLO SOSTENIBLE. https://legislativo.parlamento.gub.uy/temporales/leytemp6743642.htm

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Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**≥80**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 3.1.3 – Long term objectives

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Fisheries Standard, and incorporates the precautionary approach		
Scoring Issue		SG 60	SG 80	SG 100
a	Objectives			
	Guide post	Long-term objectives to guide decision-making, consistent with the MSC Fisheries Standard and the precautionary approach, are **implicit** within management policy.	**Clear** long-term objectives that guide decision-making, consistent with MSC Fisheries Standard and the precautionary approach are **explicit** within management policy.	**Clear** long-term objectives that guide decision-making, consistent with MSC Fisheries Standard and the precautionary approach, are **explicit** within **and required by** management policy.
	Met?	**Yes**	**No**	**No**
Rationale				

Article 1 of the Law on Hydrobiological Resources establishes that the responsible use of these resources and the ecosystems that contain them are of general interest and should therefore be adequately managed. In addition, among the fisheries management measures, article 16 (Precautionary approach) requires that in the formulation of policies and in the development and application of fisheries legislation, the precautionary approach should be respected in the conservation, management and exploitation of hydrobiological resources and the ecosystems that contain them, as well as the commitments assumed by the country in the United Nations Convention on the Law of the Sea of 10 December 1982, approved by Act No. 17,082 of 15 April 1999, without prejudice to any others that may be concluded. The application of the precautionary principle as a guide in the decision-making process provides a basis for management consistent with the Principles and Criteria of the MSC.

Article 7 of the Regulations to the Fishing Act states that when a fishery is considered closed (as is the case with the red crab fishery) only, when the fishing effort is less than the MSY effort, DINARA may open the fishery to those interested in exploiting it.

Article 4 of the Regulation of the Fishing Act establishes that the Total Allowable Catch (TAC) is the maximum tonnage of a species that can be caught in a given period and that is set by the Administration based on, among other things, the Maximum Sustainable Yield (MSY), social, economic, political and biological factors that contribute to the conservation of resources and the sustainability of fisheries.

Therefore, **SG60 is met**.

However, not all fisheries are managed in this way or there is information on this subject that has not been possible to consult. The technical criteria by which decisions are made to close a fishery or establish quotas in relation to MSY are unknown.

In the case of red crab, there is monitoring of the fishery with observers on board all the fleet (i.e., the 2 vessels) but the entire fishing period is apparently not covered. The results of this research are the basis for establishing the volumes of Total Allowable Catches, however, it is not possible to know these data or how they are technically established. This information is public. It is given directly to each vessel through the fishing permit.

With respect to other components of Principle 2, Uruguay has implemented some of its National Plans of Action for fisheries: Plan for the Conservation of Chondrichthyans in Uruguayan Fisheries (PAN - Chondrichthyans Uruguay); Plan for Reducing Bycatch of Seabirds in Uruguayan Fisheries (PAN - Aves Marinas Uruguay). In relation to chondrichthyans, the PAN considers that skate (*Amblyraja frerichsi*) and "other species" are caught as bycatch in Uruguayan pot fisheries. This species is not included in any IUCN threat category. In relation to seabirds, the PAN does not consider pot fisheries to be a threat to seabirds. There is no information about the interaction of pots with other species. In the monitoring reports of the fishery there is no information about interactions with other species so it cannot be determined that these do not occur and their importance.

Therefore, it is considered that, although there are long-term objectives included in the articles of the Law and that should guide the decision-making process, they are not implemented or are not public, and therefore **this SI is not considered to reach the SG80.**

References

Decretos N° 115/018 de 24/04/2018 y 269/018 de 27/08/2018. REGLAMENTACION DE LA LEY 19.175 RELATIVO A LA DECLARACION DE INTERES GENERAL. CONSERVACION, INVESTIGACION Y EL DESARROLLO SOSTENIBLE DE LOS RECURSOS HIDROBIOLOGICOS Y ECOSISTEMAS. http://extwprlegs1.fao.org/docs/pdf/uru176695.pdf

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Plan de acción nacional para la conservación de condrictios en las pesquerías uruguayas. (PAN - Condrictios Uruguay) https://www.oceandocs.org/handle/1834/2823

Plan de Acción Nacional para Reducir la Captura Incidental de Aves Marinas en las Pesquerías Uruguayas http://www.fao.org/fishery/docs/DOCUMENT/IPOAS/national/uruguay/PAN_AvesMarinasUruguay_final.pdf

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**60-79**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 3.2.1 – Fishery-specific objectives

PI 3.2.1		The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2		
Scoring Issue		SG 60	SG 80	SG 100
a	Objectives			
	Guide post	**Objectives**, which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are **implicit** within the fishery-specific management system.	**Short and long-term objectives**, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are **explicit** within the fishery-specific management system.	**Well defined and measurable short and long-term objectives**, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are **explicit** within the fishery-specific management system.
	Met?	**Yes**	Partial	
Rationale				

According to the existing information, the fishery has been evaluated since 2002 on an annual basis based on data from the observers. These data are used to determine management measures based on a precautionary approach. These measures include an annual quota based on Maximum Sustainable Yield (MSY) and the maintenance of fishing effort with a maximum of two vessels. Among the documentation analysed are the annual reports on the monitoring of the fishery through the observer programme covering the two authorised vessels. The last year with information is 2019. However, there is no information on how the annual quotas are established and neither have the DINARA resolutions establishing the TACs been found. These TACs are specified on the fishing permits of each vessel, but they are not public, and it is not known how they are calculated. No new stock assessment has been carried out since 2011. The company's permits, according to information received from the client, state that they cannot fish below 500m and they must not fish between 1,200 and 1,500m because they do not harm recruitment. They have a quota of 1,300 tons per year. The Fishing Act Regulation determines the minimum landing and marketing size (95 mm carapace width) and it is prohibited to retain female red crabs on board. On the other hand, the Fishing Act classifies the fishery as fully exploited and therefore it is closed, and no new permits are issued to other vessels.

Despite the above, since the entry of the company COOKE URUGUAY into the fishery and according to DINARA itself, the first year of operations was not relevant. They had no experience in this fishery. In the second year (2018) the situation improved, but in 2019, due to budget problems, it was not possible to include observers on board from August. In 2020 the vessels could not go fishing. There is therefore no reliable information on the observer programme since 2016.

In relation to Principle 2 Uruguay has National Plans of Action for reducing seabird bycatch and for chondrichthyan conservation in fisheries. However, no specific information has been found on mitigation measures in these plans applied to the red crab fishery.

With regard to by-catches, the fishery monitoring reports prepared by DINARA include a discard analysis, but only consider the minimum sizes of crabs that are returned to the sea by size or their maturity and recommendations are incorporated to improve the selectivity of the nets (separation of the grids and depth of draught).

There are not considered to be well defined and quantifiable short- and long-term objectives since it is not known how the information obtained by the observers is applied in the management model. Furthermore, the last assessment was carried out in 2012 and since then, the status of the stock is not known. There are components in the management system that are consistent with Principle 1 of the MSC and are explicit, as the Fishing Act determines that fisheries must be managed in accordance with MSY. However, it is not known how they are defined. Therefore, **this element is covered by the SG60** but not by the SG80 as it cannot be determined whether they are really effective in meeting this objective or not.

References

Decretos N° 115/018 de 24/04/2018 y 269/018 de 27/08/2018. REGLAMENTACION DE LA LEY 19.175 RELATIVO A LA DECLARACION DE INTERES GENERAL. CONSERVACION, INVESTIGACION Y EL DESARROLLO SOSTENIBLE DE LOS RECURSOS HIDROBIOLOGICOS Y ECOSISTEMAS. http://extwprlegs1.fao.org/docs/pdf/uru176695.pdf

Ley Nº 19.175. RECURSOS HIDROBIOLÓGICOS. SE DECLARA DE INTERÉS GENERAL SU CONSERVACIÓN, INVESTIGACIÓN Y DESARROLLO SOSTENIBLE. https://legislativo.parlamento.gub.uy/temporales/leytemp6743642.htm

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Plan de acción nacional para la conservación de condrictios en las pesquerías uruguayas. (PAN - Condrictios Uruguay) https://www.oceandocs.org/handle/1834/2823

Plan de Acción Nacional para Reducir la Captura Incidental de Aves Marinas en las Pesquerías Uruguayas http://www.fao.org/fishery/docs/DOCUMENT/IPOAS/national/uruguay/PAN_AvesMarinasUruguay_final.pdf

Resolución 213/2018 por la que se establecen diversas medidas de gestión para especies pesqueras

Informes sobre la operativa de pesca del cangrejo rojo Chaceon notialis en Uruguay en los años 2017, 2018 y 2019

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**60-79**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 3.2.2 – Decision-making processes

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery			
Scoring Issue		SG 60	SG 80	SG 100
a	Decision-making processes			
	Guide post	There are **some** decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are **established** decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	
	Met?	**Yes**	**No**	
Rationale				

The decision-making process is defined in the Fishing Act 19.175. Chapter II specifies the management bodies and their powers. Thus, the Ministry of Livestock, Agriculture and Fisheries is the body responsible to the Executive for the policy related to hydrobiological resources. Within the Ministry, the DINARA is responsible for executing the country's fishing policies including fisheries management, marine research, the granting of permits and licences, prosecuting infringements and establishing the penalties arising therefrom and representing the Administration in the Advisory and Zonal Fishing Councils. The Act clearly establishes all the powers of DINARA.

Among them, the DINARA is the entity in charge of establishing the rules for fisheries management, such as setting minimum landing size and weight; determining fishing gear and methods; establishing seasons, species and closed areas, as well as reserve, shelter or nursery areas, considering, among others, ecosystem criteria and critical habitats; and finally, determining quotas and the volume of permitted catch, as well as modifying quotas or volume in exceptional cases. These reponsabilities determine that DINARA oversees all management decisions and that the other stakeholders are only consulted. There are no specific management plans by fishery or, at least, they have not been found.

DINARA is also in charge of fisheries research in the country. Therefore, the scientific recommendations for management come from the same body that makes the management decisions.

In the case of the Red Crab fishery, the DINARA establishes the annual quotas, as well as the working areas and characteristics of the pots. However, it has not been possible to consult this information as it is not public. Nor are there any minutes of the meetings of the Advisory Councils with which the degree of integration of the ideas or proposals emanating from them into the management system can be determined.

At international level, given that this fishery is carried out in the Argentine-Uruguayan Common Fishing Zone, there is a Joint Technical Commission of the Maritime Front (CTMFM), which has the task of "carrying out studies and adopting plans and measures relating to the conservation, preservation and rational exploitation of living resources and the protection of the marine environment". Although, in the case of Uruguay, it is the DINARA who represents the country at technical meetings and takes the relevant decisions.

Therefore, it is considered that there are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives, and **SG60 is met.** However, there is no record of how the Directorate functions internally and whether there are effective safeguards in relation to scientific advice or the concerns or proposals of fishermen. Therefore, this **SI is not considered to meet SG80**.

b	Responsiveness of decision-making processes			
	Guide post	Decision-making processes respond to **serious issues** identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to **serious and other important issues** identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to **all issues** identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
	Met?	**Yes**	**No**	**No**
Rationale				

Given the lack of information on how decision-making processes are carried out beyond the fact that all decisions are in the hands of DINARA, it cannot be determined whether these processes respond to all issues or only to serious matters identified through research, consultations, follow-ups and evaluations, nor whether they are transparent or flexible.

There is no management plan for the fishery, nor are the resolutions determining the key elements of the fishery, such as the state of the resource (there has been no assessment since 2011) or the establishment of a MSY value, or whether the determination of quotas takes into account the ecosystem approach, among others. Similarly, there is no record of whether assessments are made of the management system and of the consequences of the decisions implemented.

Therefore, this **SI is not considered to reach a score of SG80.**

c	Use of precautionary approach			
	Guide post		Decision-making processes use the precautionary approach and are based on best available information.	
	Met?		**No**	
Rationale				

Article 2 of the Fishing Act states that its purpose is "to ensure the conservation, management, sustainable development and responsible use of hydrobiological resources and the ecosystems that contain them in the national territory and in the waters, both continental and maritime, over which the State exercises its sovereignty and jurisdiction".

Article 16 provides that, in formulating policy and in developing and implementing fisheries legislation, the precautionary approach should be respected in the conservation, management and exploitation of hydrobiological resources and ecosystems which contain them. These policies must be aligned with the Fishing Act, as well as with the commitments assumed by the country in the United Nations Convention on the Law of the Sea, approved by Law No. 17,082.

In addition, article 17 considers that the precautionary approach shall be taken into account in determining closures of fisheries in accordance with the provisions of article 6 of the United Nations Convention on the Law of the Sea and article 7.5 of the FAO Code of Conduct for Responsible Fisheries.

There are some elements of management that are still being applied since their design. These could be interpreted as the precautionary approach being applied. For example, there is a “minimum landing size”, a quota of crab per boat, a maximum fishing depth, and a ban on retaining females regardless of size. Therefore, despite the lack of a specific management plan, the management system incorporates decisions that apparently could contribute to keeping the situation within acceptable parameters of sustainability. However, as explained in PI 1.1.1, recent trends in biomass and fishing mortality are unknown, therefore, **more information is needed for this element to meet the SG80**.

d	Accountability and transparency of management system and decision-making process			
	Guide post	Some information on the fishery's performance and management action is generally available on request to stakeholders.	**Information on the fishery's performance and management action is available on request**, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	Formal reporting to all interested stakeholders **provides comprehensive information on the fishery's performance and management actions** and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
	Met?	**Yes**	**No**	**No**
Rationale				

The Uruguayan law establishes the existence of three advisory bodies for fisheries and aquaculture: The Fisheries Advisory Council, the Aquaculture Advisory Council and the Zonal Fisheries Councils.

The Fisheries Advisory Council aims to be a place for the participatory exchange of ideas, without being binding on the Administration.

Representatives of DINARA and the Ministries of National Defence, Foreign Affairs and Housing, Territorial Planning, and the Environment, among others, are part of this Council. In addition, the fishermen will be part of the Council through a representative of the industrial ship owners and another of the artisanal fishermen.

The Advisory Council for Fisheries may convene bodies and departments with specific competence relating to fisheries when their advice is required.

The Zonal Fishing Committees have, by law, the objective of participating in the co-management of the resources in each fishing zone, although their decisions will not be binding on the Administration.

All proposals discussed at these Councils must be aimed at the responsible use of fishery resources, as well as the conservation of biodiversity and the ecosystems that contain it.

DINARA publishes its resolutions and other important information about fisheries management on its website. There is the possibility of carrying out thematic searches on the documents that have been published. Apparently, all the documents, reports and resolutions published are available through this system.

However, it is not possible to find certain key elements for the management of the fisheries. For example, in the case of the red crab fishery, the criteria for determining the quotas assigned to each vessel and other key elements of the fishery are unknown.

It is not known how these decisions are shared with stakeholders and whether consultation processes are in place and how it is ensured that stakeholders understand how they have been made. It is possible that in the Advisory and Zonal Councils, where DINARA is present and coordinates, there are spaces for this purpose, but there is no evidence, through minutes or similar, that this is the case. Likewise, there has been no access to the minutes of the meetings of these Councils, nor to how this information is integrated into the decisions taken in the management policy and whether the decisions are shared with all interested parties.

Not all the information is publicly available to all interested parties, although some of it is available upon request. For this reason, it is considered that this **SI meets SG60**. However, there is no record of DINARA providing explanations for any decision taken. There is no record of the information presented in the Advisory and Zonal Councils and therefore the **SI80 is not considered to be met.**

e	Approach to disputes			
	Guide post	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or fishery acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
	Met?	**Yes**	**No**	**No**
Rationale				

There are no specific mechanisms for dispute prevention or conflict resolution mechanisms in the Fishing Act and its regulations or in any element of the management system. The fishery does not have a specific management plan so there are no specific elements to resolve conflicts at this level either.

On the other hand, being a one-operator fishery there have been no disputes or litigation in recent years and therefore no evidence of any implementation of judicial decisions on the fishery.

The **SI is scored with an SG60**, but the existing information needs to be improved.

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Decretos N° 115/018 de 24/04/2018 y 269/018 de 27/08/2018. REGLAMENTACION DE LA LEY 19.175 RELATIVO A LA DECLARACION DE INTERES GENERAL. CONSERVACION, INVESTIGACION Y EL DESARROLLO SOSTENIBLE DE LOS RECURSOS HIDROBIOLOGICOS Y ECOSISTEMAS. http://extwprlegs1.fao.org/docs/pdf/uru176695.pdf

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Ministerio de Ganadería, Agricultura y Pesca y Dirección Nacional de Recursos Acuáticos (DINARA) https://www.gub.uy/ministerio-ganaderia-agricultura-pesca/dinara

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Informes sobre la operativa de pesca del cangrejo rojo Chaceon notialis en Uruguay en los años 2017, 2018 y 2019

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**60-79**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 3.2.3 – Compliance and enforcement

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with		
Scoring Issue		SG 60	SG 80	SG 100
a	MCS implementation			
	Guide post	Monitoring, control and surveillance **mechanisms** exist, and are implemented in the fishery and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance **system** has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A **comprehensive** monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	**Yes**	**No**	**No**
Rationale				

The mechanisms for monitoring, control, and surveillance of the fishing activity in Uruguay are coordinated by DINARA. Thus, the Fishing Act establishes among its powers, the implementation compliance with all activities related to fisheries and aquaculture, in accordance with the legislation.

DINARA, through the body of inspectors and in accordance with Articles 24 and 25 of the Fishing Act, monitors the compliance of all activities related to fisheries and aquaculture, carrying out inspection and surveillance activities. The inspectors carry out:

- Inspections of premises, establishments, vehicles, or specific areas where fishery or aquaculture products are deposited, transported, processed, or marketed.
- Inspections of national flag fishing vessels, even when they are in foreign ports.
- Inspections of foreign vessels in national ports or in waters under the jurisdiction of Uruguay or in international waters for compliance with agreements to which the country is a party.
- Intervene preventively and seize equipment, vehicles, and goods, fishing gear or hydrobiological products that have been used in the commission of an infringement.

DINARA, in order to enforce the above, may request the assistance of the country's public forces. Thus, the National Navy, through the Prefectura Nacional Naval del Uruguay (PRENA) and under the Ministry of National Defence, exercises the role of maritime police. The Navy is also in charge of registering and providing the registration and national flag to fishing vessels and carries out the control of the entry and exit of vessels in ports, prevents the departure of vessels that do not have a fishing licence and orders the return to port of those that must do so at the request of DINARA.

PRENA collaborates with DINARA in case of boarding and inspections at sea. The Navy monitors incursions into the EEZ by foreign fishing vessels that are not authorized in accordance with current legislation and catches and brings into port those that operate illegally in the national EEZ.

There is no information on the number of inspectors, the inspections carried out and the sanctions imposed by DINARA. There is evidence of combined actions between PRENA and DINARA through some press releases.

Decree 481/007 regulates the use of VMS systems in the fishing fleet. According to it, all Uruguayan fishing vessels must carry a VMS system and emit a signal every hour or every 4 hours depending on the category of the vessel. The monitoring and control of this information is carried out by DINARA.

Although there are elements implemented for the control of fishing activities through inspectors, a VMS system to monitor activity and collaboration with PRENA, there is no information on the real capacity and effectiveness of this system. Therefore, this **SI meet SG60, but not SG80.**

b	Sanctions			
	Guide post	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, **are consistently applied** and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and **demonstrably** provide effective deterrence.
	Met?	**Yes**	**No**	**No**
Rationale				

DINARA is the body responsible for determining the penalties, when it considers that there have been violations of Fishing Acts or international agreements signed by the State, regulations or resolutions, following the opinion of the Legal Services Division of the Ministry of Livestock, Agriculture and Fisheries. Chapter X of the Fishing Act.

Any act or omission contrary to the provisions contained in the law and to the obligations arising from international agreements to which the State is a party and from regulations and administrative rulings issued in the field of fisheries and aquaculture is considered an infringement. There are three types of infractions: profoundly serious, serious, or slight.

Profoundly serious infringements include actions such as industrial fishing in areas reserved for artisanal fishing, use and possession of unauthorized gear, extraction of unauthorized species and failure to observe closures, among other actions. Serious infringements include, as the most relevant punishable acts, treating the bycatch differently from what is provided for in the law, transhipping the fishery to unauthorized vessels or providing the competent authorities with false, incorrect, or incomplete information by the operators.

Sanctions also appear in the law and its regulations and can range from a simple warning to, for the most serious cases, fines, temporary or permanent suspension of activities or revocation of the permit, concession, or authorization. In addition, as an accessory, the Executive may seize, as a precautionary measure, the catch or fishing gear and vessels, among other assets.

The Fishing Act, in its article 82, specifies the amounts of the fines that can be accumulated up to a maximum limit.

There is no information on whether sanctions are applied consistently and whether they have a deterrent effect so that the **SI complies with SG60** but does not meet SG80.

c	Compliance			
	Guide post	Fishers are **generally thought** to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.	**Some evidence exists** to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	There is a **high degree of confidence** that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.
	Met?	**Yes**	**Yes**	**No**
Rationale				

Until 2019 there is biological information on the red crab fishery, based on data from observers on board the two fishing vessels. Although, due to different circumstances from 2017 to 2019 the campaigns have had different circumstances that have had a negative impact on the reliability of the information obtained according to the information provided by the client.

However, DINARA has continued to carry out its annual studies about the red crab and has proposed recommendations for the following campaigns (such as enlarging the openings of the pots to avoid capturing females or immature specimens). In the case of red crab, there is monitoring of the fishery with observers on board all the fleet (i.e., the 2 vessels) but the entire fishing period is apparently not covered.

These observers do not have a mandate to carry out monitoring, control and surveillance tasks, although their presence on board and the collection of data would make it possible to detect any non-compliance by the fleet with regard to management measures. However, there is no evidence of this.

Fishermen are therefore considered to comply with the management system, and to provide information of importance for the effective management of the fishery. However, the lack of information makes it difficult to know whether there is a high degree of confidence in compliance.

Therefore, this **SI meets SG80, but not SG100.**

d	Systematic non-compliance			
	Guide post		There is no evidence of systematic non-compliance.	
	Met?		**Yes**	
Rationale				

There is no evidence of systematic non-compliance with the management system. The IUU Fishing Index observatory ranks Uruguay 13th out of 152 in relation to illegal fishing activities carried out by its nationals or within its waters and ports. This figure places Uruguay in the top 15 of the most effective countries in the fight against illegal fishing. Therefore, this SI meet the SG80.

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Decretos N° 115/018 de 24/04/2018 y 269/018 de 27/08/2018. REGLAMENTACION DE LA LEY 19.175 RELATIVO A LA DECLARACION DE INTERES GENERAL. CONSERVACION, INVESTIGACION Y EL DESARROLLO SOSTENIBLE DE LOS RECURSOS HIDROBIOLOGICOS Y ECOSISTEMAS. http://extwprlegs1.fao.org/docs/pdf/uru176695.pdf

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http://iuufishingindex.net/

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**60-79**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 3.2.4 – Monitoring and management performance evaluation

PI 3.2.4	There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives There is effective and timely review of the fishery-specific management system		
Scoring Issue	SG 60	SG 80	SG 100
a Evaluation coverage			
Guide post	There are mechanisms in place to evaluate **some** parts of the fishery-specific management system.	There are mechanisms in place to evaluate **key** parts of the fishery-specific management system.	There are mechanisms in place to evaluate **all** parts of the fishery-specific management system.
Met?	**Yes**	**No**	**No**
Rationale			

DINARA is, in accordance with the powers granted by the Fishing Act, the body that formulates and implements the country's fisheries policy. However, there is no indication either in the Fishing Act or in its regulations as how and when the fisheries management system should be evaluated. In the case of red crab, information on how annual quotas are calculated or under what criteria actions would be applied to avoid putting the fishery at risk, among others, is not public. Only through the reports of the observers have some recommendations been identified to be applied in the following campaigns, but it is not known how these are applied.

Therefore, although in a concrete way there is no system of evaluation of the management system if it is interpreted that some parts are evaluated from the information obtained in the fishing campaigns so the **SG60 would be meet,** but not the SG80 for this SI.

b Internal and/or external review			
Guide post	The fishery-specific management system is subject to **occasional internal** review.	The fishery-specific management system is subject to **regular internal** and **occasional external** review.	The fishery-specific management system is subject to **regular internal and external** review.
Met?	**No**	**No**	**No**
Rationale			

It is not known how the management system is evaluated internally so it is not possible to determine if there is an internal evaluation process in place and what its characteristics are. With respect to external evaluations, the project "URU/17/001 Strengthening the technical and operational capacities of the National Directorate of Aquatic Resources" is currently in force (May 2017-May 2021). It is financed by the United Nations Development Programme (UNDP). This initiative is part of the priorities of the "Strategy for the Sustainable Development of the Uruguayan Fishing System", developed in 2009 in a participatory manner with different actors of the sector and financed through FAO.

Although the project does not directly pursue the evaluation of the management system, among its components it does incorporate the revision of methodologies for the evaluation of fishery resources and the strengthening of capacities among other elements, so it is considered an occasional external evaluation.

However, since there is no information on how the management system is evaluated internally, this SI cannot be scored adequately and not, in any case, met SG60.

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Decretos N° 115/018 de 24/04/2018 y 269/018 de 27/08/2018. REGLAMENTACION DE LA LEY 19.175 RELATIVO A LA DECLARACION DE INTERES GENERAL. CONSERVACION, INVESTIGACION Y EL DESARROLLO SOSTENIBLE DE LOS RECURSOS HIDROBIOLOGICOS Y ECOSISTEMAS. http://extwprlegs1.fao.org/docs/pdf/uru176695.pdf

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Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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8 Appendices

8.1 Assessment information

8.1.1 Previous assessments – delete if not applicable

The fishery has not previously undergone a full assessment.

8.1.2 Small-scale fisheries

N/A as the assessed fleet consists of two industrial fishing vessels operating in the Southwestern Atlantic Ocean and lengths of 54,6m and 56,6m (see Table 5.1.3); and the fishing area covers the Uruguayan EEZ (exclusive economic zone).

8.2 Evaluation processes and techniques

8.2.1 Site visits

8.2.2 Stakeholder participation

8.2.3 Evaluation techniques

8.3 Peer Review reports

To be drafted at Public Comment Draft Report

8.4 Stakeholder input

To be drafted at Client and Peer Review Draft Report

To be completed at Public Certification Report

8.5 Conditions – delete if not applicable

To be drafted from Client and Peer Review Draft Report

8.6 Client Action Plan

To be added from Public Comment Draft Report

8.7 Surveillance

To be drafted from Client and Peer Review Draft Report

8.8 Harmonised fishery assessments – delete if not applicable

To be drafted at Announcement Comment Draft Report stage

To be completed at Public Certification Report stage

There are no other overlapping fisheries. There is only one MSC certified fishery targeting red crab (*Chaceon notialis*) in the Northwest Atlantic and it is withdrawn. Harmonisation is not required.