Mexico Gulf of Mexico brown shrimp - bottom trawl

Pre-Assessment Report

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Fishery client	Porto Jaibo
Assessment type	Pre-assessment
Date	July, 2024

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1. Introduction

1.1. Aims and scope of the pre-assessment

This pre-assessment presents the results of the analysis of the Brown Shrimp fishery (*Farfantepenaeus aztecus*) in Mexican waters of the Gulf of Mexico conducted by industrial coastal vessels against the Marine Stewardship Council (MSC) Standard, version 3.0.

The principal aim of this pre-assessment is to determine, based on information made available by the client, public information and information gathered by the assessment team up to the date of writing, the performance of the fishery in relation to the Marine Stewardship Council (MSC) Principles and Criteria v 3.0.

In particular, the pre-assessment is intended to:

- Provide actionable information on the status of the fishery against the standard.
- Identify sustainability issues in the fishery that may need to be addressed for it to become certifiable against the MSC standard.
- Provide a recommendation on whether the fishery may or may not be ready to proceed to a full assessment against the MSC certification v 3.0.

The pre-assessment does not attempt to duplicate a full assessment against the MSC Fisheries Standard. A full assessment involves a group of assessment team members and public consultation stages that are not included in a pre-assessment. A pre-assessment provides a provisional assessment based on a limited set of information provided by the client and local interviews.

Constraints of the pre-assessment

Some data related to the numbers and/or volumes of bycatch species caught by the fishery are available, but more information needs to be gathered. However, with the available information, the assessment team performed a preliminary identification of main, minor and OOS species as established by the MSC. It is necessary to apply RBF in Principle 2.

Version details

This report is based on the following MSC fisheries program documents.

Table I: Fisheries program documents versions

Document/Assessment Tree	Version number/Type
MSC Fisheries Certification Process	Version 3.0
MSC Fisheries Standard	Version 3.0
Assessment tree	Default
MSC General Certification Requirements	Version 2.5
MSC Reporting Template	Version 2.0
MSC Pre-Assessment Reporting Template	Version 4.0

2. Unit of Assessment

2.1. Unit of Assessment

The Unit of Assessment (UoA) is the Brown Shrimp (*Farfantepenaeus aztecus*) within Mexican waters in the Gulf of Mexico (GOM).

80% of the catches come from the area located in front of the states of Tamaulipas and Veracruz. The fishery is sequential, artisanal boats operates inside coastal lagoons on the first stages of the life span and industrial vessels catch older shrimp in open waters from 15 miles to 60 fathoms.

The fishery includes catches of non-target (Principle 2) stock, White Shrimp (*Litopenaeus setiferus*) that are inseparable or practicably inseparable (IPI) from Target (Principle 1) stock since,

- It is practicably indistinguishable during normal fishing operations and,
- When distinguishable, it is not commercially feasible to separate due to the practical operation of UoA,
- The IPI stocks are not endangered, threatened or protected, or out-of-scope (ETP/OOS) species.
- The IPI stocks are not certified separately.

This fishery is within the scope of the MSC Fisheries Standard since it complies with the criteria established in the Fisheries Certification Process (FCP) v2.2. Section 7.4. The target species under Principle 1 (Brown shrimp *Farfantepenaeus aztecus*) is not an amphibian, reptile, bird, or a marine mammal. The fishery has not been enhanced and does not include introduced species nor use poisons or explosives. The fishery is not under any type of international controversy or international agreement. The client has not been convicted for a forced or child labour violation, neither convicted for a shark finning violation and there is no evidence of any type of labour abuse or employment of children.

Stakeholders have access to the national mechanism for resolution of conflicts or disputes through the Mexican legal framework that includes sufficient scope to cover the relevant issues. Although there is no internal document developed to that end in the organization yet.

Table II1: Unit(s) of Assessment (UoA)

UoA 1	Description
Target Stock	Brown Shrimp *(Farfantepenaeus aztecus)* in Mexican waters of the Gulf of Mexico (GOM)

Geographical area (FCP v3.0 7.5)	FAO Fishing Area 31 Atlantic Western Central, within Mexican Waters from 15 miles up to 60 fathoms
Fishing gear type(s) and, if relevant, vessel type(s)	Shrimp Bottom Trawling with industrial vessels, and charanga and castnet with artisanal boats.
Client group	Porto Jaibo
Other eligible fishers	Rey Mar
Justification for choosing the Unit of Assessment	The Unit of Assessment is coincident with the stock distribution of brown shrimp in Mexican waters

3. Pre-assessment results

3.1. Pre-assessment results overview

3.1.1. Overview

Regarding the Principle 1 the main issue seems to be the lack of transparency on the stock assessment and the reference points used to define the status of the stock. Regarding Principle 2, main issues are lack of information on by-catch species and the consequences of such impact on populations, habitats, and ecosystem in general. Regarding Principle 3, the main weaknesses are the absence of short term, defined goals, for other components of the ecosystem than the shrimp itself, and the lack of regular functioning of the specific management bodies.

3.1.2. Recommendations

3.1.2.1 Principle 1

Regular stock assessments must be publicly accessible and peer reviewed. Reference points must be known to understand the status of the stock.

3.1.2.2 Principle 2

Systematic bycatch information is required to be collected on at least 20% of the UoC-associated fleet fishing trips by on-board observers and electronic means. This information is necessary to understand the impacts of the fishery on other components of the ecosystem and to determine if measures are necessary to mitigate them.

3.1.2.3 Principle 3

Besides adopting more precise goals for the ecosystem components of the fishery, it is necessary to reinstate regular participatory mechanism to incorporate INAPESCAuts from fishers, permit holders, and processors, where the current system efficacity is evaluated, the scientific findings are shared, and the necessary measures can be debated and advised to the fishing authority.

3.2. Summary of Performance Indicator level scores

Table 3: Summary of Performance Indicator level scores

Principle	Component	IC	Performance indicators	Score range	Data deficient?
1	Outcome	1.1.1	Status of the stock	60-79	N
		1.1.2	Stock rebuilding		
	Harvest strategy	1.2.1	Harvest strategy	60-79	
		1.2.2	Harvest conttrol rules and tools	60-79	
		1.2.3	information / monitoring	60-79	N
		1.2.4	Stock assessment	<60	N
Principio	**Componente**	**IC**	**Indicador de Desempeño**		
2	In-scope species	2.1.1	Outcome / status	<60	Y
		2.1.2	Management strategy	<60	
		2.1.3	information / monitoring	<60	Y
	Out of scope and ETP species	2.2.1	Outcome / status	<60	Y
		2.2.2	Management strategy	<60	
		2.2.3	information / monitoring	<60	Y
	Habitats	2.3.1	Outcome / status	<60	Y
		2.3.2	Management strategy	<60	
		2.3.3	information / monitoring	60-79	
	Ecosystems	2.4.1	Outcome / status	<60	Y
		2.4.2	Management strategy	<60	
		2.4.3	information / monitoring	<60	Y
Principio	**Componente**	**IC**	**Indicador de Desempeño**		
3	Governance and policies	3.1.1	Legal framework	≥80	
		3.1.2	Consultation, roles and responsibilities	≥80	
		3.1.3	Long term goals	≥80	
	Specific management system	3.2.1	Specific goals for the fishery	60-79	
		3.2.2	Decision making process	60-79	
		3.2.3	compliance and enforcement	60-79	
		3.2.4	Management system performance evaluation	60-79	

3.3. Principle 1

3.3.1. Principle 1 background

The brown shrimp fishery (*Farfantepenaeus aztecus*) is a sequential fishery, developing both in coastal lagoons and in the high seas in Mexican federal waters of the northwest of the Gulf of Mexico, mainly in the states of Tamaulipas and Veracruz. The offshore brown shrimp fishery occurs in waters under federal jurisdiction from the border with USA to the coast of Tabasco from 15 miles to 60 fathoms. The fishery in lagoon systems and occur mainly in the Laguna Madre, Pueblo Viejo, Tamiahua-Tampamachoco, Alvarado and Coatzacoalcos.

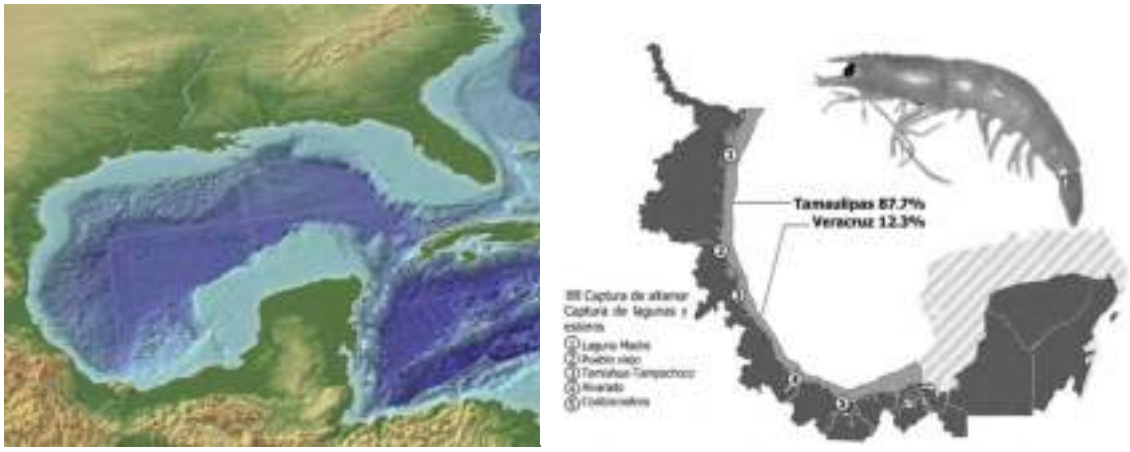


Figure 1. Gulf of Mexico continental shelf (Source: google maps) and distribution of the brown shrimp fishery (*Farfantepenaeus aztecus*) (Source DOF: 26/07/2022)

3.3.1.1. Description of the species and life history

The brown shrimp (*Farfantepenaeus aztecus*) is distributed from the US northeast Atlantic coast southward throughout the Gulf of Mexico, from Massachusetts to the Florida Keys and along the Gulf Coast to north-western Yucatan in Mexico.

Figure 2. Distribution and image of brown shrimp. Source: FAO.org

The shrimp life cycle begins in a precopulatory courtship and mating occurs immediately after the female has completed her preadult molt; there is sexual dimorphism and pheromones are involved for sexual attraction. In most, the eggs are fertilized at the time of laying. This occurs shortly after copulation when no seminal receptacle is present, and sometime later when it exists. Shrimp lay their eggs directly in seawater or are transported for short periods. Eggs are usually attached to pleopods by means of a substance produced by the egg membranes.

Spawning takes place at depths greater than 25 fathoms (45.72 meters) and it is there where the highest percentage of mature females is found throughout the year. The eggs are demersal and have a diameter of 0.26 mm when they hatch between 14 and 18 hours after spawning; 11 larval stages immediately develop, which are: five nauplius substages, three protozoa and three mysis. Depending on the temperature, the development time of the larval phase is 11 to 15 days. Larvae are found offshore in the water column. During the first post larval stages, the shrimp is planktonic in the high seas. Upon reaching a total length between 10 and 14 mm, the postlarvae migrate towards the lagoon systems. After entering estuarine waters, where they carry out the development of the second phase of their life cycle, the postlarvae concentrate in marginal areas, usually at a depth of less than 0.9 m where there is abundant vegetation and organic debris to avoid predators (Zimmerman and Minello, 1984, McTigue and Zimmerman 1998). Juvenile shrimp remain in these protected areas for 10 to 12 weeks and move into the deeper waters of the estuary, before returning to marine waters. (DOF, 12/03/2014)

It reproduces throughout the year, but there are periods of massive reproduction, generally two a year (which coincide with variations in temperature). The first is recorded during the first month of spring; this reproduction period is the one that produces the most important cohort of the year, due to the high probability of survival. It is assumed that this cohort

is the one that contributes the most important catches of the year and is called the **Annual Usable Population** (Solana-Sansores et al., 2003). The other important breeding period is in the fall months. This period is of maximum reproduction, but due to environmental conditions the viability of the products is less than the previous one. The sex ratio is relatively higher for females throughout the year (1:2,009); what it supposes to be according to its life cycle (Schultz et al., 1998). (DOF, 12/03/2014)

The brown shrimp can be found in the high seas throughout the year with two periods of maximum abundance: from June to August and from October to December. The juvenile shrimp population predominates in the catches from April to June (Gracia and Soto, 1990 and Gracia 1996). (DOF, 12/03/2014)

The first spawning age is six months, when it has a length of 140 mm and a total weight of 16 g (Castro, 1982). Regarding the average maximum size and weight, the estimates fluctuate in maximum length (L ∞) from 214 to 236 mm and in maximum weight (P ∞) from 54.7 to 74.2 g.

Growth parameters estimations after Chavez (1973b, in DOF, 12/03/2014) for both males and females are $L\infty$ = 178mm, $W\infty$ = 46g, and k= 0.1904/month, t_0=0.8720.

Brown shrimp larvae feed on phytoplankton and zooplankton (Minello and Zimmerman 1991). Postlarvae feed mostly on phytoplankton, epiphytes, and detritus (Gleason and Zimmerman 1984). Juveniles and adults feed primarily at night and are more carnivorous than younger shrimp. Juveniles and adults prey on polychaetes, amphipods, insect larvae, as well as detritus and algae.

Since 1996, INAPESCA has monitored the migration of the brown shrimp, that is, the exit of organisms towards the sea, in the coastal lagoons of Tamaulipas and Veracruz. In studies carried out by the National Fisheries Institute in 2003 in the coastal lagoons of both states, migration was evaluated from the first two months of the year to August and it was observed that shrimp migratory movements occurred during all months of the evaluated period, however those of greater intensity occur when low tide and high tide coincide with the lunar periods and the age of 3.5 months of the individuals, observing that there are maximum peaks of shrimp output mainly in the lunar phases of the last fortnight May, June and early July. The population present in the migratory flow at the end of May and June is the product of the February-March reproduction and this represents the most important for the fishery, since its growth period takes place in the spring-summer season in suitable conditions to achieve greater survival and development. There is another reproduction period in September-October but with less probabilities of success in its survival and development as it develops in the autumn-winter season. (DOF, 12/03/2014) INAPESCA monitoring program is currently active (Dr. Alejandro González Cruz, personal communication).

4.1.1.2 Stock assessment

Stock synthesis-based models are used to estimate Fishing Mortality and Spawning Stock Biomass as indicators to determine stock status.

The analysis of the shrimp fisheries of the Gulf of Mexico is carried out by INAPESCA that has gathered information since 1970´s. Information is gathered from CONAPESCA´s catch records and direct monitoring in coastal lagoons and high seas. (SAGARPA – INAPESCA, 2014).

The analysis is carried out in three stages:

- analysis of productivity indicators of the shrimp fishery (IPPC) to determine the state of health of the resource,
- selection of indicators by fishing resource and utilization scenarios
- decision making.

The biological-fisheries productivity indicators of the shrimp fishery (IPPC) that were obtained and analysed were chosen based on the historical information collected from commercial fishing and direct sampling carried out by the Aquaculture and Fisheries Research Centres in Tampico and Veracruz (CRIAP's) of the Atlantic region belonging to the INAPESCA. The IPPC indicators that were considered are:

a) Fishery indicators (catch, effort, fishing yield and line to trash ratio)
b) Population indicators during the closed season (breeding females, recruitment, yields)

Additionally, simulation analysis were carried out to evaluate scenarios with different closure periods.

Every year, the local INAPESCA´s office in Tamaulipas, CRIAPY – Tampico develops four research cruises in collaboration with stakeholders, to analyse size structure and brown shrimp abundance. At the same time a migration study is developed in Mezquital Lagoon or Boca de Corazones, Tamiahua, using the authorized fishing gear known as

"charanga". This has been measured since 1994. These studies determine the closures for both artisanal and industrial vessels.

As an example, in 2022, migration monitoring was carried out during the months of May, June and July, in Laguna Madre in Boca del Mezquital, to evaluate the movement of shrimp migration from the lagoon to the sea during the fishing closure. The days of greatest migration were observed in the first half of June, the day of greatest catches occurred on June 15 with a 6.67 kg/night catch.

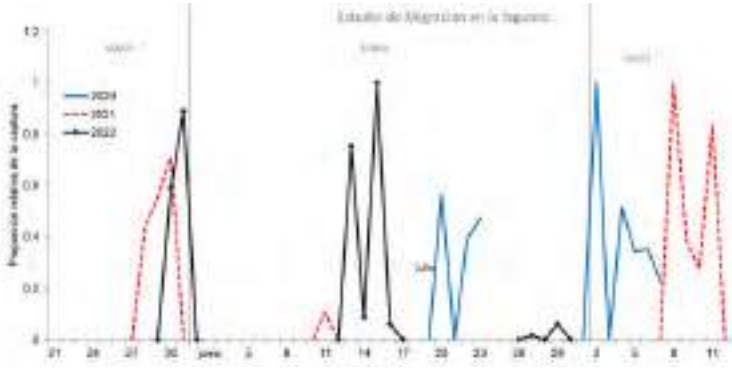


Figure 3. Migration process of brown shrimp (*Farfantepenaeus aztecus*) in Laguna Madre Tamaulipas, toward the ocean on fishing closures of 2020 to 2022. (Source: SADER-INAPESCA, 28/08/2022)

The results from oceanic monitoring program showed the lowest fishing yields in the period 2018-2022, probably associated to a decrease in rainfall (Wakida-Kusunoki, 2011; Gracia, 1997; Wither and Dilworth, 2002)

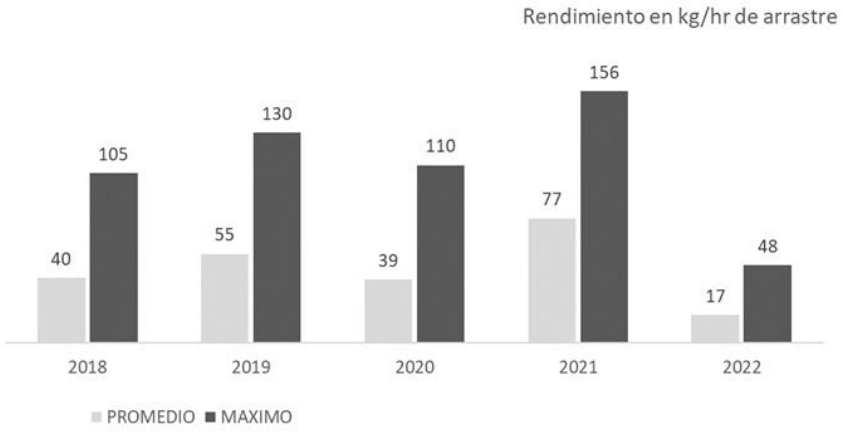


Figure 4. Average performance and maximum performance measured in kilograms per hour of trawling, observed from the Research cruises, carried out on the coasts of Tamaulipas during the second half of July from the years 2018 to 2022. (Source: SADER-INAPESCA, 28/08/2022)

After these results, the projections of shrimp sizes were presented and analysed, in order to determine the opening of the fishing season.

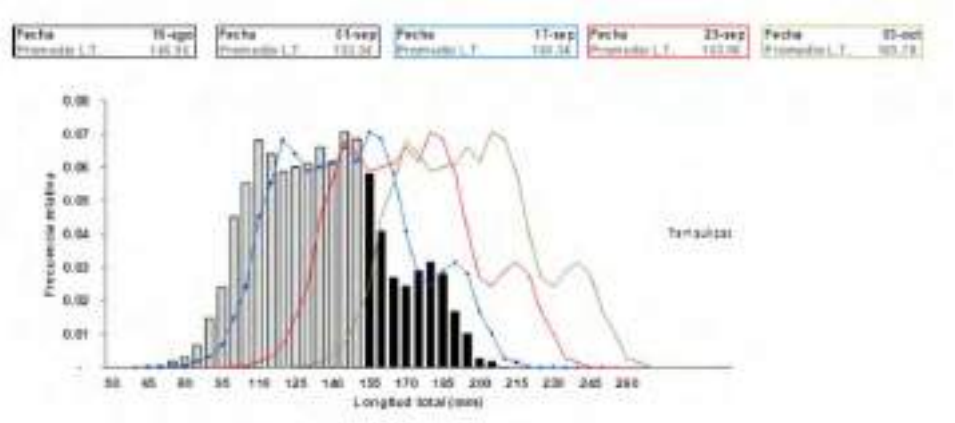


Figure 5. Projections of shrimp sizes from sampling carried out at sea on the coasts of Tamaulipas. (Source: SADER-INAPESCA, 28/08/2022)

After this results the fishing opening took place on October 3rd in order to maximize sizes, minimize the presence of juveniles and maximize economic performance. (SADER-INAPESCA, 28/08/2022)

The average annual shrimp catch of Tamaulipas and Veracruz from 2010-2020 was 10,921 tons, production from both the lagoon and the high seas; with averages of 4,040 tons (40%) for Laguna and 6,521 tons (60%) for the high seas.

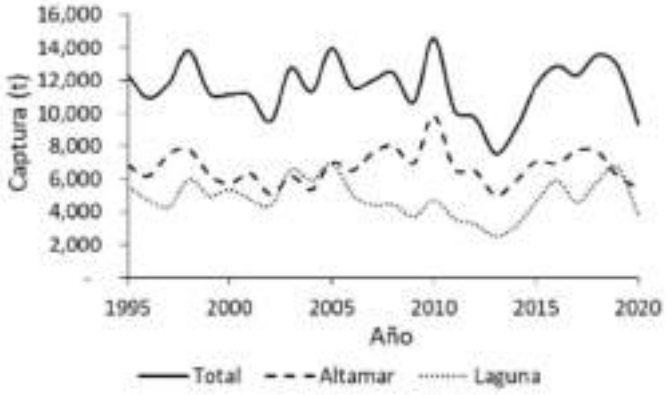


Figure 6. Historical behaviour of shrimp catches of Tamaulipas and Veracruz (1995 - 2020). Source DOF: 26/07/2022.

Shrimp catches of the states of Tamaulipas and Veracruz have fluctuated since a maximum of 14,595 tons in 2010 to a minimum of 7,561 tons in 2013 (Figure 3). Annual catches have mostly been around the average value of the available historical series of 11,557 tons (1995-2020) and are reported as 13,576 tons in Tamaulipas in 2021.

The fishing effort on the high seas, measured in the number of effective days of fishing, presents a downward trend since the year 2000. This effort trend is probably the result of the low profitability of the activity that has been presented since 2001, due to the decrease in prices and increase in the cost of INAPESCAuts. In Tamaulipas, the fishing effort decreased by 18% during 2018 in relation to 2016. In Veracruz, the effort remained stable from 2001 to 2010, showing a slight increase in 2000, 2007 and 2010, presenting from 2012 to 2015 a decrease of 20% compared to the average, however, in 2018 fishing days increased 18% compared to 2015. (DOF: 26/07/2022)

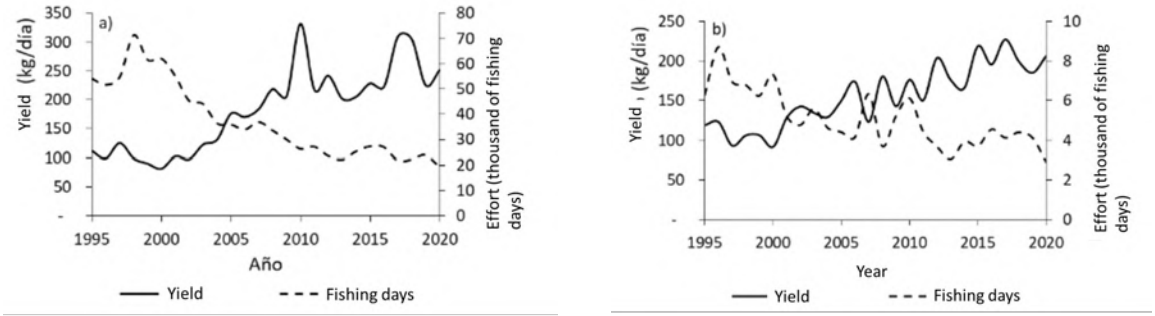


Figure 7. Fishing effort and yields in Tamaulipas (a) and Veracruz (b) from 1995 to 2020. Source: DOF:26/07/2022

On the other hand, the catch per unit effort (CPUE), estimated in yield (kg/day) in Tamaulipas shows an upward trend in the period (2001-2010). In 2017 and 2018 there was an increase of 28% and 26%, respectively, in comparison to the yields observed in 2016. On the other hand, the yield in Veracruz showed an upward trend of 2001 to 2012, with a slight decrease in 2011 to 151 kilograms per day, decreasing in 2013 and 2014, to increase to 112 kilograms per day in 2015, falling 12% again in 2018 from the previous year.

As of July 7, 2022, according to CNP (2022) there are 202 offshore shrimp vessels (Tamaulipas and Veracruz), 175 corresponding to Tamaulipas fleet. In coastal lagoon waters there are 6662 charangas and 104 cast nets, 2562 charangas and 104 cast nets belonging to the state of Tamaulipas.

According to official information on the Fishing National Chart the fishery is exploited at a Maximum sustainable yield. Source: DOF:26/07/2022

An updated Fishing National Chart for brown shrimp has been presented to CONAPESCA to be published. This document is not available yet, but it is expected to include an update of the results of the stock assessment. This is to be published in 2024. (Personal communication Raul Lara).

4.1.1.3 Brief history of fishing and management

The shrimp fishery in the Tamaulipas and Veracruz region, particularly in the state of Tamaulipas, is one of the most important in the Gulf of Mexico from a social and economic point of view. The predominant species in the catches is the brown shrimp (*Farfantepenaeus aztecus*) which contributes 90% of the total production. Its exploitation integrates a sequential activity, taking advantage of the biological cycle of the shrimp, which allows the development of the capture both in coastal lagoons in its juvenile stage, and in the high seas in its adult phase. This determines to a large extent the dynamics of the administration of the shrimp fishery throughout the Gulf of Mexico and causes conflict between the coastal sector, the lagoon sector, and the high seas industrial sector. (SAGARPA – INAPESCA, 2014).

The shrimp fishery operations began in 1950 in the Gulf of Mexico without neither catch regulation nor a closure season system (Cervantes-Hernández & Gracia, 2011). In 1993 after over-exploitation was detected, an official fishing closure was implemented throughout the Gulf of Mexico, and within its lagoon systems (SAGARPA-INAPESCA, 2012).

In recent years, the closed seasons for the northern Gulf of Mexico have ranged from May to July for artisanal fishing and from May to August for industrial fishing. The opening date of the fishing season for the zones varies according to the results of the investigations that the National Fisheries Institute (INAPESCA) carries out annually. (SAGARPA – INAPESCA, 2014)

Since 1996, INAPESCA has monitored the migration of the brown shrimp; that is, the release of organisms towards the sea, in the coastal lagoons of Tamaulipas and Veracruz. In these evaluations, it has been observed that the most intense movements occur when low tide and high tide conditions occur with the lunar periods; regardless of whether it is a full or new moon, observing that there are maximum shrimp output peaks mainly in the lunar phases of the last fortnight of May, June and early July. (SAGARPA – INAPESCA, 2014)

The population present in the migratory flow at the end of May and June is the product of the February-March reproduction, and this represents the most important for the shrimp fishery, since its growth period takes place in the spring-summer season, that is, in suitable conditions to achieve greater survival and development, so it is necessary to protect this migratory flow of the resource towards the sea for its growth and reproduction. There is another reproduction period in September-October but with less probabilities of success in its survival and development because it takes place in the autumn-winter season. The closure proposals made by the Institute are aimed at protecting the main migratory flow of the resource to promote sustainable fishing. (SAGARPA – INAPESCA, 2014)

Regarding the Opening of the season for the capture of the shrimp resource on the high seas, INAPESCA carries out research cruises during the closed season to make a projection based on the growth of shrimp and define the optimum date for the opening of the season, considering that at least 80% of the population size structure are greater than 135 mm in total length and 17 grams in total weight, with a commercial category of 26/30. (SAGARPA – INAPESCA, 2014)

3.3.2. Total Allowable Catch (TAC) and catch data

The information about catches from the UoA corresponds to the latest official published information. There is no TAC for this fishery. The UoC catches are around 500 t per year.

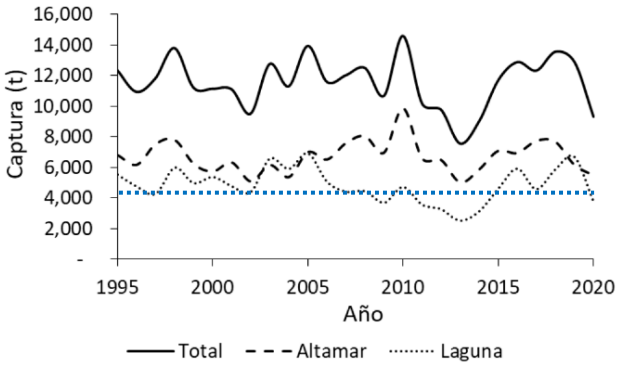
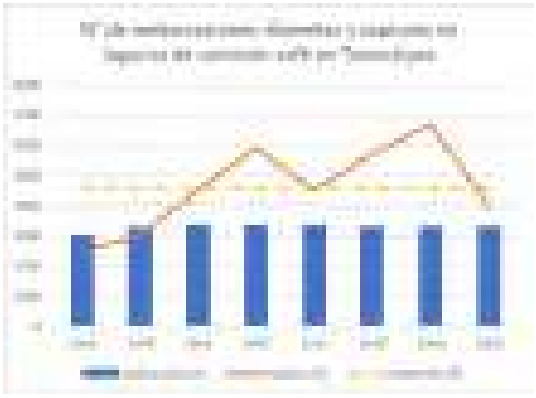
Table V: Catch data

Catch Data	Year	Amount
TAC	NA	NA
UoA share of TAC	Na	NA
Total catch by UoA (average) (DOF, 26/07/2022)	Year (2012 -2021)	Amount (12,918, t)
Total catch by UoA (most recent year)	Year (2021)	Amount (13,576, t)

Total catch by UoA (second most recent year)	Year (2020)	Amount (11,447, t)

3.3.3. Principle 1 Performance Indicator scores and rationales

PI 1.1.1 – Stock status

PI 1.1.1		The stock is at a level that 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**			
	Guidepost	It is **likely** that the stock is above the point of recruitment impairment (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?	**Yes**	**Yes**	**No**
Rationale		INAPESCA has a permanent program that includes the analysis of official catches, direct samplings (lagoon and high seas), and commercial fishing sampling campaigns assessing catches, effort, size classes analysis, yield, recruitment, and number of ovigerous females. With this information they estimate different scenarios and determine the fishing closure. This has been done at least for the last 40 years. The fishery opens when sampling results demonstrate that more than 80% of the population structure are greater than 135mm. Annual catches have mostly been around the average value of the historical series (1995-2020) for 11,557 t., ranged from 14,5994 (2019) to 7,561 (2013). Catches from lagoon areas (recruits) have been steady along the years with average of 4,040 t. Shrimps are short-lived organisms that make them highly productive.  Historical catch trend at the lagoons fluctuating around 4,040 tons (dotted blue line) shows the recruitment has been stable along 15 years. Source: National Fisheries Chart. 2022  Correlation between number of small-scale boats and lagoon captures 2013-2020 in Tamaulipas. Source: National Fisheries Chart (2022) and CONAPESCA Yearbooks (2013-2020). The levels of reproductive biomass (BR) are analyzed every year, but we did not find updated public reports, except the one of 2014. Nevertheless, the trends in capture for a stable effort of the small-scale fleet in lagoons along the last 8 years of the series can imply that the recruitment is stable and has not been impaired. Thus, it is highly likely that the stock is above the point of recruitment impairment (PRI) and SG60 and SG80 are met.		

b	**Stock status in relation to achievement of maximum sustainable yield (MSY)**			
	Guidepost		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	According to the Fishing National Chart (2022) (DOF: 26/07/2022), “the brown shrimp fishery in the northwest of the Gulf of Mexico is exploited to the maximum sustainable level”. The fishing effort on the high seas, measured in the number of effective days of fishing, presents a downward trend since the year 2000. On the other hand, the catch per unit effort (CPUE), estimated in yield (kg/day) in Tamaulipas shows a upward trend in the period (2001-2010), a downward trend on to 2013. In 2017 and 2018 there was an increase of 28% and 26%, respectively, with an upward trend until 2020. Nevertheless, INAPESCA´s report in August 2022, although provides information to infer a healthy status, does not provide any explicit insight about the status of the stock. Therefore we can not affirm that SG80 is met.			

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)	Implicitly, it is considered the catch at lagoons as a proxy of recruitment	Implicitly, for a stable effort at the lagoons the catch must be around 4,000 tones/season	Stable
Reference point used in scoring stock relative to MSY (SIb)	No reference point		

Draft scoring range	**60-79**
Information gap indicator	**More information sought** *Make public updated stock assessments*
Data-deficient? (Risk-Based Framework needed)	**No**

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/PI 1.1.1A 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/PI 1.1.1A 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/PI 1.1.1A SG80.
	Met?	**Yes**	**No**	**No**
Rationale		Brown shrimp is highly productive since it is a short-lived animal, grows fast, matures early and is highly fecund, and disperses offspring widely. Abundance is driven primarily by environmental		

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
		conditions. Hydrologic conditions in shrimp nursery areas play an important role in dictating next season potential harvest. Thus, shrimp population is highly dynamic given small size shrimps grow to commercial size and by adult continuous movement to offshore areas. There are several elements that make up the current strategy including limit of fishing permits, fishing closure, special nets determined in NOM-002-SAG-2013. Actual measures include a 45 days closure in the lagoons to protect nursery areas and more than 100 days closure in the high seas. The shrimp ban periods are intended to allow the massive migration of the juvenile population from the lagoon to the sea and in the high seas to protect the growth of individuals to achieve maximum development and reproduction. The closed season on the high seas begins regularly at the end of April and beginning of May and concludes based on the biological studies carried out by SAGARPA through the National Fisheries Institute mainly about the size of the individuals. In the coastal lagoon fishery, the closure begins in the last lunar period of May or early June and ends 45 days later, trying to protect three lunar periods, the most important in the life cycle of the resource and for this fishery during the year (Management Plan, DOF 12/03/2014) Every season, special monitoring from INAPESCA in collaboration with local stakeholders take place to determine the exact moment for the fishing opening, when 80% of the total population reaches lengths of 135 mm or more. These measures are expected to ensure that the fishery does not impair recruitment and maintain the stock around a proxy of MSY. Therefore, SG60 is met. The HS is responsive to the variation of indicators such as size and reproductive season. Nevertheless, as there are not clear objectives it is not possible to ensure that they are being reached through those measures working together. SG80 is not met.		
b	**Harvest strategy evaluation**			
	Guide post	The harvest strategy is **likely** to work based on prior experience or plausible argument.	The harvest strategy has been **tested** and is expected to meet the objectives reflected in PI 1.1.1/ PI 1.1.1A SG80 or there is evidence that the harvest strategy is achieving its objectives reflected in PI 1.1.1/ PI 1.1.1A SG80.	The performance of the harvest strategy has been **evaluated** and evidence exists to show that it is achieving the objectives reflected in PI 1.1.1/ PI 1.1.1A SG80, including being clearly able to maintain stocks at target levels.
	Met?	**Yes**	**No**	**No**
Rationale		The harvest strategy has been in place for many years, and it has been maintaining the stock pretty stable. Therefore, the strategy is likely to work based on prior experience. SG60 is met. While the harvest strategy has not been tested it is adapted every year after the monitoring program to determine the fishing opening. As the National Fisheries Chart or the INAPESCA documents do not provide evidence that the harvest strategy is getting a sustainable level for the stock, SG80 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?	**Yes**		
Rationale		The fishery is regularly monitored through the collection and analysis of landing statistics, samplings, and research campaigns. The fishery has a significant amount of biological-fishery information including catches, CPUE, size, sex structure, growth, mortality, reproduction among others. Therefore, it meets the requirements of SG60		
d	**Harvest strategy review**			
	Guide post			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			**No**

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Rationale		The management Plan published in 2014 established a review of the Plan every three years that had not been accomplished. SG100 is not met.		
e	**Shark finning**			
	Guide post	There is a **high degree of certainty** that shark finning is not taking place.		
	Met?	**NA**		
Rationale		The target species is not a shark. Therefore, this scoring issue does not apply.		
f	**Review of alternative measures**			
	Guide post	There has been a review of **alternative measures** to minimise UoA-related mortality of unwanted catch of the target stock.	There is a **review** every 5 years of **alternative measures** to minimise UoA-related mortality of **unwanted catch** of the target stock and they are implemented as appropriate.	There is a **review** that happens every 2 years of **alternative measures** to minimise UoA-related mortality of **unwanted catch** of the target stock, and they are implemented, as appropriate.
	Met?	**NA**	**NA**	**NA**
Rationale		As the fishery take measures to avoid catch under 135 mm, there is not unwanted catch in this fishery, and therefore aspect f) is not scored.		

Draft scoring range	**60-79**
Information gap indicator	

PI 1.2.2 – Harvest control rules and tools

PI 1.2.2		There are well-defined and effective HCRs in place		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**HCRs design and application**			
	Guide post	**Generally understood** HCRs are **in place** that are **expected to reduce the exploitation rate as the PRI is approached.**	**Well-defined** HCRs **are in place** that **ensure** the exploitation rate is reduced as the PRI is approached, and are expected to keep the stock **fluctuating around** a target level consistent with (or above) MSY, or for key LTL species at levels 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 **most** of the time, taking into account the ecological role of the stock.
	Met?	**Yes**	**No**	**No**
Rationale		The only explicit harvest control rule (the season opens when a survey determines that more than 80% of the stock is over 135 mm) is oriented to avoid growing overfishing and consequently (as this is a short lifespan species) recruitment overfishing, therefore keeping the stock over the PRI. SG60 is met. Nevertheless, there are not other explicit harvest control rules that ensure that the stock is fluctuating at a level consistent with MSY or a proxy. SG80 is not met.		
b	**The robustness of HCRs 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		As there are not explicit HCRs to maintain the stock around MSY or a proxy, environmental and fisheries uncertainties are not well addressed by the measures in place. SG80 is not met.		
c	**Evaluation of HCRs**			
	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		There is some evidence about the stability of the stock, as effort has decreased and catch has been stable, which means that CPUE has experienced an increase trend, so the measures in place seem to be effective to avoid overfishing. Therefore, SG60 is met. Nevertheless, as there is not any proxy regarding MSY and no rule to maintain the stock around it, SG80 is not met.		

Draft scoring range	**60-79**
Information gap indicator	Information sufficient to score PI. It is recommended to make public the shrimp stock assessments annually.

PI 1.2.3 – Information and monitoring

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Range of information**			
	Guide post	**Some** relevant information related to stock structure, stock productivity, and fleet composition is available to support the harvest strategy.	**Sufficient** relevant information related to stock structure, stock productivity, fleet composition, and other data are available to support the harvest strategy.	A **comprehensive range** of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals, and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	**Yes**	**Yes**	**No**
Rationale		The brown shrimp fishery has been monitored since 1995, with estimations of stock structure, stock productivity, fleet composition, fishing and natural mortality. There are time series of information since 1995 of brown shrimp from inshore waters to 60 fathoms. Fleet composition is determined by fishing permits. On 2014, NOM-062-SAG/PESC-2014 was published. From then on, industrial vessels are required to have a real-time satellite monitoring system supervised by CONAPESCA. This system has been in effect to date except for a period of several months in which the system was modified in 2022-2023. The catches of industrial vessels are reported in the arrival notices (avisos de arribo), upon arrival at port. In the case of the artisanal fleet, catches need to be reported in arrival notices, however this is difficult to monitor and is therefore subject to uncertainty. Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data are available to support the harvest strategy achieving SG 80. Uncertainty in regard of artisanal removals and the lack of public stock assessments impede this PI to achieve SG100.		
b	**Monitoring**			
	Guide post	Stock abundance and UoA removals are monitored and **at least 1 indicator** is available and monitored with sufficient frequency to support the harvest strategy.	Stock abundance and UoA removals are **regularly monitored at a level of accuracy and coverage consistent with the harvest strategy**, and **1 or more indicators** are available and monitored with sufficient frequency to support the harvest strategy.	**All information** required by the harvest strategy is monitored with high frequency and a high degree of certainty, and there is a good understanding of the inherent **uncertainties** in the information (data) and the robustness of assessment and management in dealing with this uncertainty.
	Met?	**Yes**	**No**	**No**
Rationale		Stock abundance is not properly monitored but an offshore CPUE proxy is closely followed. The onshore CPUE is not that reliable, but, as it is underestimated, its stability is a good sign. The main indicator is the proportion of adults in the population before opening the fishing season, which appears to work to support the current harvest strategy. SG60 is met but not SG80.		
c	**Comprehensiveness of information**			
	Guide post		There is good information on all other fishery removals from the stock.	
	Met?		**No**	
Rationale		It is known that there is an illegal shrimp market that is sold in the domestic market. There is not enough information to determine its quantity, which is why there is no good information on all other fishery removals from the stock. Thus, SG80 is not met.		

Draft scoring range	**60-79**
Information gap indicator	**Information sufficient to score PI**

PI 1.2.4 – Assessment of stock status

PI 1.2.4		There is an 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 strategy.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	Met?		**No**	**No**
Rationale		The current assessment seems to be working for the particularities of this population. Nevertheless, it has not been public in the last 10 years, and so far, it has been no possible to understand the more recent findings. SG80 is not 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?	**No**	**No**	
Rationale		There is a criterion for the opening of the fishing season and there is information that would allow to establish some sort of reference points, but such thing has not been available for this auditory. SG60 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 evaluates stock status relative to reference points in a **probabilistic** way.
	Met?	**Yes**	**No**	**No**
Rationale		The assessment identifies major sources of uncertainty as considers the variability of the species, associated with environmental conditions. Thus, SG60 is met. However, as the stock assessment has not been made public for the last 10 years, it is impossible to understand if the assessment takes uncertainty into account. SG80 is not met.		
d	**Evaluation of assessment**			
	Guide post			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			**No**
Rationale		As we do not have information to score this PI, SG100 is not met.		
e	**Peer review of assessment**			
	Guide post		The assessment of stock status is subject to peer review.	The assessment has been **internally and externally peer** reviewed.
	Met?		**Yes**	**No**
Rationale		The assessment of stock status is usually subject to internal peer review as other scientists, members of INAPESCA, review the assessments. Thus, this PI achieves SG80. Since no evidence could be found that it is peer reviewed externally, SG100 is not met.		

Draft scoring range	**<60**
Information gap indicator	**More information sought** *The stock assessments must be accessible.*

3.4. Principle 2

3.4.1. Principle 2 background

- ***The Gulf of Mexico aquatic ecosystem***

The Gulf of Mexico is a confined space of its semi-enclosed bowl-shaped basin and has all the major features of an ocean, as well as, it is partitioned by numerous rivers, most with watersheds that drain extensive land areas (Gulf Coast Ecosystem Restoration Taskforce, 2011). The Gulf of Mexico has an area of 1,507,639 km², an average depth of 1,615 m, and a volume of 2,434,000 km³. (in https://tos.org/oceanography/article/the-gulf-of-mexico-an-overview#full-text)

The continental shelf is the relatively flat, shallow expanse that extends from the coast to a water depth of approximately 120 m. In the northern Gulf of Mexico, the shelf extends from 100 km to 200 km offshore. Its surface is topographically smooth. The Mexican shelf south of the Rio Grande is the narrowest in the Gulf (~40 km wide in some areas). The topography along both the West Florida shelf and the Campeche Bank is low relief and is broken only by reefs and relict shoreline features.

At the edge of the continental shelf, the bathymetry steepens to form the continental slope, which extends down to roughly 2000 m, onto the flat Sigsbee Abyssal Plain at about 3500 m.

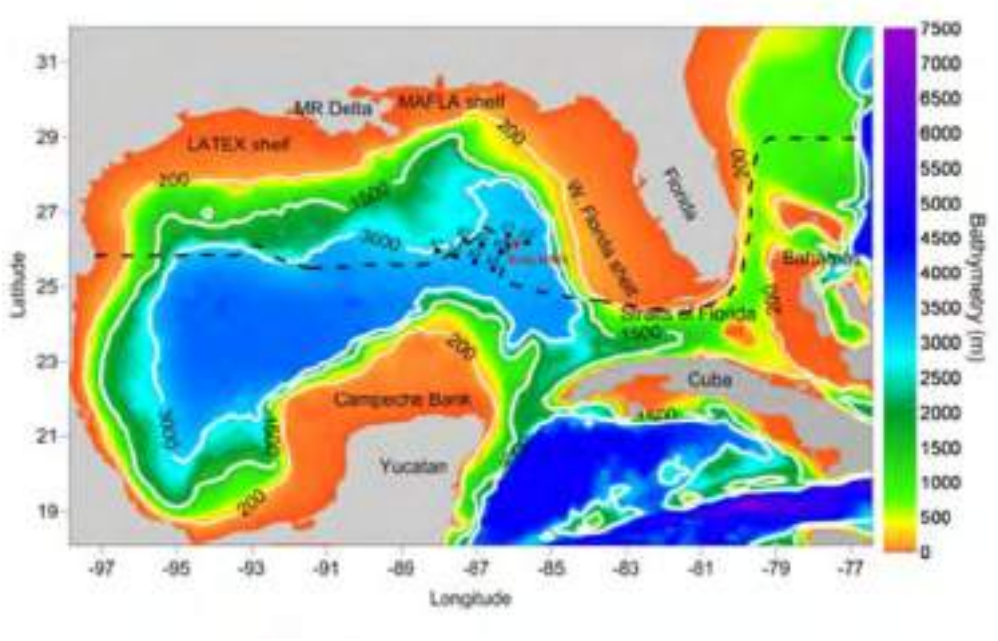


Figure 8. Bathymetry of the Gulf of Mexico (Source Eakins, et al, 2011)

Bathymetry of the Gulf of Mexico

Bottom types and habitats in the GOM are mostly muddy and sandy.In the northern coast of the GOM, a strong division for continental shelf areas exists between sandy environmentes in the east (Mississippi to Florida) and muddy environments in the west (Louisiana and Texas). The deeper parts of the Gulf seabed (>200 m) are comprised mostly of mud sediments, but sands are occasionally detected in the sparse samplings of these depths. (Jenkins, 2011).

Figure 9. Dominant Bottom Typse of the Gulf of México. Mud Subdominant, Mud Dominant, Sand Subdominant, Sand Dominant, Rock Subdominant, Rock Dominant, Gravel Subdominat, Gravel Dominant. (Source: Jenkins, 2011)

The loop current dominates the general circulation of the Gulf of Mexico, forms near the Yucatan Peninsula, where disorganized flow patterns in the Caribbean Sea are compressed against the continent and merge as they flow into the Gulf of Mexico as a single current. It is influenced by freshwater inflow from rivers and altered through water density differences and bathymetry. The Gulf Stream flows along the continental slope to Cape Hatteras and then leaves the coastline to flow toward the open ocean, heading across the North Atlantic toward Europe. The extent of the northern intrusion of the Loop Current in the Gulf of Mexico changes greatly on an annual basis, sometimes extending all the way to the northern Gulf and at other times staying close to southern Florida and the northern coast of Cuba. The Loop Current sheds some of the largest mesoscale eddies in the world ocean (http://theseasproject.weebly.com/the-gulf-of-mexico.html#Basic%20Information)

These currents transport surface waters of tropical origin into the Gulf of Mexico where it then feeds the Florida current and transports heat poleward. Sea surface temperature is related to the loop current. Along the loop current where the white arrows are concentrated is the warmest water, around 80 degrees F. (http://theseasproject.weebly.com/the-gulf-of-mexico.html)

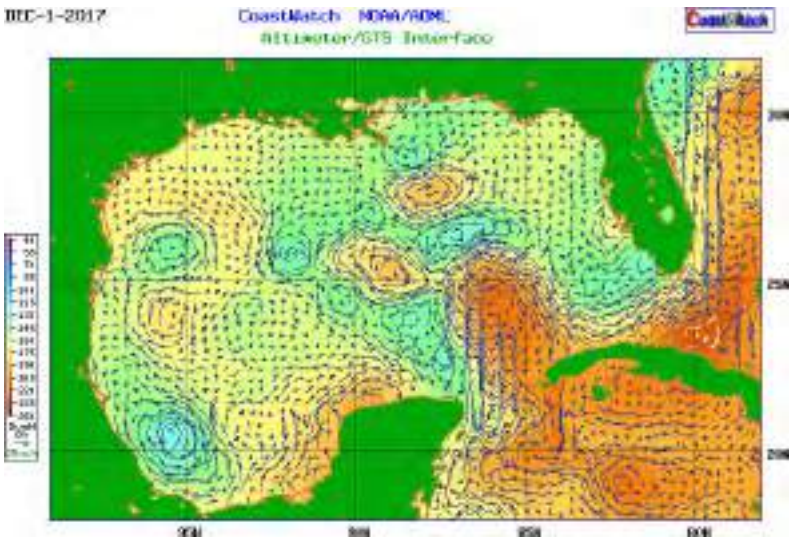


Figure 10. Gulf of Mexico currents field in the Gulf of Mexico (Image courtesy of NOAA, source: https://oceanexplorer.noaa.gov/okeanos/explorations/ex1711/logs/dec1/welcome.html)

Large amounts of freshwater discharges from rivers and coastal lagoons as well as urban waters discharges. Together, they are responsible for many coastal systems with great environmental heterogeneity and biological diversity (Toledo–Ocampo, 1996; Arenas–Fuentes and Salas–Pérez, 2005). However, the environmental conditions are not suitable for the development of most coral reefs communities (Jordán–Dahlgren, 2004), covering less than 1% of the shallow continental shelf. (Jordán–Dahlgren, 2004) (in Salas-Pérez and A. Granados-Barba, 2008) (in https://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0187-62362008000300005)

Within the GOM there are several reef systems, most of them located in the Campeche Bank, too far away of the influence area of the brown shrimp vessels. In the northern coast of the Mexican Coast the Tuxpan Reef is a platform type reef with a typical ellipsoidal shape. It belongs to the North Veracruz Reef System, the largest of the GOM. The Veracruz Reef System (SAV) is located off the coasts of the municipalities of Veracruz, Boca del Río and Alvarado. It is made up of 28 reef formations, keys and islands and represents the largest reef system in the central region of the Gulf of Mexico, which is home to several protected species. (https://www.cemda.org.mx/sistema-arrecifal-veracruzano/)

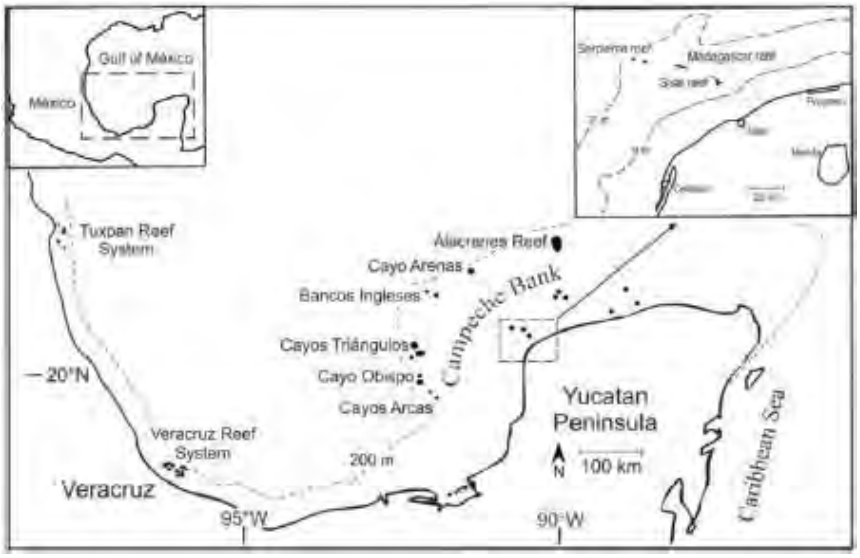


Figure 11. Reef systems of the Mexican Atlantic highlighting the Sisal Reefs (Zarco Perello et al 2014).

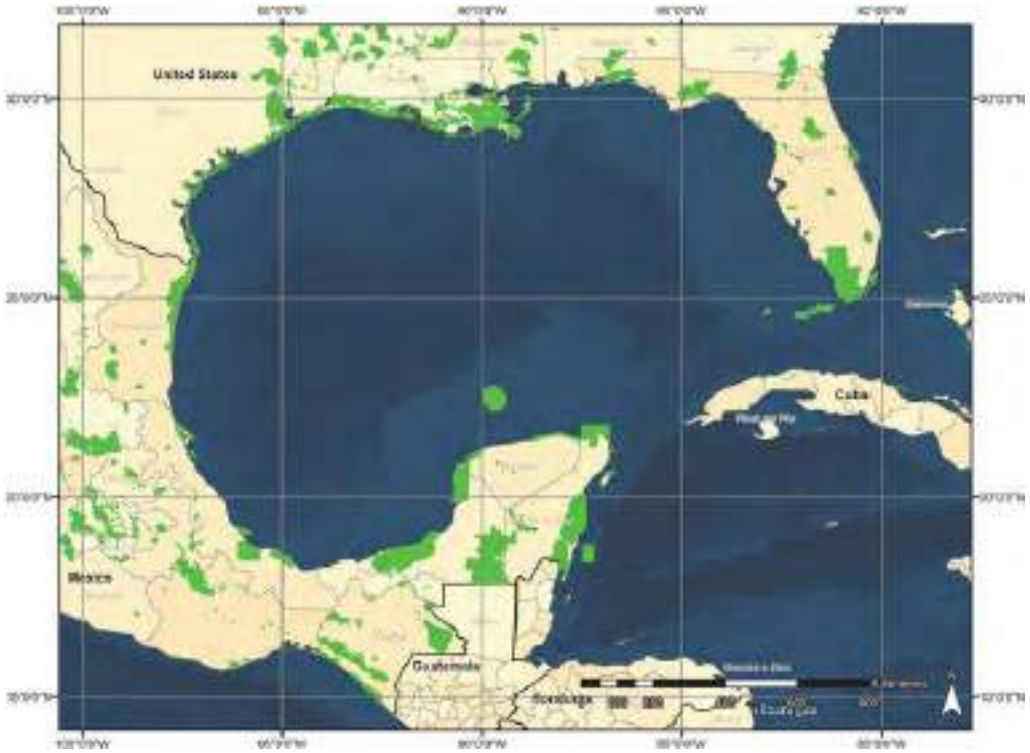


Figure 12. Protected coastal areas of the Gulf of Mexico, shown in green (Burger 2017).

The Mexican Gulf of Mexico Coastal Zone has an oil industry impacting the coastal Mexican states, especially Tamaulipas, Veracruz, Tabasco, and Campeche (Yáñez-Arancibia 1999; Yáñez-Arancibia et al. 1999). In https://www.harteresearch.org/sites/default/files/inline-files/18.pdf In 2010, the GOM suffered a major catastrophe as over 200 million gallons of crude oil flowed into from the BP Deepwater Horizon oil spill in US waters. As a result, the Gulf Coast Ecosystem Restoration Task Force was created in order to address the damage, address the longstanding ecological decline and begin moving toward a more resilient Gulf Coast Ecosystem. (Obama, Barack. "Executive Order--Gulf Coast Ecosystem Restoration Task Force". whitehouse.gov. Retrieved 24 March 2011 – via National Archives.). It included a binational initiative between Mexico and the USA, generating a huge amount of information.

Gear description

Bottom Trawl

The high seas fishing system used is a double-rig bottom trawl type with twin nets for capturing shrimp. The fishing gear is made up of two nets per band, each pair of nets with two boards or trawl doors to which the external side arms are connected. By means of an iron skate the internal lateral arms are connected. The doors and the skate are attached to the tow cable by three steel cables known as gauges that may vary between 30 and 99 m. (DOF, 12/04/2014)

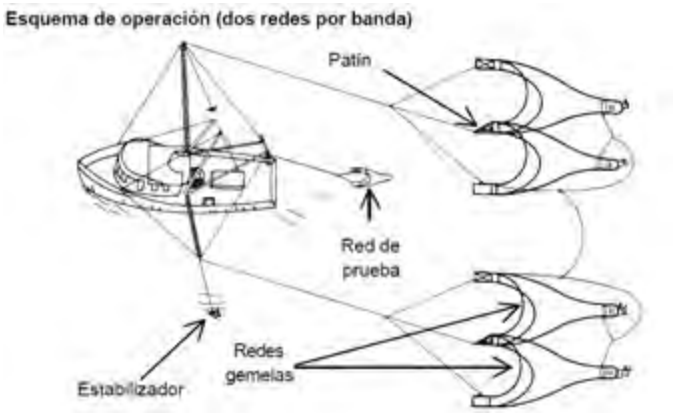


Figure 13. Operation scheme of twin nets for shrimp fishing in the hi seas area of the Gulf of Mexico (Source: DOF, 12/04/2014).

Sea Turtle Excluder Device (TED):

Sea turtle excluder devices (TED) of the rigid type are gears that are installed between the body and bag of shrimp trawl nets; They are made up of a cylindrical extension of netting, a solid grill fixed inside with an angle of inclination that varies between 35° and 55° or between 125° and 145°, depending on the type of excluder in question, whose function It is the diversion of adult and juvenile sea turtles towards an opening known as an "escape exit." Their use is mandatory after NOM-061-SAG-PESC/SEMARNAT-2016.

Charanga

The legal gear used by artisanal fishery is “charanga”. The "charanga" is a trap-type fishing system. It is installed in shallow areas of coastal lagoons, or estuary channels through which water currents circulate, generated mainly by tidal changes. Each charanga is made up of two barriers or eaves (stakes or reeds made of plant material or netting), arranged in the shape of a "V" without a vertex, which guide the resource being fished towards a slaughterhouse where the "yagual" is located. The "yagual" is removable depending on the fishing periods and seasons, which gives the system the possibility of remaining "inactive" during the period in which it is not installed.

The operation of the fishing system is a function of the presence of the shrimp, due to their migratory movements and the tidal periods and intensity of the currents generated by their effect, which influence the movement of the fishing resource, leading it to the slaughterhouse, where one or two fishermen catch it from smaller boats using spoon nets.

The main daily fishing periods are between 6:00 p.m. and 11:00 p.m., at the end of the tidal current produced by high tide or coinciding with low tide. (DOF, 21/11/1997)

In-scope species, Out-of-scope species and Species Endangered, threatened, or protected (ETP)

The MSC Certification Requirements v.3.0 (MSC 2023) categorizes the bycatch of the target species as follows:

- **In-scope species**, defined as those species that are not assessed under Principle 1, that are not classified as Species Endangered, threatened, or protected (ETP), specifically fish and invertebrates and
- **Out -of-scope (OOS),** species impacted by the UoA that are classified as amphibians, reptiles, birds, or mammals hereafter known as OOS species, (SA3.1.4a, MSC v3.0, 2023) and **Species Endangered, threatened, or protected (ETP)** are species impacted by the UoA that are classified as fish or invertebrates and are listed in any of the following, (SA3.1.4bMSC v3.0, 2023)

    i. Appendix 1 of the Convention on International Trade in Endangered Species (CITES).

    ii. Appendix 2 of CITES.

    iii. Appendix 1 of the Convention on the Conservation of Migratory Species of Wild Animals (CMS).

    iv. Appendix 2 of CMS.

    v. The International Union for Conservation of Nature (IUCN) Red List of Threatened Species and classified globally as “Critically Endangered (Cr)”.

    vi. The IUCN Red List of Threatened Species and classified globally as “Endangered (En)”.

    vii. National ETP legislation.

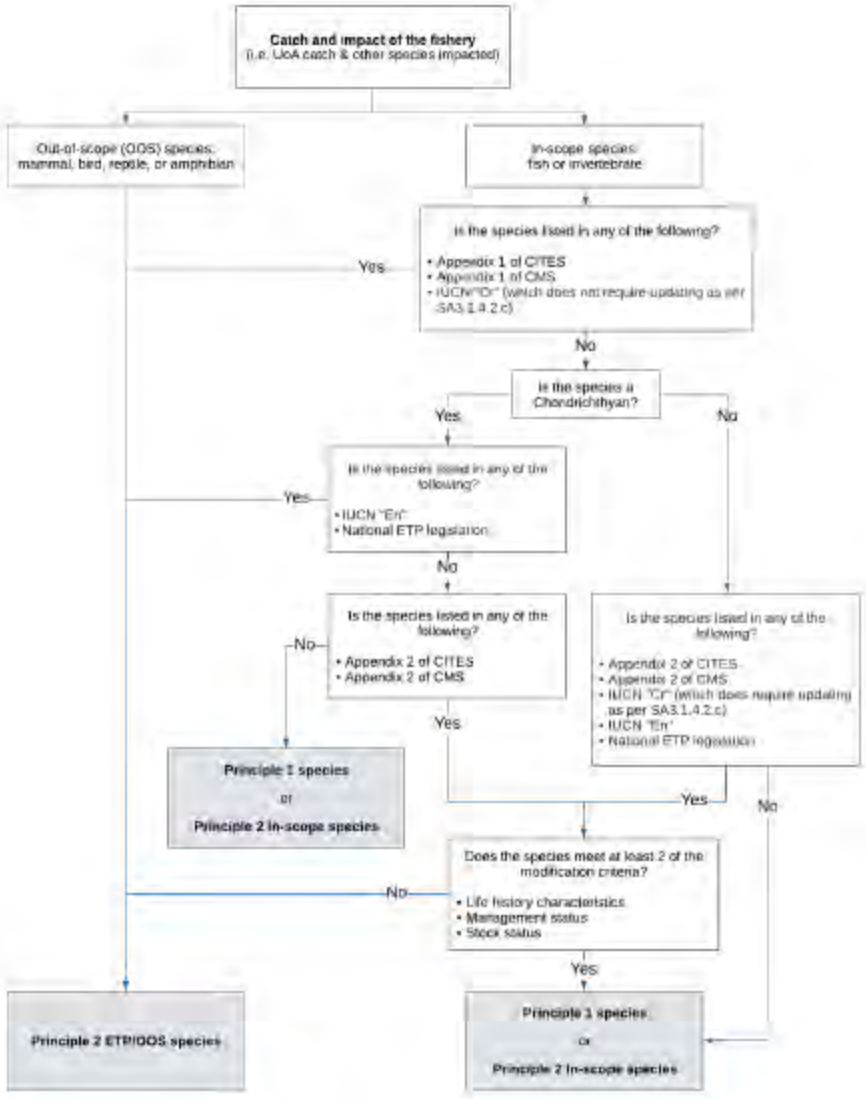


Figure 14. Decision tree for non-target species categorization: in-scope species, and endangered, threatened, or protected and out-of-scope (ETP/OOS) species. Source: (MSC, 2022)

Furthermore, in-scope-species are considered as either main or minor species according to the following criteria:

- Main species: These are considered main species if their capture by the Unit of Assessment (UoA) represents 5% or more of the total catch of all species.

- Minor species: These are considered minor species if their capture by the UoA represents 2% or more of the total catch of all species.

Analysis of the coastal fauna which are incidentally captured (FAC) vary from diverse studies. Some of the by-catch species has commercial use and the rest of them are discarded, there are no adequate records of them. FAC has been reported as 337 species in the Gulf of Mexico 192 genera and 89 families. However, most of them are reported in the Campeche Bank, as of the central-south region of Veracruz had reported 93 species and Tamaulipas 97 species. (Chavez-López et al. 2019). There is no specific study for the UoC.

In scope species

In the Tamaulipas region the FAC was reported as six species of echinoderms, nine of molluscs, 10 families of crustaceans represented by 20 species and 41 fish families represented by 97 species. (Wakida-Kusunoki, et al. 2013).

Table VI. Bycatch species of brown fishery (Wakida-Kusunoki, et al., 2013). Status completed in this work.

Scientific name	Commercial interest	Percentage of total weight	IUCN Red list Status	CITES (APENDIX 2)	CMS (APENDIX 2)
Stenotomus caprinus		17%	Least Concern	Not evaluated	Not evaluated
Syacium gunteri		14%	Least Concern	Not evaluated	Not evaluated
Synodus foetens		9%	Least Concern	Not evaluated	Not evaluated
Upeneus parvus		8%	Least Concern	Not evaluated	Not evaluated
Serranus atrobranchus		6%	Least Concern	Not evaluated	Not evaluated
Micropogonias undulatus	*	5%	Least Concern	Not evaluated	Not evaluated
Lagodon rhomboides	*	3%	Least Concern	Not evaluated	Not evaluated
Trachurus lathami		2%	Least Concern	Not evaluated	Not evaluated
Pristipomoides aquilonaris	*	2%	Least Concern	Not evaluated	Not evaluated
Leiostomus xanthurus	*	2%	Least Concern	Not evaluated	Not evaluated
Prionotus longispinosus		2%	Least Concern	Not evaluated	Not evaluated
Harengula jaguana		1%	Least Concern	Not evaluated	Not evaluated
Sardinella aurita		1%	Least Concern	Not evaluated	Not evaluated
Eucinostomus argenteus		1%	Least Concern	Not evaluated	Not evaluated
Eucinostomus melanopterus		1%	Least Concern	Not evaluated	Not evaluated
Gymnura micrura	*	1%	Near Threatened	Not evaluated	Not evaluated
Conodon nobilis	*	1%	Least Concern	Not evaluated	Not evaluated
Lutjanus campechanus	*	1%	Vulnerable	Not evaluated	Not evaluated
Cyclopsetta chitendenni		1%			
Paralichthys squamilentus		1%	Least Concern	Not evaluated	Not evaluated
Diplectrum bivittatum		1%	Least Concern	Not evaluated	Not evaluated
Peprilus burti		1%	Least Concern	Not evaluated	Not evaluated
Spheroides parvus		1%	Least Concern	Not evaluated	Not evaluated
Loligo pealei	*	1%			
Squilla empusa		1%			
Gymnachirus texae		< 1%	Least Concern	Not evaluated	Not evaluated
Antennarius radiosus		< 1%	Least Concern	Not evaluated	Not evaluated
Antennarius striatus		< 1%	Least Concern	Not evaluated	Not evaluated
Ariopsis felis	*	< 1%	Least Concern	Not evaluated	Not evaluated
Porichthys plectrodon		< 1%	Least Concern	Not evaluated	Not evaluated
Bothus robinsi		< 1%	Least Concern	Not evaluated	Not evaluated
Engyophrys senta		< 1%	Least Concern	Not evaluated	Not evaluated
Balistes capriscus	*	< 1%	Vulnerable	Not evaluated	Not evaluated
Decapterus punctatus		< 1%	Least Concern	Not evaluated	Not evaluated
Selar crumenophthalmus		< 1%	Least Concern	Not evaluated	Not evaluated
Vomer setapinnis	*	< 1%	Least Concern	Not evaluated	Not evaluated
Anchoa hepsetus		< 1%	Least Concern	Not evaluated	Not evaluated
Opisthonema oglinum		< 1%	Least Concern	Not evaluated	Not evaluated

Rhynchoconger ava		< 1%			
Uroconger syringinus		< 1%	Least Concern	Not evaluated	Not evaluated
Symphurus plagiusa		< 1%	Least Concern	Not evaluated	Not evaluated
Symphurus civitatus		< 1%	Least Concern	Not evaluated	Not evaluated
Symphurus diamedianus		< 1%			
Symphurus pelicans		< 1%			
Dasyatis americana	*	< 1%	Near Threatened	Not evaluated	Not evaluated
Urophycis floridana		< 1%	Least Concern	Not evaluated	Not evaluated
Diapterus auratus	*	< 1%	Least Concern	Not evaluated	Not evaluated
Eucinostomus gula	*	< 1%	Least Concern	Not evaluated	Not evaluated
Haemulon aurolineatum	*	< 1%	Least Concern	Not evaluated	Not evaluated
Lutjanus synagris	*	< 1%	Near Threatened	Not evaluated	Not evaluated
Narcine brasiliensis.		< 1%	Near Threatened	Not evaluated	Not evaluated
Caulolatilus intermedius		< 1%	Least Concern	Not evaluated	Not evaluated
Aluterus heudelotii		< 1%	Least Concern	Not evaluated	Not evaluated
Stephanolepis hispida		< 1%	Least Concern	Not evaluated	Not evaluated
Mullus auratus		< 1%	Least Concern	Not evaluated	Not evaluated
Gymnothorax nigromarginatus		< 1%	Least Concern	Not evaluated	Not evaluated
Hoplunnis macrura		< 1%	Least Concern	Not evaluated	Not evaluated
Halieutichthys aculeatus		< 1%	Least Concern	Not evaluated	Not evaluated
Ogcocephalus pantostictus		< 1%	Least Concern	Not evaluated	Not evaluated
Brotula barbata	*	< 1%	Least Concern	Not evaluated	Not evaluated
Lepophidium brevibarbe		< 1%	Least Concern	Not evaluated	Not evaluated
Opistognathus aurifrons		< 1%	Least Concern	Not evaluated	Not evaluated
Acanthostracion quadricornis		< 1%	Least Concern	Not evaluated	Not evaluated
Ancylopsetta ommata		< 1%	Least Concern	Not evaluated	Not evaluated
Cyclopsetta mbriata		< 1%			
Etropus crossotus		< 1%	Least Concern	Not evaluated	Not evaluated
Urophycis cirrata		< 1%	Least Concern	Not evaluated	Not evaluated
Priacanthus arenatus		< 1%	Least Concern	Not evaluated	Not evaluated
Raja texana		< 1%	Data Deficient	Not evaluated	Not evaluated
Cynoscion arenarius	*	< 1%	Least Concern	Not evaluated	Not evaluated
Cynoscion nothus	*	< 1%	Least Concern	Not evaluated	Not evaluated
Larimus fasciatus		< 1%	Least Concern	Not evaluated	Not evaluated
Menticirrhus americanus	*	< 1%	Least Concern	Not evaluated	Not evaluated
Menticirrhus littoralis	*	< 1%	Least Concern	Not evaluated	Not evaluated
Menticirrhus saxitilis	*	< 1%	Least Concern	Not evaluated	Not evaluated
Umbrina coroides	*	< 1%	Least Concern	Not evaluated	Not evaluated
Scomber japonicus		< 1%	Least Concern	Not evaluated	Not evaluated
Scorpaena brasiliensis		< 1%	Least Concern	Not evaluated	Not evaluated
Scorpoena plumieri		< 1%	Least Concern	Not evaluated	Not evaluated
Centropristis philadelphica		< 1%	Least Concern	Not evaluated	Not evaluated
Serraniculus pumilio		< 1%	Least Concern	Not evaluated	Not evaluated
Calamus leucosteus	*	< 1%	Least Concern	Not evaluated	Not evaluated
Sphyraena barracuda	*	< 1%	Least Concern	Not evaluated	Not evaluated
Saurida brasilensis		< 1%	Least Concern	Not evaluated	Not evaluated
Saurida caribbaea		< 1%	Least Concern	Not evaluated	Not evaluated
Synodus poeyi		< 1%	Least Concern	Not evaluated	Not evaluated
Trachinocephalus myops		< 1%	Least Concern	Not evaluated	Not evaluated
Lagocephalus laevigatus	*	< 1%	Least Concern	Not evaluated	Not evaluated
Spheroides dorsalis		< 1%	Least Concern	Not evaluated	Not evaluated
Trichiurus lepturus	*	< 1%	Least Concern	Not evaluated	Not evaluated
Bellator militaris		< 1%	Least Concern	Not evaluated	Not evaluated

Prionotus carolinus		< 1%	Least Concern	Not evaluated	Not evaluated
Prionotus ophryas		< 1%	Least Concern	Not evaluated	Not evaluated
Prionotus roseus		< 1%	Least Concern	Not evaluated	Not evaluated
Prionotus rubio		< 1%	Least Concern	Not evaluated	Not evaluated
Prionotus stearnsi		< 1%	Least Concern	Not evaluated	Not evaluated
Prionotus tribulus		< 1%	Least Concern	Not evaluated	Not evaluated
Sphyraena guachancho	*	< 1%	Least Concern	Not evaluated	Not evaluated
Loligo plei	*	< 1%			
Lolliguncula brevis		< 1%			
Octopus vulgaris	*	< 1%			
Amusium papyraceum		< 1%			
Pecten sp.		< 1%			
Strombus alatus		< 1%			
Tonna galea		< 1%			
Pitar cordatus		< 1%			
Calappa ammea		< 1%			
Calappa sulcata		< 1%			
Hepatus epheliticus		< 1%			
Podochela sidneyi		< 1%			
Pyromaia cuspidata		< 1%			
Persephona crinita		< 1%			
Pagurus sp		< 1%			
Parapeneus politus		< 1%			
Penaeopsis serrata		< 1%			
Platylambrus granulata		< 1%			
Libinia emarginata		< 1%			
Callinectes similis		< 1%			
Portunus spinicarpus		< 1%			
Portunus spinimanus		< 1%			
Sicyonia brevirostris	*	< 1%			
Sicyonia dorsalis		< 1%			
Sicyonia tipica		< 1%			
Astropecten articulatus		< 1%			
Astropecten duplicatus		< 1%			
Luidia alternata		< 1%			
Luidia cathrata		< 1%			
Ophiolepis elegans		< 1%			
Ogcocephalus declivirostris		< 1%	Least Concern	Not evaluated	Not evaluated

The National Fishing Chart considers 13 species as part of the FAC (Table 7), 4 of them being other species of shrimp. Table VII.

Table VII. By catch reported by INAPESCA in National Fishing Chart (DOF, 26/07/2022)

Scientific name	Common name
Litopenaeus setiferus	Camarón blanco
Farfantepenaeus duorarum	Camarón rosado
Sicyonia brevirostris	Camarón de roca
Xiphopenaeus kroyeri	Camarón siete barbas
Synodus foetens	Chile
Synodus intermedius	Chile
Lutjanus campechanus	Huachinango
Cyclopseta chittendeni	Lenguado
Prionodotus punctatus	Paloma
Loligo pealeii	Calamar
Portunus gibbesii	Jaiba café
Calappa sulcata	Cangrejo
Squatina mexicana	Tiburón angelito

The information from FAC´s varies from study to study, however results from INAPESCA, currently IMIPAS, can be considered representative of the catches of the whole fleet. All species reported in the studies are considered in-scope species. It is necessary to carry out specific studies at the UoC. A preliminary analysis based on available information as follows.

The species that overpass the 5% threshold for being defined as "main" are *Syacium gunteri, Synodus foetens, Upeneus parvus, Serranus atrobranchus* and *Micropogonias undulatus*.

Table VIII – Scoring elements		
Component	Designation	Data-deficient
Syacium gunteri	*Main*	*x*
Synodus foetens	*Main*	*x*
Upeneus parvus	*Main*	*x*
Serranus atrobranchus	*Main*	*x*
Micropogonias undulatus	*Main*	*x*
Lagodon rhomboides	*Main*	*x*
Trachurus lathami	*Minor*	*x*
Pristipomoides aquilonaris	*Minor*	*x*
Leiostomus xanthurus	*Minor*	*x*
Prionotus longispinosus	*Minor*	*x*
Harengula jaguana	*Minor*	*x*
Sardinella aurita	*Minor*	*x*
Eucinostomus argenteus	*Minor*	*x*
Eucinostomus melanopterus	*Minor*	*x*
Gymnura micrura	*Minor*	*x*
Conodon nobilis	*Minor*	*x*
Lutjanus campechanus	*Minor*	*x*
Cyclopsetta chitendenni	*Minor*	*x*
Paralichthys squamilentus	*Minor*	*x*
Diplectrum bivittatum	*Minor*	*x*
Peprilus burti	*Minor*	*x*
Spheroides parvus	*Minor*	*x*
Loligo pealei	*Minor*	*x*

Squilla empusa	*Minor*	*x*

ETP/OOS Species

According to Version 3.0 of the standard, all chondrichthyan species that are listed by the IUCN under the category "Endangered" (EN) or worse, and/or protected by national legislation, should be classified as Endangered, Threatened, or Protected (ETP).

The CNP (2022) include only one species of Chondrichthyes, *Squatina mexicana* however it is not evaluated neither by IUCN, CITES NOR CMS, nor a National ETP legislation, thus it is considered as in scope specie. *Dasyatis americana* was present in other studies (Wakida-Kusunoki, et al. 2013) representing less than 1% of the weigh catch, considered Near Threatened by the IUCN red list status (https://www.fishbase.se/summary/Hypanus-americanus.html) thus, after ETP definition it is considered as in scope species.

Sea turtles can occasionally be caught by the bottom trawl, but after the implementation of the NOM-061-PESC-2006 in relation to sea turtle excluders, most sea turtles leave the nets without harm. There is no other official information about the incidence in the nets.

There are 94 species of Chondrichthyes that inhabit the Exclusive Economic Zone (EEZ) of Mexico (Eherman, et al.,2018), this has to be considered after a monitoring program to determine the species affected by the UoC vessels.

There are no reports of interaction of the fishery with seabirds, marine mammals and reptiles. After site visit, vessel captains' comment that once sea turtle excluders were placed in the trawl nets, sea turtles are released and do not appear in the catch.

3.4.2. Principle 2 Performance Indicator scores and rationales

PI 2.1.1 – In-scope species outcome

PI 2.1.1		The UoA aims to maintain in-scope species above the PRI and does not hinder recovery of in-scope species if they are below the PRI		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Main in-scope species stock status**			
	Guide post	**Main** in-scope species are **likely** to be above the PRI. or If the species is below the PRI, it is **likely** that the UoA does not hinder recovery and rebuilding.	**Main** in-scope species are **highly likely** to be above the PRI. or If the species is below the PRI, there is evidence of recovery, or it is **highly likely** that the UoA does not hinder recovery and rebuilding.	There is a **high degree of certainty** that **main** in-scope species **are** fluctuating around a level consistent with MSY.
	Met?	**No**	**No**	**No**
Rationale		More information is needed to properly identify in-scope species and to classify them into main or minor. Once identified the RBF need to be used to score this PI. Therefore, SG60 cannot be met.		
b	**Minor in-scope species stock status**			
	Guide post			**Minor** in-scope 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** in-scope species.
	Met?			**No**
Rationale		More information is needed to properly identify in-scope species and to classify them into main or minor. Therefore, SG60 cannot be met. There is no information to be certain if minor in-scope species are likely to be above the PRI or not. More information is needed, likely utilizing the RBF (Risk-Based Framework).		

Draft scoring range	**<60**
Information gap indicator	**More information sought** *There is no information available specific to the UoC fishing fleet. There is some published information, which is not recent. There are annual samplings carried out by INAPESCA (currently IMIPAS), but the reports are not available. The recent and available information includes only the CNP publication which includes general information insufficient to analyse it. This information is not detailed by fleet or by zone within the GOM. It is necessary to implement a Permanent Monitoring Program for the UoC fleet. .*
Data-deficient? (Risk-Based Framework needed)	**Yes**

PI 2.1.2 – In-scope species management strategy

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of in-scope species		
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** in-scope species at/to the in-scope species outcome SG60 level.	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 in-scope species at/to the in-scope species outcome SG80 level. or Where in-scope species outcome fails to meet the SG80, a demonstrably effective strategy is in place between all MSC UoAs that categorise this species as **main** in-scope to ensure that they collectively do not hinder recovery and rebuilding.	There is a **strategy** in place for the UoA for managing **main** and **minor** in-scope species at the in-scope species outcome SG80 level.
	Met?	**No**	**No**	**No**
Rationale		At this point is not possible to understand if measures are necessary but so far there are not measures in place to reduce the bycatch of in-scope species. SG60 is not met		
b	**Management strategy effectiveness**			
	Guide post	The measures, **if necessary**, are considered **likely** to work for the **main** in-scope species, based on plausible argument.	There is some **evidence** that the measures/partial strategy, **if necessary**, is achieving the objectives for **main** in-scope species set out in scoring issue (a), based on some information directly about the UoA and/or species involved.	**There is evidence** that the partial strategy/strategy is achieving the objectives set out in scoring issue (a), based on information directly about the UoA and/or species involved.
	Met?	**No**	**No**	**No**
Rationale		Idem a)		
c	**Review of alternative measures**			
	Guide post	There is a **review** of **alternative measures** to minimise UoA-related mortality of **unwanted catch** of **main** in-scope species	There is a **review** at least once every 5 years of **alternative measures** to minimise UoA-related mortality of **unwanted catch** of **main** in-scope species and they are **implemented, as appropriate**.	There is a **review** that happens every 2 years of **alternative measures** to minimise UoA-related mortality of **unwanted catch** of all in-scope species, and they are **implemented, as appropriate**.
	Met?	**No**	**No**	**No**
Rationale		There is no evidence that there is a review of alternative measures to minimise UoA-related mortality of unwanted catch of in scope species. Thus, this PI would not achieve SG60.		
d	**Shark finning**			
	Guide post	There is a **high degree of certainty** that shark finning is not taking place.		
	Met?	**No**		

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of in-scope species		
Rationale		As we cannot know if there are sharks between the in-scope species, we need to score this scoring aspect. There is not documented evidence that shark finning is not taking place. SG60 is not met.		
e	**Ghost gear management strategy**			
	Guide post	There are measures in place for the UoA, **if necessary**, that are expected to minimise ghost gear and its impact on all in-scope species.	There is a partial strategy in place for the UoA, **if necessary**, that is expected to minimise ghost gear and its impact on all in-scope species.	There is a strategy in place for the UoA, **if necessary**, that is expected to minimise ghost gear and its impact on all in-scope species.
	Met?	**No**	**No**	**No**
Rationale		At the moment of doing this pre-assessment there is not available information about gear loss. SG60 is not met.		

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

PI 2.1.3 – In-scope species information

PI 2.1.3		Information is adequate to determine the impact of the UoA on in-scope species and the effectiveness of management measures or strategies in place		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Information adequacy for assessment of impact on main in-scope species**			
	Guide post	Information is adequate to **broadly understand** the impact of the UoA on the stock status of **main** in-scope species.	Information is adequate to **estimate** the impact of the UoA on the stock status of **main** in-scope species with a **high degree of accuracy**.	Information is adequate to **estimate** the impact of the UoA on the stock status of **main** in-scope species with a **very high degree of accuracy**.
	Met?	**No**	**No**	**No**
Rationale		There is some general information available on the bycatch of the shrimp fishery in the Gulf of Mexico (Slavin 1982; Grande Vidal and Díaz-López 1981; Wakida-Kusunoki 2005, 2013). Nevertheless, the information available does not allow us to broadly understand the impact of the UoA on the stock status of main in-scope species. Thus, this scoring issue would not achieve SG60.		
b	**Information adequacy for assessment of impact on minor in-scope species**			
	Guide post			Information is adequate to **estimate** the impact of the UoA on the stock status of **minor** in-scope species with a **high degree of accuracy**.
	Met?			**No**
Rationale		There is no information to estimate the impact of the UoA on the stock status of minor in-scope species with a high degree of accuracy. Thus, this scoring issue would not achieve SG100.		
c	**Information adequacy for management strategy**			
	Guide post	Information is adequate to support **measures** to manage **main** in-scope species.	Information is adequate to support a **partial strategy** to manage **main** in-scope species.	**Information is adequate to support a strategy** to manage **all** in-scope species and evaluate with a **high degree of certainty** whether the strategy is achieving its objective.
	Met?	**No**	**No**	**No**
Rationale		Considering the rationale of PI 2.1.5 a,b more information is sought in order to support measures to manage main in-scope species. Thus, this scoring issue would not achieve SG60.		

Draft scoring range	**<60**
Information gap indicator	**More information sought** The implementation of biological sampling is required to generate more information for a better evaluation of this PI.

PI 2.2.1 – ETP/OOS species outcome

PI 2.2.1		The direct effects of the UoA do not hinder recovery of the ETP/OOS unit to favourable conservation status		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Direct effects**			
	Guide post	The direct effects of the UoA are **unlikely** to hinder recovery of the ETP/OOS unit to favourable conservation status.	The direct effects of the UoA are **highly unlikely** to hinder recovery of the ETP/OOS unit to favourable conservation status.	There is a **high degree of certainty** that the direct effects of the UoA do not hinder recovery of the ETP/OOS unit to favourable conservation status.
	Met?	**No**	**No**	**No**
Rationale		There is scarce information about the direct effects of the UoA on ETP/OOS species, thus, this PI would not achieve SG 60.		

Draft scoring range	**<60**
Information gap indicator	**More information sought** The implementation of biological sampling is required to generate more updated information for a better evaluation of this PI.
Data-deficient? (Risk-Based Framework needed)	**Yes**

PI 2.2.2 – ETP/OOS species management strategy

PI 2.2.2		The UoA has precautionary management strategies in place designed to: • Ensure that incidental catches of the ETP/OOS unit are minimised and where possible eliminated • Ensure that the UoA does not hinder recovery to Favourable Conservation Status.		
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 **minimise** the UoA-related mortality of the ETP/OOS unit and achieve the ETP/OOS outcome SG80 level of performance.	There is a **strategy** in place, **if necessary**, that is expected to minimise the UoA-related mortality of the ETP/OOS unit and achieve the ETP/OOS outcome SG80 level of performance.	There is a **comprehensive strategy** in place that is expected to **minimise** the UoA-related mortality of the ETP/OOS unit and achieve the ETP outcome SG80 level of performance.
	Met?	**No**	**No**	**No**
Rationale		The obligation to have sea turtle excluders on shrimp vessels and the verification carried out by the authorities to verify compliance, is a measure in place, that is expected to minimise the UoA-related mortality of those species, but more information is sought to determine if there are other species that need mitigation measures/strategies. Thus, this PI would achieve not SG 60.		
b	**Management strategy effectiveness**			
	Guide post		Evidence indicates that the **measures, strategy or comprehensive strategy** have reduced or **minimised** the mortality of the ETP/OOS unit.	
	Met?		**No**	
Rationale		Regarding turtles, there is no evidence about the impact of using TEDs. Since there is no information in regard to other ETP/OOS, this scoring issue would not achieve SG 80.		
c	**Review of alternative measures to minimise mortality of the ETP/OOS unit**			
	Guide post		There is a **review** at least once every 5 years of the **alternative measures** to **minimise** UoA-related mortality of the ETP/OOS unit and they are implemented as appropriate for the ETP/OOS unit.	There is a **review** that happens every 2 years of **alternative measures** to **minimise** UoA-related mortality of the ETP/OOS unit, and they are implemented, as appropriate for the ETP/OOS unit.
	Met?		**No**	**No**
Rationale		There is not review regarding turtles, and there are no other measures regarding to minimize impacts on marine mammals and seabirds. This PI would not achieve SG 80.		
d	**Shark finning**			
	Guide post	There is a **high degree of certainty** that shark finning is not taking place.		
	Met?	**No**		
Rationale		More information is necessary to define if protected sharks are part of the bycatch and, in that case, to document the situation regarding finning. SG60 is not met.		
e	**Ghost gear management strategy**			
	Guide post	There are **measures** in place, **if necessary**, for the UoA that are expected to **minimise**	There is a **partial strategy** in place for the UoA, **if necessary**, that is expected to	There is a **strategy** in place for the UoA, **if necessary**, that is expected to **minimise** ghost

PI 2.2.2		The UoA has precautionary management strategies in place designed to: • **Ensure that incidental catches of the ETP/OOS unit are minimised and where possible eliminated** • **Ensure that the UoA does not hinder recovery to Favourable Conservation Status.**		
		ghost gear and its impact on the ETP/OOS unit.	**minimise** ghost gear and its impact on the ETP/OOS unit.	gear and its impact on the ETP/OOS unit.
	Met?	**No**	**No**	**No**
Rationale		The skippers inform that gear losses are extremely rare because of the soft bottoms where they operate and because the high cost of the fishing gear which encourage them to recover it in a further trip in case that happens. It was informed by them that considering 10 vessels operation in around 15 years only one gear was lost. So, in summary, particular measures doesn´t seem necessary. Nevertheless, more information is needed to analyse information in regard of ETP/OOS. Thus, by now this PI would not achieve SG 60.		

Draft scoring range	**<60**
Information gap indicator	**More information sought** The implementation of biological sampling is required to generate more updated information for a better evaluation of this PI.

PI 2.2.3 – ETP/OOS species information

PI 2.2.3		Information is adequate to determine the impact of the UoA on the ETP/OOS unit and the effectiveness of management measures or strategies in place		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Information adequacy for assessment of impacts**			
	Guide post	Information is adequate to **broadly understand** the impact of the UoA on the ETP/OOS unit.	Information is adequate to **estimate** the impact of the UoA on the ETP/OOS unit, and to **estimate** whether the UoA may be a threat to its recovery, with a **high degree of accuracy**.	Information is adequate to **estimate** the impact of the UoA on the ETP/OOS unit, and to **estimate** whether the UoA may be a threat to its recovery, with a very **high degree of accuracy**.
	Met?	**No**	**No**	**No**
Rationale		There is not information available to understand this impact. Thus, this scoring issue would not achieve SG 60		
b	**Information adequacy for management strategy**			
	Guide post	Information is adequate to support **measures** to manage impacts on the ETP/OOS unit.	**Information is adequate** to support a strategy to manage impacts on the ETP/OOS unit, and to measure trends to evaluate the effectiveness of the **measures** to minimise mortality.	Information is adequate to support a **comprehensive strategy** to manage impacts on the ETP/OOS unit, and to evaluate the effectiveness of the **measures** to minimise mortality with a **high degree of certainty**.
	Met?	**No**	**No**	**No**
Rationale		Idem a)		

Draft scoring range	**<60**
Information gap indicator	**Information sufficient to score PI** More information is needed in regard of ETP and OOS.

PI 2.3.1 – Habitats outcome

PI 2.3.1		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(ies) responsible for fisheries management in the area(s) where the UoA operates		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Less sensitive habitats**			
	Guide post	The UoA is **unlikely** to reduce structure and function of **less** sensitive habitats to a point where there would be **serious or irreversible harm**.	The UoA is **highly unlikely** to reduce structure and function of **less** sensitive 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 **less** sensitive habitats to a point where there would be **serious or irreversible harm**.
	Met?	**No**	**No**	**No**
Rationale		Although the bottom is soft and probably SG60 is met, the information available so far makes impossible to score this aspect. SG60 is not met.		
b	**More sensitive habitats**			
	Guide post	The UoA is **unlikely** to reduce structure and function of **more** sensitive habitats to a point where there would be **serious or irreversible harm**.	The UoA is **highly unlikely** to reduce structure and function of **more** sensitive 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 **more** sensitive habitats to a point where there would be **serious or irreversible harm**.
	Met?	**Yes**	**No**	**No**
Rationale		The fishery operates over soft bottoms, avoiding every type of hard, sensitive structure in the seabed. The only reef closest to the fishing area, the Veracruz Reef System, is a protected zone where fishing is prohibited. SG60 is met and once we have available an overlap mapping of the fishing zone and the reefs zone, SG80 will be met too.		

Draft scoring range	**<60**
Information gap indicator	**More information sought** It is recommended that the monitoring program would include bottom type.
Data-deficient? (Risk-Based Framework needed)	**Yes**

PI 2.3.2 – Habitats management strategy

PI 2.3.2		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 SG80 level.	There is a **partial strategy** in place, **if necessary**, that is expected to achieve the habitat outcome SG80 level or above.	There is a **strategy** in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.
	Met?	**No**	**No**	**No**
Rationale		It is necessary to understand first the impacts, or the risks associated with the impacts before understanding if measures are necessary. So far there is not any known measure to address such impact to habitats impacted by the UoA. SG60 is not met.		
b	**Management strategy effectiveness**			
	Guide post	The **measures**, **if necessary**, are considered **likely** to work, based on **plausible argument**.	There is some **evidence** that the measures/partial strategy, **if necessary**, is achieving the objectives set out in SI (a), based on **information directly about the UoA and/or habitats** involved.	There is evidence that the **partial strategy/strategy** is achieving the objectives set out in SI (a), based on **information directly about the UoA and/or habitats** involved.
	Met?	**No**	**No**	**No**
Rationale		So far, it is not known if measures are necessary and there is not any known measure addressing this impact. SG60 is not met.		
c	**Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect more sensitive habitats**			
	Guide post	Information is adequate to **broadly understand** compliance in the UoA with management requirements to protect **more** sensitive habitats.	Information is adequate to **determine**, with a **high degree of accuracy**, compliance in the UoA with both its management requirements and protection measures afforded to **more** sensitive habitats by other MSC UoAs/non-MSC fisheries, **where relevant**.	Information is adequate to **determine**, with a **very high degree of accuracy**, compliance in the UoA with both its management requirements and with protection measures afforded to more sensitive habitats by other MSC UoAs/ non-MSC fisheries, **where relevant**.
	Met?	**Yes**	**No**	**No**
Rationale		With the mandatory use of VMS on larger vessels (NOM-062-SAG/PESC-2014), it can be demonstrated that the UoA vessels do not carry out fishing activities in sensitive areas, thus, information is adequate to broadly understand compliance in the UoA with management requirements to protect more sensitive habitats. Since the VMS had an important interruption in 2023 and there is no public information, this avoids this PI to achieve SG80.		
d	**Ghost gear management strategy**			
	Guide post	There are **measures** in place, **if necessary**, for the UoA that are expected to **minimise** ghost gear and its impact on all habitats.	There is a **partial strategy** in place for the UoA**, if necessary**, that is expected to **minimise** ghost gear and its impact on all habitats.	There is a **strategy** in place for the UoA, **if necessary**, that is expected to **minimise** ghost gear and its impact on all habitats.
	Met?	**Yes**	**No**	**No**
Rationale		The cost of losing a net is very high, so during their fishing operations captain´s take precautionary measures to ensure they do not lose them. For example, they do not operate the trawl nets in bad weather, avoid rocky substrates, raise the nets before they become too heavy. However, there is no evidence of this except for the number of trawl nets lost in 15 years, which is why it is considered that there is no need for measures that are expected to minimise ghost gear and its		

PI 2.3.2	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
	impact on all habitats. SG 60 is met and probably also is SG80 once some documented evidence is available.

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

PI 2.3.3 – Habitats information

PI 2.3.3		Information is adequate to determine the impact of the UoA on habitats, including changes in the risk posed by the UoA over time		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Information quality**			
	Guide post	The types and distribution of habitats are **broadly understood**.	The nature, distribution, and **vulnerability** of habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA.	The distribution of habitats is known over their range, with particular attention given to the occurrence of **vulnerable** habitats.
	Met?	**Yes**	**Yes**	**No**
Rationale		There is a large amount of information generated in the last decade, especially as a result of the Deep Horizon accident. The Gulf of Mexico Research Consortium (https://cigom.org/) was founded in 2015 as a scientific research and consulting services consortium specialized in multidisciplinary projects related to possible environmental impacts of the oil and gas industry on the marine ecosystems of the Gulf of Mexico. This initiative arose due to the lack of information to understand and act in the event of possible large-scale hydrocarbon spills in the Gulf of Mexico. The information generated by CIGOM serves as a baseline of knowledge for both habitats and ecosystem. Thus, the nature, distribution, and **vulnerability** of habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA achieving SG80.		
b	**Information adequacy for assessment of impacts**			
	Guide post	Information is adequate to **broadly understand** the impacts of gear use on habitats.	Information is adequate to **estimate** the impacts of the UoA on habitats with a **high degree of accuracy**.	Information is adequate to **estimate** the impacts of the UoA on habitats with a **very high degree of accuracy**.
	Met?	**Yes**	**No**	**No**
Rationale		There is some information as Moran-Silva, 2018, Wakida 2009, 2013 among others to broadly understand the impacts of gear use on habitats. But more information needs to be gathered, thus, this PI achieves SG60 and not SG80.		
c	**Monitoring**			
	Guide post		Adequate information continues to be collected to detect any increase in risk to habitats.	Changes in habitat distributions over time are measured.
	Met?		**No**	**No**
Rationale		There is no Onboard Observer Program in place to collect data specifically related to habitats. Thus, this scoring issue would not achieve SG 80.		

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

PI 2.4.1 – Ecosystem outcome

PI 2.4.1		The UoA does not cause serious or irreversible harm to the key elements underlying 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 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 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 serious or irreversible harm.
	Met?	**No**	**No**	**No**
Rationale		The lack of information about the impacts on key components of the ecosystem makes impossible to score this PI, therefore SG60 is not met by now.		

Draft scoring range	**<60**
Information gap indicator	**More information sought** There is a lack of or limited information regarding impacts on important ecosystem components such as benthic fauna, discarded species, OOS species, and habitats.
Data-deficient? (Risk-Based Framework needed)	**Yes**

PI 2.4.2 – Ecosystem management strategy

PI 2.4.2		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 considers the potential impacts of the UoA on the **key** elements underlying ecosystem structure and function.	There is a **partial strategy** in place, **if necessary**, that is expected to achieve the Ecosystem outcome SG80 level.	There is a **strategy** in place for managing the impact of the UoA on the **key** elements underlying ecosystem structure and function.
	Met?	**No**	**No**	**No**
Rationale		There are some measures for some of the components but some impacts are not known and measures have not been taken, for example regarding seabirds or habitats. SG60 is not met.		
b	**Management strategy effectiveness**			
	Guide post	The **measures, if necessary**, are considered **likely** to work, based on plausible argument.	There is **some evidence** that the **measures/partial strategy, if necessary**, is achieving the objectives set out in scoring issue (a), based on some information directly about the UoA and/or the ecosystem involved.	There is **evidence** that the **partial strategy/strategy** is achieving the objectives set out in scoring issue (a) based on information directly about the UoA and/or ecosystem involved.
	Met?	**No**	**No**	**No**
Rationale		The measures adopted fot marine turtles are likely to work but impacts on other key components of the ecosystem have not been adopted, it is not known if they are necessary and is not possible to define if such measures would likely work. SG60 is not met.		

Draft scoring range	**<60**
Information gap indicator	**More information sought** *See PI 2.4.1*

PI 2.4.3 – Ecosystem information

PI 2.4.3		There is adequate knowledge of the ecosystem and the main impacts of the UoA on key ecosystem elements		
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		The available information is sufficient to **identify** the key elements of the ecosystem but not to broadly understand them. Therefore, this scoring issue meets **SG60** but not SG80.		
b	**Investigation of UoA impacts**			
	Guide post	Main impacts of the UoA on the **key** ecosystem elements **can be inferred** from existing information	Main impacts of the UoA on the **key** elements of the ecosystem **have been investigated in detail**.	Main interactions between the UoA and the **key** ecosystem elements **have been investigated in detail**.
	Met?	**No**	**No**	**No**
Rationale		For some key ecosystem elements is not possible to infer the UoA impacts. Therefore, this scoring issue does not meet **SG60**.		
c	**Understanding of component functions**			
	Guide post		The main functions of the components in the ecosystem are **known**.	The impacts of the UoA on the components are identified and the main functions of these components in the ecosystem are **understood**.
	Met?		**No**	**No**
Rationale		The main functions of the components (target species P1, in-scope species, and ETP) in the ecosystem are known, but there is no information in regard several OOS, thus it does not achieves SG80.		
d	**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		There are key elements of the ecosystem that are not monitored to understand the increase in risk level, therefore this scoring issue does not meet the requirements of SG80.		

Draft scoring range	**<60**
Information gap indicator	**More information sought** ***See PI 2.4.***

3.5. Principle 3

The area of operation of the UoA is mostly in front of Veracruz and Tamaulipas states, in the Mexican waters of the Gulf of Mexico. The fishery in lagoon and estuarine systems occurs mainly in Laguna Madre, Pueblo Viejo, Tamiahua-Tampamachoco, Alvarado and Coatzacoalcos. (CNP, 2022)

The jurisdictional category of the fishery management systems falls under a single jurisdiction, managed at a federal level. There is no indigenous component, it is not a straddling stock or highly migratory species. Brown shrimp fisheries of the GOM are managed independently along the Mexican Exclusive Economic Zones (EEZs) although there is bilateral collaboration between Mexico and the USA.

Shrimp vessels are divided into two types of fleets: 1) artisanal fleet that operates in small boats in coastal lagoons with charangas as gear, and 2) a large vessel fleet predominantly active in offshore waters, using twin shrimp bottom trawling gear.

Decision Making Processes

Mexico is a federal constitutional republic, that operates under a top-down national management scheme. Mexican laws are based on the 1917 Constitution. According to article 27, "The Nation has full ownership over all the natural resources of the continental shelf, the seabed and subsoil supporting the federal government's authority to manage all marine and inland fisheries resources found within federal national waters" (DOF, 2022).

LGPAS (Ley General de Pesca y Acuacultura Sustentable)

Mexican fisheries are ruled by the "Ley General de Pesca y Acuacultura Sustentable" (General Law for Sustainable Fishing and Aquaculture, LGPAS) published on 2007 (DOF, 2007), with last amendments published in the official Gazette (DOF) ON 19-01-2023. Its main purpose is to regulate, promote, and manage the use of fishery and aquaculture resources [….] establishing the basis for the application of management activities by the federation, states, and municipalities with the fisher's participation and the overarching principles related to the integral and sustainable development of fisheries and aquaculture" (DOF, 2023).

Some of the objectives established in article 2 include:

- To establish and define the principles to manage, regulate, promote, and integral development and sustainable management processes considering social, technological, productive, biological and environmental aspects.
- To establish the basis for the planning, conservation, protection, repopulation and sustainable usage of fisheries and aquaculture resources, as well as the protection and rehabilitation of those ecosystems in which these resources occur.
- To determine fisheries management process, and establish permit holder's management
- To improve the quality of fishers' life, access rights, promote fisher's participation
- To promote application of the law and coordination by all levels of government,
- To support scientific research,
- To promote quality assurance and certification of fisheries and aquaculture products
- To promote enforcement, determine sanctions, and assurance that fishing and aquaculture are prioritized for food production.

The legal entity that has fisheries jurisdiction is the Secretaría de Agricultura, Ganadería Desarrollo Rural, Pesca y Alimentación (Secretariat of Agriculture, Livestock, Fisheries and Food, SAGARPA) via the Comisión Nacional de Acuacultura y Pesca (National Commission of Fish and Aquaculture, CONAPESCA) and its scientific Branch Instituto Nacional de Pesca y Acuacultura (INAPESCA) a descentralized body of the Federal Public Administration, sectorized to SAGARPA, with legal personality and its own assets. Currently the name of INAPESCA has been changed to IMIPAS (Instituto Mexicano de Investigación en Pesca y Acuacultura Sustentables - Mexican Institute for Research in Sustainable Fisheries and Aquaculture)

LGEEPA. (Ley General del Equilibrio Ecológico y Protección Ambiental)

The LGEEPA (Ecological Equilibrium and Environmental Protection, LGEEPA) is harmonized to work in accordance with the LGPAS. The LGEEPA establishes the conditions to which the execution of works and activities that may cause ecological imbalance or exceed the limits are subject; and the conditions established to protect the environment and preserve and restore ecosystems, in order to avoid or minimize their negative effects on the environment. For this purpose, those who intend to carry out any of the following works or activities, will require prior authorization in matters of environmental impact from the Secretariat (LGEEPA: article 28 -XII, DOF 2023): Fishing, aquaculture or agricultural and livestock activities that may endanger the preservation of one or more species or cause damage to ecosystems. The Secretaría del Medio Ambiente y Recursos Naturales (Secretariat for Environment and Natural Resources,

SEMARNAT) is the highest executive branch for LGEEPA general law, while the Comisión Nacional de Áreas Naturales Protegidas (National Commission for Natural Protected Areas, CONANP) relates specifically to natural reserves.

LGVA (Ley General de Vida Silvestre)

The "Ley General de Vida Silvestre" (General Law of Wildlife and its Regulations) dictates measures for protected species. As with all marine activities, the fishery is regulated by the "Ley de Navegación" (Navigation Law) for the licensing of boats.

The "Código Penal Federal" (The Federal Criminal Code) considers criminal activities against protected species. Article 420, Fraction II Bis establishes "Penalty from one to nine years in prison and for the equivalent of three hundred to three thousand days fine, to whom illegally: in a malicious way capture, transform, collect, transport, destroy or trade with aquatic species called abalone, shrimp, sea cucumber and lobster, inside or outside the closed periods, without counting on the authorization that corresponds, in an amount that exceed 10 kilograms of weight" (DOF 2021).

Fishing product processes and fishing operations at sea are regulated by the "Ley General para la Prevención y Gestión Integral de los Residuos" (General Law for the Prevention and Integral Waste Management) and the "Ley de Vertimientos en las Zonas Marinas Mexicanas" (Law of Dumping in the Mexican Marine Areas) and must comply with the "Ley General de Cambio Climático" (General Law of Climate Change). The usage of water in seafood processing plants is also regulated by the "Ley de Aguas Nacionales" (Law of National Waters) and its Regulations and the "Ley Federal de Responsabilidad Ambiental" (Federal Law of Environmental Liability).

Official Mexican Standards (NOMs)

The NOMs are legally binding technical regulations that control a diverse range of production processes. Article 40 of the "Ley Federal de Metrología y Normalización" (Federal Law of Metrology and Standardization) establishes that a NOM "regulates procedures that assure the preservation of natural resources […] and if necessary, assign preferential access rights and benefits of fisheries resources to indigenous communities and people […] in the places they occupy and inhabit." NOM-002-SAG/PESC-2013 is in charge of ordering the use of the species of shrimp in Mexican Waters.

CNP (Carta Nacional Pesquera)

"Carta Nacional Pesquera" (Nacional Fisheries Chart, CNP) summarizes the fisheries management of Mexican fisheries. The CNP is a binding document for the fishery authorities. It includes a diagnosis and assessment of the fisheries in the Chart, fisheries and conservation indicators, and management recommendations issued by IMIPAS former INAPESCA. It is updated every several years. It is first published as draft to undergo a public review process giving an opportunity for stakeholders to provide INAPESCAut on the fisheries' status. After the review period, the final document is published in DOF. The last version of the CNP was published on July 21st, 2023.

Management Plans

Fishing management plans are developed to set fishery objectives, to determine management tools, to protect resources and to support fisheries policy. Management plans contain the Sustainable Fisheries Code of Conduct principles and agreements that establish the use of management instruments including closures; access rights and concessions; quotas; minimum size limits; monitoring, control, and surveillance (MCS) protocols; and target species conservation agreements.

Roles and Responsibilities

SAGARPA

Its mission is to promote the productive, inclusive and sustainable development of the agricultural, aquaculture and fishing sector, which contributes to national food self-sufficiency and the well-being of the population of rural and coastal territories, through public policies and strategic actions in the Mexican countryside. SAGARPA has the responsibility to manage fisheries and aquaculture legislation.

CONAPESCA

CONAPESCA is an administrative entity of SAGARPA, responsible for the management, coordination and policy development related to the sustainable use and exploitation of fisheries and aquatic resources. Oversight of CONAPESCA falls under the jurisdiction of SAGARPA. CONAPESCA's responsibilities include fisheries management, guiding the development of fishery specific regulations and fisheries management systems and standards such as the NOMs, issuing quota, and fishing and aquaculture permits. Fishing violations are penalized under the terms of the Fisheries Act and its Regulations and are enforced through coordination between CONAPESCA and PROFEPA.

IMIPAS -INAPESCA-

IMIPAS is responsible for technical aspects of fishing activities in Mexico and serves as technical advisor to CONAPESCA. It is in charge of directing, coordinating, and guiding scientific and technological research in the field of fishing and aquaculture, as well as the development, innovation and technology transfer required by the sector fishing

and aquaculture (LGPAS, Art. 29). Among its responsibilities is the development of management plans, performing surveys of abundance, stock assessments and estimating fisheries potential yields along with proposing quotas or any other management tool. These specific functions are completed by “Centros Regionales de Investigación Pesquera” (Regional Fisheries Centres known as “CRIPs”), which are operational offices of INAPESCA.

SEMAR (Secretaría de Marina Armada de México)

SEMAR is the National Military Institution. Its mission is to exercise National Maritime Power, protect maritime interests, maintain the rule of law in Mexican marine areas, coasts, rivers, lake areas and port areas, as well as apply the National Maritime Laws, to guarantee sovereignty and promote Mexico´s development in the terms established by the Political Constitution of the United Mexican States, the laws that derive from it and international treaties. It collaborates with CONAPESCA, CONANP and PROFEPA to undertake inspection, monitoring and control activities in accordance of their respective competencies.

SEMARNAT

The “Secretaría de Medio Ambiente y Recursos Naturales” (Secretariat of Environment and Natural Resources) oversees the conservation and sustainable use of ecosystems and biodiversity, pollution control and prevention, management of water resources, and preventing and mitigating climate change impacts; it is responsible for protecting marine resources via CONANP.

CONANP

CONANP is a decentralized agency of SEMARNAT. It is responsible of Natural Protected Areas.

PROFEPA

PROFEPA is a decentralized agency of SEMARNAT. It is responsible for solving environmental disputes, including issuing sanctions, related to all types of environmental protected species, such as sea turtles. PROFEPA also performs inspections and provides inspection training to SAGARPA staff to help catch and discourage IUU fishing practices that present an environmental threat.

CNPA and CEPA. Fisheries and Aquaculture National Council “Consejo Nacional de Pesca y Acuacultura” (CNPA) and Fisheries and Aquaculture State Council “Consejo Estatal de Pesca y Acuacultura”

They are the intersectoral forum for the support, coordination, consultation, agreement, and advice. They are conformed by representatives from the fishing and aquaculture sector, federal or state regulatory organizations, and social organizations. Their objective is to propose policies, programs, projects, and instruments aimed at supporting, promoting productivity, regulating and controlling fishing and aquaculture activities, as well as increasing the competitiveness of productive sectors. CNPA operates at a national level and CEPA at a state level.

CCNNA

The “Consejo Consultivo para la Normalización Agroalimentaria” (Advisory Committee for the Normalization of Agricultural Food Production, CCNNA) is an advisory committee for SAGARPA with the following objective: Propose, compile, review, approve, modify, cancel, publish and broadcast Mexican official norms related with the food production based on agriculture, livestock, aquaculture and fisheries. In the case of regulations for aquaculture and fisheries, the Sub-committee of Responsible Fishing is in charge of this sector. The Committee and sub-committee members belong to the governmental, industrial, productive, academic, service and consumer sectors. This composition ensures the participation of all stakeholders of the fisheries.

Monitoring, control and surveillance

The “Dirección General de Inspección y Vigilancia (General Direction of Control and Surveillance, DGIyV) of CONAPESCA is responsible for verifying compliance with current regulations regarding Inspection and Surveillance of the fishing and aquaculture sector.

The DGIyV’s objectives include the following:

- Formulate and drive monitoring, control and surveillance activities related to fishery and aquaculture policy.
- Verify that fisheries laws are legally abided by as they relate to concessions and other authorized access rights schemes.
- Request the legal origin and accreditation of fisheries products and subproducts
- To make sure that fishery landings are undertaken in accordance with the law.
- Investigate complaints and legal actions against members of the fishery sector.
- Impose sanctions.

CONAPESCA has a 24-hour telephone line dedicated to receiving complaints regarding illegal fishing activities. These reports can be anonymous. Another method to establish a complaint related to illegal fishing is via SIDEPI

(https://sidepi.conapesca.gob.mx), an internet portal dedicated exclusively to capture, report, and follow up on reports of illegal fishing. These complaints are investigated by the corresponding authorities.

The legal documents needed to sell and transfer fish products are the Arrival notice ("Guía de Pesca") needed to transport fishery products from one state to another and, recently, the SICT (Secretaría de Infraestructura, Comunicaciones y Transportes) requests a "Carta Porte" to carry out the transfer of goods and/or merchandise in national territory.

SEMAR

The vision of SEMAR is to exercise National Maritime Power, protect maritime interests, maintain the rule of law in Mexican marine areas, coasts, rivers, lake areas and port areas, as well as apply the National Maritime Regulations to guarantee sovereignty and promote the development of the country in the terms established by the Political Constitution of the United Mexican States, the laws that derive from it and international treaties.

3.6.1.3. Fishery-Specific Management

Fishery specific management is ruled by NOM-002-SAG/PESC-2013 and the Fishery Management Plan for Brown Shrimp (*Farfantepenaeus aztecus*) and White Shrimp (*Litopenaeus setiferus*) on the coasts of Tamaulipas and Veracruz.

The Official Mexican Standard NOM-002-SAG/PESC-2013 is the specific piece of legislation containing the regulations applicable to shrimp harvesting in Mexico. This law includes previsions and restrictions to commercial shrimp fisheries in bays, marshes, estuarine lagoon systems and coastal and oceanic Mexican Waters. It includes specifications of vessels, engines, fishing gear, fishing areas, mesh size and special devices for bycatch.

NOM-002-SAG/PESC-2013 is complemented by the following NOM´s:

- NOM-061-PESC-2006, technical specifications for sea turtles' excluders used by the shrimp trawl fleet in waters under federal jurisdiction (DOF, 22-01-2007).
- NOM-062-PESC-2007, for the use of the location and satellite monitoring system of fishing vessels (DOF, 24-04-2008).
- NOM-059-SEMARNAT-2010, Environmental Protection-Native species of Mexico of wild flora and fauna-Risk categories and specifications for their inclusion, exclusion, or change-List of species at risk, (DOF, 30-12-2010).
- NOM-008-SCFI-2002, General System of Measurement Units, (DOF,27-11-2002).

3.6.1.4. 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 and effective 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** that deliver management outcomes consistent with MSC Principles 1 and 2.
	Met?	**Yes**	**Yes**	**No**
Rationale		The General Sustainable Fisheries and Aquaculture Law (Ley General de Pesca y Acuacultura Sustentables) is the legal document governing the conservation, preservation, exploitation and management of all aquatic flora and fauna in Mexico (LGPAS, 2007) as well as the protection and rehabilitation of the ecosystems in which these resources are found in order to promote the integral development and sustainable fishing and aquaculture. It is stated that one of the objectives of this law is to establish the basis and coordination mechanisms between federal authorities, state entities and municipalities. It also determines and establishes the basis for the creation and mechanisms of operation for engaging and participation of fishers. There is no need for binding procedures with other parties as the fishery takes place entirely within waters of Mexican jurisdiction and, while the stock interacts with the USA brown shrimp fishery, they are considered different stocks. Thus, there is a full and effective national legal system, to deliver management outcomes consistent with MSC Principles 1 and 2. Therefore, PI 3.1.1 a) would meet SG80. As it is not entirely proved that the system effectively delivers such outcomes, does not reach 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, which is appropriate to the context of the fishery and has been **tested and proven to be effective**.
	Met?	**Yes**	**Yes**	**No**
Rationale		There is a national system of transparency and effective mechanisms for the resolution of legal disputes within the context of fisheries. The LGPAS outline appeal mechanisms for administrative proceedings, infractions, and legal sanctions for the violation of regulations. Sanctions related to fisheries violations are recorded by fisheries field officers and lately by Marine Secretary. There is evidence that a transparent mechanism for the resolution of legal disputes exists: Rules (DOF, November 8th, 2012; Ley Federal de Procedimientos Administrativos, LFPA (DOF, 1994), Ley General del Equilibrio Ecológico y la Protección al Ambiente, Section V, Chapters IV, V, VI (DOF, 1988), Ley General de Transparencia y acceso a la información Pública (DOF, May 4th, 2015). Thus, there is evidence that 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, but it has not been tested and proven to be effective. Thus, SG80 is met and maybe SG100.		

PI 3.1.1		The management system exists within an appropriate and effective 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**		
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**	**No**
Rationale		Article 2 of the LGPAS has an objective to seek the right of access, preferential use for local and or indigenous communities. Article 72 states that subsistence fishing is considered and permitted by law for coastal communities and states the prohibition of selling that catch. Thus, 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. Therefore PI 3.1.1.c would meet SG80.		

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

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		Organizations 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** in the LGPAS. SAGARPA, SEMARNAT, CONAPESCA, INAPESCA, and SENASICA. Some responsibilities have recently been modified for SEMAR, the legislation is still being updated, so there are some very specific gaps. Therefore, would reach the SG80 level and maybe also SG100.		
b	**Consultation processes**			
	Guide post	The management system includes consultation processes that **obtain relevant information** from the main affected parties, including **local knowledge**, to inform the management system.	The management system includes consultation processes that **regularly seek and accep**t relevant information, **including local knowledge**. The management system demonstrates consideration of the information obtained.	The management system includes consultation processes that **regularly seek and accept** relevant information, including **local knowledge**. The management system demonstrates consideration of the information and **explains how it is used or not used**.
	Met?	**Yes**	**Yes**	**No**
Rationale		The management system includes consultation processes that regularly seek and accept relevant information. According to article 2 of LGPAS, objective VII aims to determine and establish the basis for the creation and operation of mechanisms for participatory activities. Article 22 of LGPAS defines CONAPESCA as an intersectoral forum responsible for consultation, support, coordination, and advice. CONAPESCA will aim to propose policies, programs, projects, and instruments aimed at supporting, promoting, productivity, regulation and control of fishing and aquaculture activities, as well as increasing the competitiveness of productive sectors. CONAPESCA has organized several forums for different organizations and academia so these organizations can express their particular point of view, accepting relevant information, including local knowledge. For example, meetings with local leaders analysing results of INAPESCA´s analysis and seeking for agreements for the fishing period. However, neither CONAPESCA nor INAPESCA explain how the information is used or not used; therefore, PI 3.1.2 b) would reach the SG 80 level 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		The Sustainable Committee for brown shrimp is integrated by representatives of the Federal government (CONAPESCA and INAPESCA), and representatives of artisanal and industrial fishing sector, including Veracruz and Tamaulipas and its main objective is to establish and		

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
	analyse the closures. This consultation process provides opportunity for all interested and affected parties to be involved but have not gathered since 2018. Nevertheless, some meetings between artisanal and industrial leaders take place before the fishing opening in order to present relevant information. INAPESCA and CONAPESCA local offices have an open-door policy to local permit holders, providing the opportunity of consultation. Thus, 3.1.2c would achieve SG 80 but not SG100.

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

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 the 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 the MSC Fisheries Standard and the **precautionary approach**, are **explicit** within **management policy**.	**Clear** long-term objectives that guide decision-making, consistent with the MSC Fisheries Standard and the **precautionary approach**, are **explicit** within **and required by** management policy.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		LGPAS (article 2) includes 15 long-term objectives, among them to establish and to define the principles for ordering, promoting and regulating the integral management and sustainable use of fisheries and aquaculture, taking into account social, technological, productive, biological and environmental aspects, promoting improvement of the fisher's livelihood, establishing mechanisms of collaboration, among others. Similarly, objective III states: To establish the bases for the management, conservation, protection, repopulation and sustainable use of fishery and aquaculture resources, as well as the protection and rehabilitation of the ecosystems in which these resources are found. The precautionary approach is explicitly enunciated at the Art 17, section VIII of the LGPAS and it is required by SAGARPA Sectorial Program 2020-2024, thus level SG100 is reached.		

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

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 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 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 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 Principles 1 and 2, are **explicit** within the fishery-specific management system.
	Met?	**Yes**	**Partial**	**No**
Rationale		The Brown Shrimp Management Plan has as explicit long-term objectives of maintaining the stock in a sustainable status, economically viable, and socialy responsible, considering a precautionary and adaptative approach. It states also: Goal 1. To contribute to promoting the sustainable use of the country's natural resources. Goal 2. To contribute to implement a comprehensive development policy that links environmental sustainability with costs and benefits for society. Goal 3. To contribute to reactivate an economic development policy focused on increasing the productivity of the dynamic and traditional sectors of the Mexican economy, in a regionally and sectorial balanced manner. Goal 4. To contribute to boosting productivity in the agri-food sector by investing in the development of physical, human, and technological capital. The strategic objectives include among others an improved environment and include as a goal to conserve critical habitats that are fundamental for shrimp populations as well as the biodiversity of the ecosystem consistent with P2. Nevertheless, some short term objectives are not explicit, so this PI meets SG60 and partially SG80.		

Draft scoring range	**60-79**
Information gap indicator	**Information sufficient to score PI**

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 Advisory Committee of the Brown and White Shrimp fishery in Tamaulipas and Veracruz was installed in Octobre 2017. Since then, it met periodically until 2018, when due to lack of funds they stopped having in-person meetings. It has regulations and is represented by fishing leaders, scientific and management authorities from both states. Although the Committee has not met in-person, there is permanent collaboration between the stakeholders and the research authorities, who in coordination develop the biological sampling, and establish the fishing season according to the results and agreements. This process is frequent to review management regulations in Mexico, when there is no Advisory Committee, with the revision of scoping issues and potential solutions, workshops with stakeholders and, if a new law is presented the public has the opportunity to provide information and opinions before implementation with sometimes effect in the proposed law. It is so that every year, in the specific case of Brown Shrimp, IMIPAS (former INAPESCA) with the help of local stakeholders establishes a biological sampling program that had demonstrated to be effective to determine the opening and closure of the fishery. This report has served along the years to update management regulations. IMIPAS presents this report to stakeholders with the possibility of discussing and analysing it, before it is sent to CONAPESCA, who is the responsible agency of publishing the opening and closure in the DOF. Thus, there are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives and SG60 is met. Nevertheless, some of those processes are at some point informal and SG80 is not met.		
b	**Responsiveness of decision-making processes**			
	Guide post	Decision-making processes respond to **serious issues** identified in relevant research, monitoring, evaluation, and consultation, in a transparent, timely and adaptive manner, and take some account of the wider implications of decisions.	Decision-making processes respond to **serious and other important issues** identified in relevant research, monitoring, evaluation, and consultation, in a transparent, timely, and adaptive manner, and take account of the wider implications of decisions.	Decision-making processes respond to **all issues** identified in relevant research, monitoring, evaluation, and consultation, in a transparent, timely, and adaptive manner, and take account of the wider implications of decisions.
	Met?	**Yes**	**No**	**No**
Rationale		The history of this fishery shows that over the years the regulation has been adapting and responding to serious issues such as the adaptive management of the stock and addressing impacts on turtles (NOM-061-SAG-PESC/SEMARNAT-2016), and the seabed (NOM-002-SAG/PESC-2013). SG60 is met. Nevertheless, other important issues such as impacts on other species of fish and shellfish, seabirds and mammals have not been considered yet so SG80 is not met.		
c	**Use of precautionary approach**			
	Guide post		Decision-making processes use the **precautionary approach** and are based on best available information.	

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		
	Met?		**Yes**	
Rationale		As stated by Law, decision-making processes for management of the target species use the precautionary approach and are based on best available information. Regarding the impacts on the ecosystem components, there are also some elements of the precautionary approach by deciding the use of TEDs or modifying some traits of the gears as well as deciding some spatial closures. Thus, this PI reaches 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**	**Yes**	**No**
Rationale		The Brown Shrimp Management Plan includes information on the fishery´s performance and an action plan, although updated not very often. SG60 is met. INAPESCA's reports provide some information on the fishery's performance and management action, usually outdated though; and explanations for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation, and review activity, are provided informally on request. Therefore, SG80 is met. However, reports lack of comprehensive information and details on the methodology used for assessments, so SG100 is not 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 of the fishery.	The management system or UoA is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or UoA acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
	Met?	**Yes**	**Yes**	
Rationale		As far as we know, there are no important problems that result in judicial processes. Usually, stakeholders present their problems to legal authorities such as CONAPESCA, which in coordination with other institutions as CONANP, PROFEPA, SEMAR and SEPA seek to resolve the origin of the conflict, looking forward to finding solutions either by a better communication, establishment of agreements, administrative and or operative solutions. If an upgrade of the problem is needed it can be taken to judicial level with the support of the Navy and or Attorneys General´s Office. Thus, the management system acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges, thus SG80 is attained.		

Draft scoring range	**60-79**
Information gap indicator	**Information sufficient to score PI**

PI 3.2.3 – Compliance and enforcement

PI 3.2.3		Monitoring, control, and surveillance (MCS) mechanisms ensure the management measures in the UoA are enforced and complied with		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**MCS system**			
	Guide post	MCS **mechanisms** exist within the UoA.	An MCS **system** exists within the UoA.	A **comprehensive** MCS system is well-established within the UoA.
	Met?	**Yes**	**Yes**	**No**
Rationale		At a national level, there is a landing monitoring system carried out by CONAPESCA responsible of the fishing opening and fishing closure and its surveillance and responsible to report the landings in the Statistical yearbook of Aquaculture and Fishing. Shrimp must have been registered in order to be sold, but it can be sold without invoice in informal local markets. Information gathered during the onsite meetings indicated that inspections to industrial vessels developed both in land and in the ocean. During onsite visit we had observed inspections being conducted at landing site, to the nets before the opening of the fishing period; although there is no system in place to verify that the information accounted for in the landing tickets is accurate, especially in regard artisanal fishery. Participants of the onsite meeting agreed that there is a volume of catch that comes from artisanal unregulated vessels operating without a fishing permit. There is a Satellite Monitoring System implemented by CONAPESCA, that has information in real time of Mexican industrial vessels. This system was updated in beginning 2023, and it went out of service for several months but was updated before the shrimp fishery started in 2023. This system is not available but for very few artisanal vessels in the northern Gulf of California. CONAPESCA, as responsible of MCS, has a public site (SIDEPI), sidepi.conapesca.gob.mx, where anyone can report any illegal activity related to fishing, and has the obligation of process it. Thus, there is MCS available within the UoA for industrial and artisanal fishery, however, especially in the case of artisanal fishery the MCS is not comprehensive, and it is not well-established in all the critical areas of the coastal lagoons. It is known that some areas within Laguna Madre are dangerous so there are no monitoring actions in those areas. It was informed that some inspections are being conducted at sea in industrial vessels, but there is no evidence that this happens in artisanal vessels. Thus, an MCS system exists, but is not comprehensive and or well-established within the UoA achieving SG80, but no SG100.		
b	**Sanctions**			
	Guide post	Sanctions to address non-compliance exist within the UoA.	Sanctions to deal with non-compliance exist, that are appropriate to the UoA, and are applied.	Comprehensive sanctions to address non-compliance exist, that are appropriate to the UoA, and are consistently applied.
	Met?	**Yes**	**No**	**No**
Rationale		CONAPESCA is the responsible office of establishing illegal fishing sanctions through Inspection and Surveillance General Direction (Dirección General de Inspección y Vigilancia). It has around 210 Federal Officers distributed throughout the national coastal territory and inland waters. PROFEPA and Public Ministry (Ministerio Público) are responsible of following up the reports. Private reports can be done through the web page sidepi.conapesca.gob.mx, where with the complaint number anyone can follow up. CONAPESCA sends possible non-compliance reports to PROFEPA and SEMAR but they are not involved or have any feedback of possible resulting sanctions. There is evidence through published media of some sanctions to address non-compliance as of removal of prohibited fishing gear or illegal catches, some reports are available via INAI. At Pescandodatos.causanatura.org the Effectiveness Index of Combating Illegal Fishing Analysis results of Tamaulipas is 0.2164, being in 14th place of the 17th Mexican states assessed. Some public information consider shrimp artisanal illegal fishing is around 50% of the artisanal catches. Thus, there are sanctions to address non-compliance within the UoA but there are not appropriate nor commonly applied, achieving SG 60 but not SG80.		

PI 3.2.3		Monitoring, control, and surveillance (MCS) mechanisms ensure the management measures in the UoA are enforced and complied with		
c	**Compliance (information)**			
	Guide post	Information is adequate to **broadly understand** compliance in the UoA.	Information is adequate to **estimate** compliance in the UoA with a **high degree of accuracy**.	Information is adequate to **estimate** compliance in the UoA with a **very high degree of accuracy**.
	Met?	**Yes**	**Yes**	**No**
Rationale		After information gathered through the Satellite Monitoring System (SISMEP), SIDEPI, Arrival Notices "Guía de Pesca" and "Carta Porte", and the presence of Fisheries Officers in strategic places, there is adequate information to estimate compliance in the UoA with a high degree of accuracy in industrial vessels, but information available of artisanal vessels is adequate only to broadly understand compliance. Some information can be gathered from official records by CONAPESCA and/or SEMAR. There is also information in national news. Some information can be reviewed via request to INAI. Thus, information is adequate to estimate compliance in the UoA with a high degree of accuracy in industrial vessels, thus achieving SG80. For the artisanal vessels the situation is different, but they would be out of the UoC.		
d	**Compliance (outcome)**			
	Guide post	**Systematic non-compliance** of regulations specific to governing sustainable fishing practices on the water is not evident within the UoA.	Majority of regulations, including all regulations specific to governing sustainable fishing practices on the water, are **likely** to be complied with.	Majority of regulations, including all regulations specific to governing sustainable fishing practices on the water, are **consistently** complied with.
	Met?	**Yes**	**No**	**No**
Rationale		While there is not evident the systematic non-compliance for the offshore fleet, so **SG60** is met, but there is evidence of systematic non-compliance with the specific regulations governing the artisanal vessels in some areas, some reports mention up to around 50% of the shrimp coming from the artisanal fleet comes from illegal fishing. Therefore, **SG80** is not met.		

Draft scoring range	**60-79**
Information gap indicator	**Information sufficient to score PI**

PI 3.2.4 – Monitoring and management performance evaluation

PI 3.2.4		There is a system for 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		There are mechanisms in place to evaluate the performance of some parts of the fishery-specific management system, particularly regarding the measures for the target species. All Official Standards, as of NOM-002-SAG/PESC-2013 are reviewed every five years in Mexico, however this NOM has not been modified since it has been published in 2013. The Brown and White Shrimp Management Plan in the Gulf of Mexico had to be reviewed every three years, but so far, the assessment team received no evidence that this had been accomplished. Therefore, SG60 is met, but not SG80		
b	**Internal and/or external review**			
	Guide post	The fishery-specific management system is subject to **occasional internal** review.	The fishery-specific management system is subject to **regular internal** and **occasional external review**.	The fishery-specific management system is subject to **regular** internal and external review.
	Met?	**Yes**	**No**	**No**
Rationale		The criteria for opening and closing the fishing season have been evolving along the time, evidencing occasional internal reviews of the management system. SG60 is met. Nevertheless, although there are some mechanisms in place (see aspect a) to review the system with some regularity, such thing has not been accomplished and external reviews have not been registered. Therefore, SG80 is not met.		

Draft scoring range	**60-79**
Information gap indicator	**Information sufficient to score PI**

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4. Template information and copyright

The CAB should delete the table below:

Table 2: Template version control

Version	Date of publication	Description of amendment
1.0	15 August 2011	Date of first release
1.1	31 October 2013	Updated in line with changes to CR v1.3
2.0	08 October 2014	Confirmed background sections (Section 3) as optional (use of 'may' statements) Modified Table 6.3 to create a simplified scoring sheet to be completed in place of full evaluation tables Made amendments to PIs based on Fishery Standard Review changes (e.g. removed original PIs 1.1.2, 3.1.4 and 3.2.4).
2.1	9 October 2017	Inclusion of optional full evaluation tables
3.0	17 December 2018	Release alongside Fisheries Certification Process v2.1
3.1	29 March 2019	Minor document changes for usability
3.2	25 March 2020	Release alongside Fisheries Certification Process v2.2
4.0	26 October 2022	Release alongside Fisheries Certification Process v3.0