

Why Participate?

How ODP Works

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metro

METRO

METRO Inc. is a food and pharmacy leader in Quebec and Ontario, providing employment to more than 95,000 people. Its purpose is to nourish the health and well-being of its communities. As a retailer, franchisor, distributor, manufacturer, and provider of eCommerce services, the company operates or services a network of 975 food stores under several banners including Metro, Metro Plus, Super C and Food Basics.

Our ambition is to implement responsible practices within our supply chain to offer our customers products that respect workers and the environment. This long-term task requires continuous issue monitoring, close collaboration with our suppliers and rigorous implementation programs.

METRO offers almost 100 different species of fish and seafood to its customers through various options, including products available at our fish and seafood counters, private label products including our Selection and Irresistibles brands, as well as national brand products. All these products are purchased in accordance with our <u>Sustainable Fisheries and Aquaculture Policy</u>.

METRO Inc. est un chef de file de l'alimentation et de la pharmacie au Québec et en Ontario, procurant de l'emploi à plus de 95 000 personnes. Sa raison d'être est de nourrir la santé et le bien-être de ses communautés. Par ses activités de détaillant, franchiseur, distributeur, fabricant et de commerce en ligne, l'entreprise exploite ou approvisionne un réseau de 975 magasins d'alimentation sous plusieurs bannières dont Metro, Metro Plus, Super C et Food Basics.

Notre ambition est de mettre en œuvre des pratiques responsables dans notre chaîne d'approvisionnement afin d'offrir à notres clientèle des produits respectueux des travailleurs et de l'environnement. Il s'agit d'une tâche à long terme qui nécessite une veille continue des enjeux, une collaboration étroite avec nos fournisseurs et des programmes rigoureux d'implantation.

METRO propose à ses clients près de 100 espèces différentes de poissons et de fruits de mer par le biais de diverses options, notamment les produits disponibles à nos comptoirs de poissons et de fruits de mer, les produits de marque privée, comprenant nos marques Sélection et Irresistibles, ainsi que des produits de marques nationales. Tous ces produits sont achetés conformément à notre <u>Politique de pêche et</u> <u>d'aquaculture durables</u>.

% of purchases certified to a GSSI recognized standard

% of purchases with traceability documented

% products sold with traceability information where possible

96%

Number products certified to a GSSI recognized standard

584





Production Methods Used

- Midwater trawl
- Bottom trawl
- Dredge
- Purse seine
- Cast nets
- Gillnets and entangling

nets

- Hook and line
- Longlines
- Handlines and pole-

lines

- Rake / hand gathered
 Farmed
 - / hand netted
- Pots and traps

Summary

This profile covers wild-caught and farmed purchased by METRO in its fiscal 2022 and sold in our banners Metro, Metro Plus, Super C and Food Basics in Quebec and Ontario.

METRO is aware that the fishing and aquaculture industries face important issues in regard to the sustainability of fish and seafood stocks, the protection of biodiversity and ecosystems, and the conditions under which workers are employed. Our Sustainable Fisheries and Aquaculture Policy covers fresh, frozen and canned fish and seafood. It provides a framework for our sourcing practices and is based on five principles that foster responsible procurement: healthy species, responsible operating methods, product traceability, respect for workers and socioeconomic development.

Every fish and seafood product bought by METRO, whether it's national or private brand, has been carefully assessed based on those five principles. We believe that any decision regarding sustainable fisheries and aquaculture must be based on an objective diagnosis, which considers formal scientific advice. Traceability is central to our approach, and we collect scientific species name, geographic provenance, operating method, and certification for all the products we purchase. We aim to provide consumers with informative and transparent labelling so they can make informed purchase decisions, which is why we add traceability information on the label of our over-the-counter and private label products whenever it is possible.

Our Sustainable Fisheries and Aquaculture Policy is also a key element of our global corporate responsibility (CR) approach as it is the focus of a specific objective in our <u>2022-2026 CR Plan</u>. For our progress against our sustainability goals, please visit the <u>corporate responsibility section of our</u> <u>corporate website</u>.

The robustness of our Policy as well as our approach in terms of traceability and public disclosure have been recognized by the non-governmental organization SeaChoice, which has ranked METRO as the #1 retailer for seafood sustainability in Canada in 2022 and 2023.

Ce profil couvre les produits sauvages et d'élevage achetés par METRO au cours de son exercice financier 2022 et vendus dans nos bannières Metro, Metro Plus, Super C et Food Basics au Québec et en Ontario.

METRO est consciente que les industries de la pêche et de l'aquaculture font face à des enjeux sérieux qui concernent autant la pérennité des stocks de poissons et fruits de mer, la protection de la biodiversité et des écosystèmes, que les conditions dans lesquelles évoluent les travailleurs. Notre politique de pêche et d'aquaculture durables couvre les poissons et fruits de mer frais, surgelés et en conserve. Elle encadre nos pratiques d'approvisionnement et repose sur cinq principes qui favorisent un approvisionnement responsable : espèces en santé, méthodes d'exploitation responsables, traçabilité des produits, respect des travailleurs et développement socioéconomique.

Chaque produit de la mer acheté par METRO, qu'il s'agisse d'une marque nationale ou privée, a été soigneusement évalué sur la base de ces cinq principes. Nous pensons que toute décision concernant la pêche et l'aquaculture durables doit être fondée sur un diagnostic objectif, qui tient compte des avis scientifiques officiels. La traçabilité est au cœur de notre approche, et nous recueillons le nom scientifique de l'espèce, la provenance géographique, la méthode d'exploitation et la certification pour tous les produits que nous achetons. Nous souhaitons fournir aux consommateurs un étiquetage informatif et transparent afin qu'ils puissent prendre des décisions d'achat éclairées. C'est pourquoi nous ajoutons des informations sur la traçabilité sur l'étiquette de nos produits vendus en comptoir et de nos produits de marque privée chaque fois que cela est possible.

Notre politique de pêche et d'aquaculture durables est également un élément clé de notre approche en responsabilité d'entreprise (RE) globale,

puisqu'elle fait l'objet d'un objectif spécifique dans notre <u>Plan RE 2022-2026</u>. Pour connaître les progrès accomplis dans la réalisation de nos objectifs en matière de pêche et aquaculture durable, veuillez consulter la section consacrée à la <u>responsabilité d'entreprise sur le site web de</u> <u>notre entreprise</u>.

La rigueur de notre politique ainsi que notre approche en termes de traçabilité et de divulgation publique ont été reconnues par l'organisation non gouvernementale SeaChoice, qui a classé METRO au premier rang des détaillants canadiens pour la durabilité des produits de la mer en 2022 et 2023.

- https://corpo.metro.ca/userfiles/file/PDF/sustainable-ficheries-aquaculture-policy.pdf
- https://corpo.metro.ca/userfiles/file/PDF/2022-2026-cr-plan.pdf
- https://corpo.metro.ca/en/corporate-social-responsibility.html

Associated Fisheries









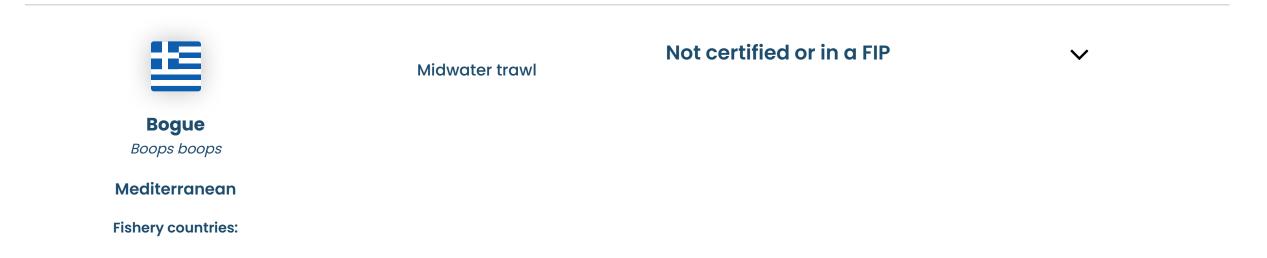
China, Russia, United States

Environmental Notes

- This fishery is unlikely to have direct impacts on ETP species.
- Bycatch for this fishery is considered low.
- The impact depends on the gear type. Bottom trawls will have the greatest impact on the sea bed.

General Notes

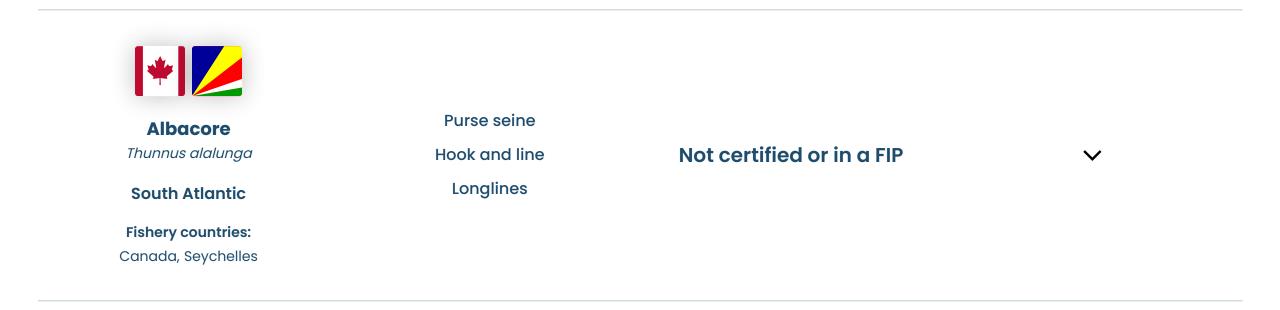
• This fish plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.



• Profile not yet complete.

General Notes

• No additional notes.



Environmental Notes

- Interactions with vulnerable species such as sharks, sea turtles, and seabirds are a risk in the longline fishery. Bycatch of sea turtles also occurs in purse seine fisheries. Management measures are in place to help protect vulnerable species.
- Monitoring and reporting of bycatch data in Atlantic tuna fisheries is poor.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

<u>Good Fish Guide - Albacore tuna, South Atlantic, Hook & line (longline)</u>



Albacore Thunnus alalunga

Indian Ocean

Purse seine Hook and line Longlines

Not certified or in a FIP

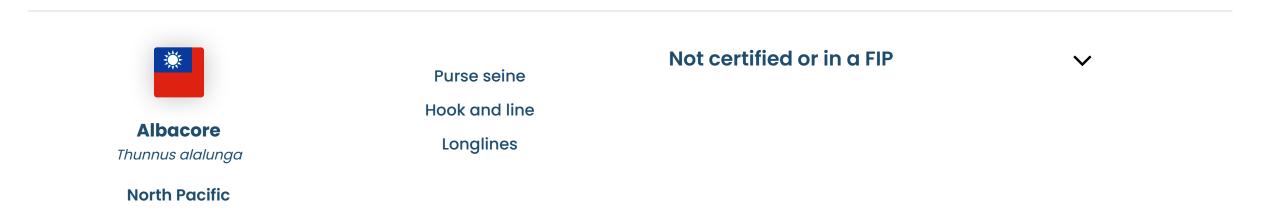
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Fishery countries: Japan, New Zealand

Environmental Notes

- There are risks to vulnerable species of sharks, seabirds, and sea turtles in this fishery, but there are mitigation measures in place.
- Bycatch of other tuna, billfishes and sharks is a risk for this fishery, but there are mitigation measures in place.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes



- Interactions are known to occur with sea turtles, seabirds, and marine mammals in the North Pacific longline and purse seine fisheries. Management measures are in place to help protect vulnerable species.
- Bycatch varies by gear type. Other tunas, sharks, billfish, and other fish are caught as bycatch species in the North Pacific albacore longline fisheries. Bycatch rates of purse seine and other gear are thought to be lower.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes

Albacore	Purse seine		
Thunnus alalunga	Hook and line	Not certified or in a FIP	\checkmark
South Pacific	Longlines		
Fishery countries:			
China, South Korea, United States			

Environmental Notes

- Data specific to impacts on ETP species in the South Pacific albacore fishery is not available. Interactions are known to occur with sea turtles, seabirds, and marine mammals in the South Pacific longline fisheries. Management measures are in place to help protect vulnerable species. Bycatch of sea turtles also occurs in purse seine fisheries.
- Bycatch varies by gear type. Other tunas, sharks, billfish, and other fish are caught as bycatch species in the South Pacific albacore longline fisheries. Bycatch rates of purse seine and other gear are thought to be lower.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes.



Albacore

Thunnus alalunga

Western and Central Pacific

Fishery countries: Vietnam

Purse seine	
Hook and line	Not certified or in a FIP
Longlines	

Environmental Notes

- Interactions are known to occur with sea turtles, seabirds, and marine mammals in the Pacific Ocean longline and purse seine fisheries. Management measures are in place to help protect vulnerable species.
- Bycatch varies by gear type. Other tunas, sharks, billfish, and other fish are caught as bycatch species in the Pacific Ocean albacore longline fisheries. Bycatch rates of purse seine and other gear are thought to be lower.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes



Anchovy nei Engraulis spp., Engraulis encrasicolus, Engraulis ringens

Mediterranean and Black Sea

> **Fishery countries:** Italy, Spain

Environmental Notes

- Incidental capture of dolphins presents a risk in this fishery.
- Other small pelagic species are caught as bycatch in the Mediterranean including Atlantic chub mackerel. The common bycatch species in the Black Sea is the Mediterranean horse mackerel.

Not certified or in a FIP

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• This fishery is unlikely to have a significant impact on the sea bed.

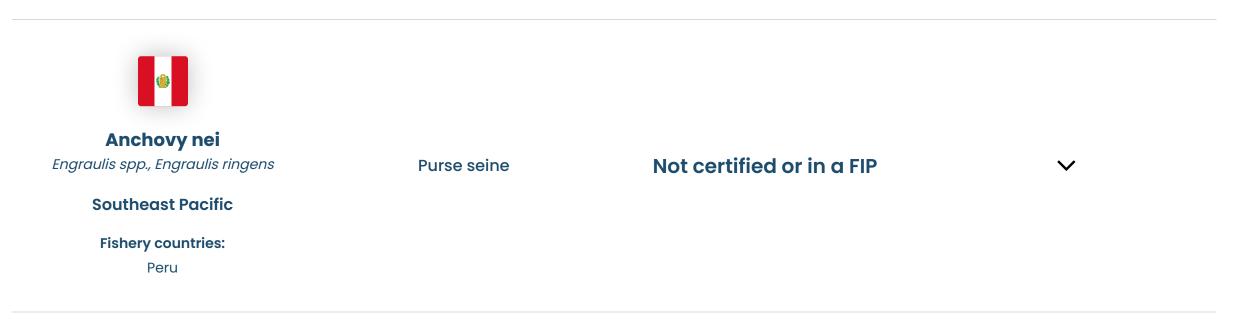
General Notes

• This fish plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.

Purse seine

References

Seafood Watch, April 2014, European anchovy & European pilchard, Adriatic Sea, Aegean Sea, Alboran Sea, Gulf of Lion, Ionian Sea, Ligurian Sea, Spain/Mediterranean, Strait of Sicily, Black Sea, Unassociated purse seine (non-FAD), Midwater trawls



Environmental Notes

- The fishery interacts with seabirds and marine mammals. Indirect impacts on ETP may also occur through impacts on food availability.
- Bycatch for this fishery is considered low. Longnose anchovy is also caught in the fishery and its stock status is unknown.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• This fish plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.



Environmental Notes

• The production of Arctic char relies on inputs from wild capture fisheries for feed.

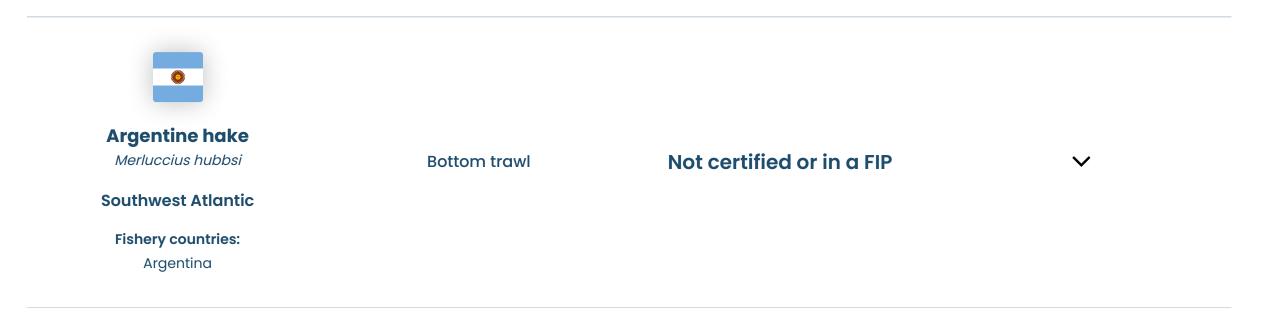
- The risk of impacts on wild species are reduced through the use of land-based production systems.
- Management measures are in place to limit impacts on water quality from farms discharging water and waste into coastal waters.

General Notes

References

<u>Good Fish Guide - Arctic char, Europe, UK, Tanks, flow through</u>

Seafood Watch, November 6, 2014, Arctic char, Canada, Iceland, U.S. Land-based flow-through and recirculating aquaculture systems



Environmental Notes

- There are risks to sharks, skates and seabirds with this fishery.
- Bycatch for this fishery is a risk, but there is insufficient data available to assess significance.
- Bottom trawls will directly impact on the sea bed. However, management measures are in place.

General Notes

• No additional notes



Environmental Notes

- There are risks to sharks and rays with this fishery.
- Bycatch of hake is a risk with this fishery.
- Bottom trawls will directly impact on the sea bed.

General Notes

• The Argentine red shrimp fishery is supported by are two fishery improvement projects covering onshore and offshore components of the fishery.

References

Fishery Progress, Argentina onshore red shrimp - bottom trawl FIP

Fishery Progress, Argentina offshore red shrimp - bottom trawl FIP



Midwater trawl

Not certified or in a FIP

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Atlantic chub mackerel

Scomber colias

Eastern Central Atlantic

Purse seine

Fishery countries: Morocco

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.

Atlantic cod	Midwater trawl		
Gadus morhua	Bottom trawl	Certified	\checkmark
Northeast Atlantic	Longlines		
Fishery countries:			
Iceland			

Environmental Notes

- Measures to record and reduce bycatch of sea birds in the longline component of the fishery are needed.
- Sharks and skates are caught as bycatch in Icelandic fisheries.
- The impact depends on the gear type. Bottom trawls will have the greatest impact on the sea bed. However, the fishery operates at a depth where it is unlikely to impact vulnerable marine ecosystems.

General Notes

References

Good Fish Guide - Atlantic cod, Iceland, Bottom trawl (otter), Marine Stewardship Council (MSC)

Good Fish Guide - Atlantic cod, Iceland, Hook & line (longline), Marine Stewardship Council (MSC)



Atlantic cod

Gadus morhua

Northeast Atlantic

Fishery countries: Norway **Bottom trawl**

Purse seine

Certified

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Environmental Notes

- There are concerns about the cumulative impacts of fisheries in this area upon the endangered species, golden redfish.
- There is bycatch for this fishery but non-target species are retained. Management measures are in place to reduce impacts on retained species.
- The impact depends on the gear type. Bottom trawls will have the greatest impact on the sea bed. Management measures are in place to limit impacts on benthic habitats.

General Notes

References

Good Fish Guide - Atlantic cod, Northeast Arctic (Barents and Norwegian Sea), Bottom trawl (otter), Marine Stewardship Council (MSC)

*			
Atlantic herring Clupea harengus	Midwater trawl Purse seine	Not certified or in a FIP	\checkmark
North Atlantic			
Fishery countries: Canada			

- There is a lack of Information about the impacts of purse seine and midwater trawl herring fisheries on ETP species.
- Bycatch in herring fisheries is considered low.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes.

Atlantic herringClupea harengusNortheast AtlanticFishery countries:	Midwater trawl Purse seine	Not certified or in a FIP	\checkmark
Germany, Norway			

Environmental Notes

- Direct interactions with ETP species are thought to be rare and this fishery is unlikely to have a significant impact.
- Bycatch in herring fisheries is considered low.
- The fishery is unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes.



Atlantic mackerel Scomber scombrus

NE Atlantic

Fishery countries: France, Iceland, Norway, United Kingdom

Midwater trawl Purse seine Gillnets and entangling nets

Not certified or in a FIP

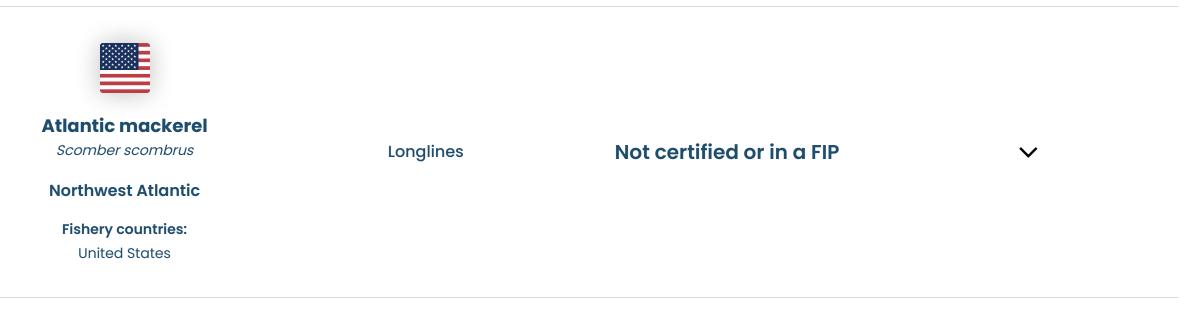
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Environmental Notes

- Bycatch of ETP species may occur but there is insufficient data available to assess significance.
- Bycatch in this fishery is considered low.
- This fishery is unlikely to have a significant impact on the sea bed. Management measures are in place to protect vulnerable habitats.

General Notes

• This fish plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.

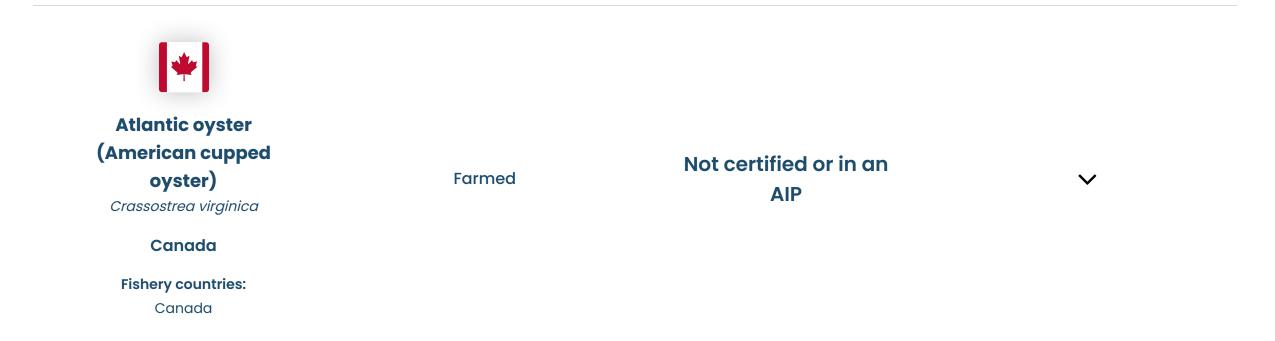


Environmental Notes

• Profile not yet complete.

General Notes

No additional notes.



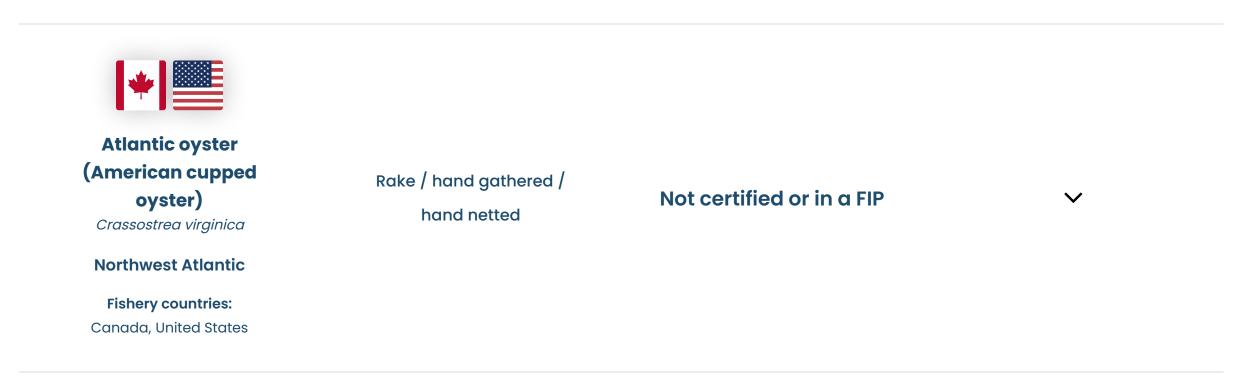
Environmental Notes

- No feed inputs are used to support farmed oysters.
- Spawning-related escapes and disease transfer have the potential to affect wild oyster populations.
- There is no concern regarding pollution from nutrients or organic matter. No feed or chemical inputs are used to support farmed oysters.

General Notes

References

Seafood Watch, October 5th, 2020, Oysters Crassostrea spp., Ostrea spp., Saccostrea spp., Worldwide, Bottom and Off-Bottom Culture



Environmental Notes

• This fishery is unlikely to have significant impacts on ETP species.

- Bycatch in this fishery is considered low.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Seafood Watch, October 2016, Oyster, Eastern (Canada), Crassostrea virginica, Canada/Southern Gulf of St. Lawrence, Hand implements, Updated November 2019

Seafood Watch, April 2018, Eastern oyster, Crassostrea virginica, United States, Northwest Atlantic, Towed dredges, Hand Implements

Atlantic salmon Salmo salar	Farmed	Certified	\checkmark
Canada			
Fishery countries: Canada			

Environmental Notes

- Salmon rely on wild capture fisheries for feed. Marine ingredients are sourced from fisheries that currently have no serious conservation concerns.
- There is an ongoing risk of impact that fish escaping from Canadian-sited farms may have on their wild counterparts (as evidenced by the higher numbers of escapees in Canadian rivers). Disease transfer from farmed salmon to wild salmon is also a concern.
- Impacts on water quality are localized, but there is potential for cumulative impacts in densely farmed areas. Chemical inputs of pesticides and antimicrobials are infrequent though usage varies by production region.

General Notes

- The environmental impacts described are addressed to some degree by certification.
- A farm-based approach is used instead of a zonal approach for aquaculture management and licensing.

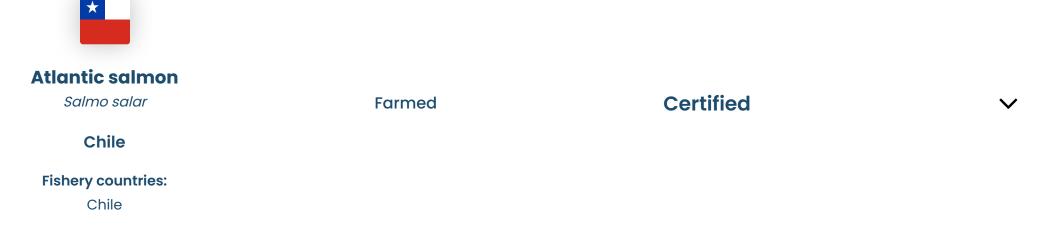
References

Seafood Watch, December 2021, Atlantic Salmon, British Columbia, Canada, Net Pens

Seafood Watch, December 2021, Atlantic Salmon, Atlantic North America, Marine Net Pens

Seafood Watch, Atlantic salmon, Worldwide, Aquaculture Stewardship Council Certified Salmon Standard





Environmental Notes

- Salmon rely on wild capture fisheries for feed. Feed inputs are required to be responsibly sourced where possible.
- There are concerns about the impact of farmed salmon escapes and disease outbreaks on wild salmonids. Overall, the Chilean industry continues to struggle with the control of bacterial diseases and sea lice parasites as indicated by the very high levels of treatment.
- Direct impacts on water quality at the site are unlikely, but there is potential for cumulative impacts in densely farmed areas. The use of antibiotic and pesticides in Chile is high; studies on impact are limited.

General Notes

• The environmental impacts described are addressed to some degree by certification.

• A zonal management approach has been adopted based on groups of licenses known as Aquaculture Management Areas (AMAs), emergency disease zones, and Authorized Areas for Aquaculture (AAA).

References

FishSource - Salmon, Chile

Good Fish Guide, Atlantic Salmon, South America, Chile, All areas, Open net pen, marine

<u>Seafood Watch, December 2021, Atlantic and Coho Salmon, Chile, Marine Net Pens</u>

Seafood Watch, Atlantic salmon, Worldwide, Aquaculture Stewardship Council Certified Salmon Standard

Atlantic salmon			
Salmo salar	Farmed	Certified	\checkmark
Norway			
Fishery countries:			
Norway			

Environmental Notes

- Salmon production relies on wild capture fisheries for feed. The sustainability of fisheries supplying fishmeal and fish oil varies.
- There are concerns about the impact of farmed salmon escapes and disease outbreaks on wild salmonids. Escapes are a critical conservation concern in Production Areas 3, 4, 8, 9, 10 and 11. In addition, concerns have been expressed about the impact on wild wrasse populations used as cleaner fish to control sea lice.
- Impacts on water quality are localized, but there is potential for cumulative impacts in densely farmed areas. Chemical inputs of pesticides used to control sea lice are of particular concern for farmed Norwegian salmon. The use of chemical pesticides has been reduced but varies by Production Areas.

General Notes

- The environmental impacts described are addressed to some degree by certification.
- The Norwegian salmon industry has adopted a zonal approach to aquaculture management for licensing and disease management through the use of 13 Production Areas nationwide.

References:

FishSource - Salmon, Norway

Good Fish Guide - Atlantic salmon, Europe: Norway, All areas, Open net pen, marine

<u>Good Fish Guide - Atlantic salmon, Europe: Scotland and Norway, Open net pen, marine, Aquaculture Stewardship Council (ASC)</u>

Good Fish Guide - Atlantic salmon, Europe: Scotland and Norway, Open net pen, marine, Global Seafood Alliance Best Aquaculture Practices (GAA BAP) 4* and 3*

Good Fish Guide - Atlantic salmon, Europe: Scotland, Norway, Faroe Islands, Open net pen, marine, GLOBALG.A.P.

Seafood Watch, December 2021, Atlantic Salmon, Norway, Marine Net Pens

Seafood Watch, Atlantic salmon, Worldwide, Aquaculture Stewardship Council Certified Salmon Standard



Environmental Notes

- Salmon production relies on wild capture fisheries for feed. The sustainability of fisheries supplying fishmeal and fish oil varies.
- There are concerns about the impact of farmed salmon escapes and disease outbreaks on wild salmonids. In addition, concerns have been expressed about the impact on wild wrasse populations used as cleaner fish to control sea lice.
- Impacts on water quality are localized, but there is potential for cumulative impacts in densely farmed areas. Chemical inputs of pesticides used to control sea lice are of particular concern for farmed Scottish salmon. The use of chemical pesticides has declined over the last decade but varies by region.

General Notes

- The environmental impacts described are addressed to some degree by certification.
- The industry follows a zonal approach to aquaculture management with respect to planning, siting, licensing, and operations.

References:

FishSource - salmon, United Kingdom

<u>Good Fish Guide - Atlantic Salmon, Europe: UK, Scotland, Open net pen, marine</u>

Good Fish Guide - Atlantic salmon, Europe: Scotland and Norway, Open net pen, marine, Aquaculture Stewardship Council (ASC)

Good Fish Guide - Atlantic salmon, Europe: Scotland and Norway, Open net pen, marine, Global Seafood Alliance Best Aquaculture Practices (GAA BAP) 4* and 3*

<u>Good Fish Guide - Atlantic salmon, Europe: Scotland, Norway, Faroe Islands, Open net pen, marine, GLOBALG.A.P.</u>

Seafood Watch, December 2021, Atlantic Salmon, Scotland, Marine Net Pens

Seafood Watch, Atlantic salmon, Worldwide, Aquaculture Stewardship Council Certified Salmon Standard

Atlantic salmon			
Salmo salar	Farmed	Certified	\checkmark
United States			
Fishery countries:			
United States			

Environmental Notes

- Salmon rely on wild capture fisheries for feed. Marine ingredients are sourced from fisheries that currently have no serious conservation concerns.
- There are concerns about the impact of farmed salmon escapes and disease outbreaks on wild salmonids. Management systems for containment are in place to reduce the risk of escapes and have greatly improved fish containment by farms as evidenced by the very low numbers of escapees identified in Maine rivers.
- Impacts on water quality are localized, but there is potential for cumulative impacts in densely farmed areas. Chemical inputs of pesticides and antimicrobials are infrequent though usage varies by production region.

General Notes

• The environmental impacts described are addressed to some degree by certification.

References

Seafood Watch, December 2021, Atlantic Salmon, Atlantic North America, Marine Net Pens

Seafood Watch, Atlantic salmon, Worldwide, Aquaculture Stewardship Council Certified Salmon Standard



Atlantic Spanish mackerel Scomberomorus maculatus

Western Central Atlantic

Bottom trawl Handlines and pole-lines

Not certified or in a FIP

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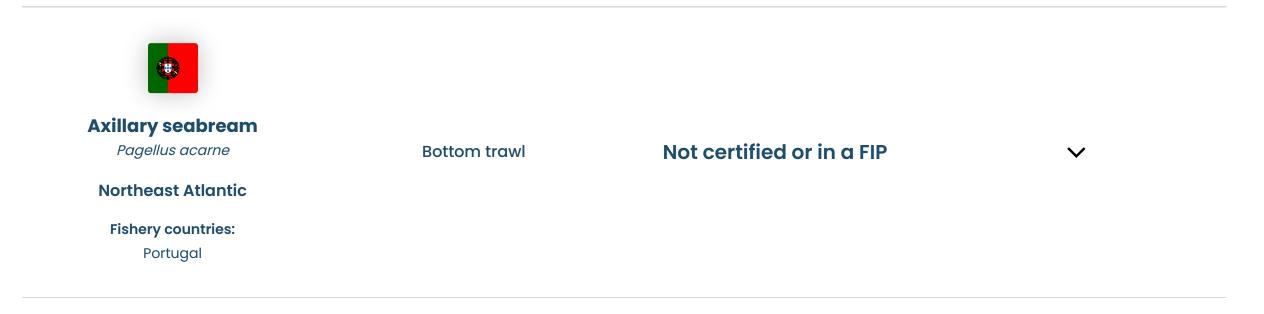
Fishery countries:

- Sharks are sometimes caught as bycatch in the handline and pole-and-line fishery but are discarded alive. Information about impacts from bottom trawl gear was not found.
- Most bycatch species are retained. Catch of bluefish and greater amberjack is a concern in the handline and pole-and-line fishery as both species are overfished. Information about impacts from bottom trawl gear was not found.
- Pole-and-line gears do not come into contact with the sea bed. Information about impacts from bottom trawl gear was not found.

General Notes

References

<u>Seafood Watch, November 2020, Spanish and King Mackerel, United States of America: Southeast Atlantic, Gulf of Mexico, Cast nets, Handlines</u> and hand-operated pole-and-lines, Trolling lines, Encircling gillnets, Gillnets and entangling nets (unspecified)



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Farmed





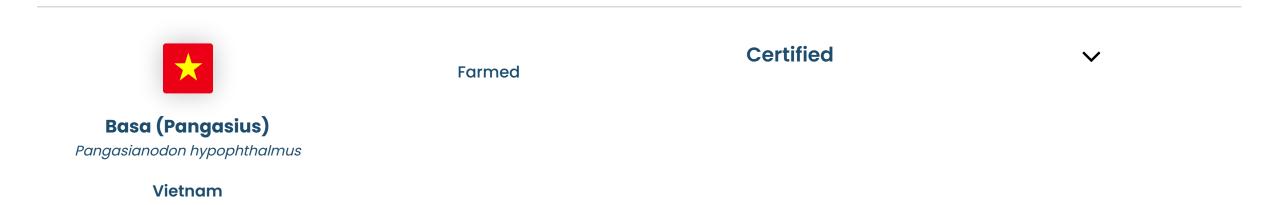
Vietnam

Fishery countries: Vietnam

Environmental Notes

• Profile not yet complete.

General Notes



- Small inputs of fishmeal are required in the diet of pangasius.
- Pangasius is native to the Mekong and therefore escaped fish are unlikely to have direct impacts on local ecosystems. However, the effects of disease on pangasius farms upon wild fish populations is unknown. Juveniles used in pangasius farming come from Vietnamese hatcheries and the trade of wild-caught broodstock is limited.
- Pollution from nutrients and organic matter occurs on a relatively small scale when compared to the wider nutrient load in the Mekong. Nevertheless, the cumulative input of effluent from pond water exchange and the disposal of pond sludge contributes to the region's pollution problem. The improper disposal of sludge waste from pond bottoms is especially problematic. Environmental issues are mitigated by the certification standards but discharge limits need improvement. Chemical inputs to Vietnamese pangasius culture are high and there are concerns about the use of antibiotics important to human health.

General Notes

- The environmental impacts described are addressed to some degree by certification.
- Pangasius aquaculture areas/zones are used to manage to siting, operations, and environmental protection.

References:

FishSource - Pangasius, Vietnam

Good Fish Guide - Basa (Pangasius bocourti & Pangasius hypophthalmus), Asia: Vietnam, Mekong Delta, Open net pen, freshwater

<u>Good Fish Guide - Basa (Pangasius bocourti & Pangasius hypophthalmus), Global, Open net pen, Aquaculture Stewardship Council (ASC)</u>

<u>Good Fish Guide - Basa (Pangasius bocourti & Pangasius hypophthalmus), Asia: Vietnam, Mekong Delta, Open net pen, freshwater, Global</u> <u>Seafood Alliance Best Aquaculture Practices (GAA BAP) 3*</u>

<u>Seafood Watch, February 2014, Pangasius, Vietnam,</u> <u>Production System – Ponds, Updated June 2021</u>

Seafood Watch, Sutchi catfish, Worldwide, Aquaculture Stewardship Council Certified Pangasius Standard

<u>Seafood Watch, Sutchi catfish, Vietnam, Global Aquaculture Alliance Certified BAP Standard: Pangasius Farms (2, 3, 4-star)</u>



Black tiger shrimp (Giant tiger prawn) Penaeus monodon

Farmed

Certified

 \checkmark

Vietnam

Environmental Notes

- Giant tiger prawns are farmed in intensive and extensive systems that may require supplementary inputs of fishmeal and fish oil from marine feed sources.
- Disease transfer between farmed and wild prawns is a concern. Although escapes do occur, giant tiger prawns are native to Vietnam, therefore lowering the risk to wild populations. However, the use of wild-caught juveniles to supply or supplement the stock on some farms may present a risk.
- Pollution from nutrients and organic matter, as well as chemical inputs, may affect local water quality. The use of illegal antibiotics is a particular concern.

General Notes

- The environmental impacts described are addressed to some degree by certification.
- Legislation supports the adoption of area-based approaches to planning and disease management.

References:

<u>FishSource - Shrimp, Viet Nam</u>

Good Fish Guide - Tiger prawns, India, Indonesia, Vietnam, Pond, improved extensive, Pond, semi-intensive

<u>Good Fish Guide - Tiger prawns, Global, Pond, freshwater, Aquaculture Stewardship Council (ASC)</u>

Good Fish Guide - Tiger prawns, Global, Pond, freshwater, Global Seafood Alliance Best Aquaculture Practices (GAA BAP) 4*

Seafood Watch, January 2023, Whiteleg Shrimp, Giant Tiger Prawn, Vietnam, Ponds

Seafood Watch, Giant tiger prawn, Worldwide, Aquaculture Stewardship Council Certified Shrimp Standard

Seafood Watch, Giant tiger prawn, Worldwide, Global Aquaculture Alliance Certified BAP Standard: Finfish and Crustacean Farms (2, 3, 4-star)

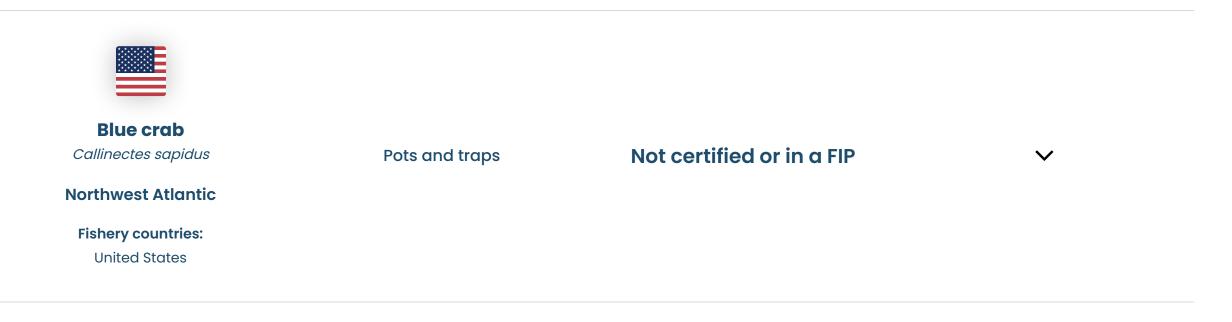


Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



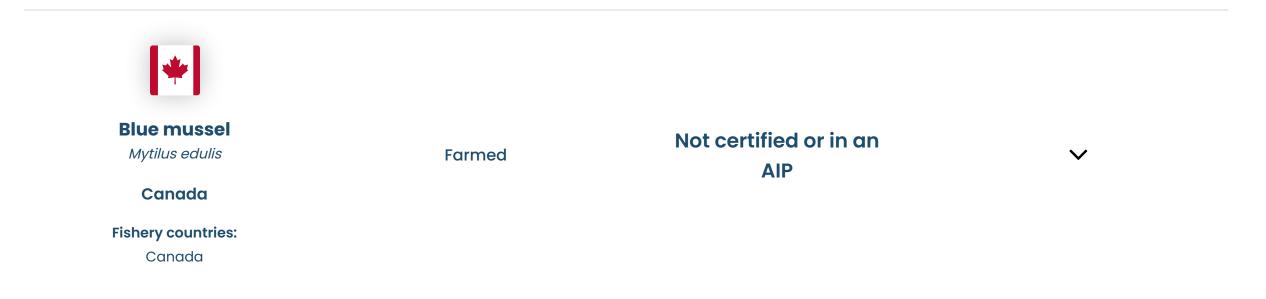
Environmental Notes

- There is a risk of entanglement in the fishing gear for sea turtles and marine mammals.
- Bycatch is considered low but there are risks to diamondback terrapins, which are air-breathers.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Seafood Watch, May 2019, Blue crab, United States, Pots and Trotline

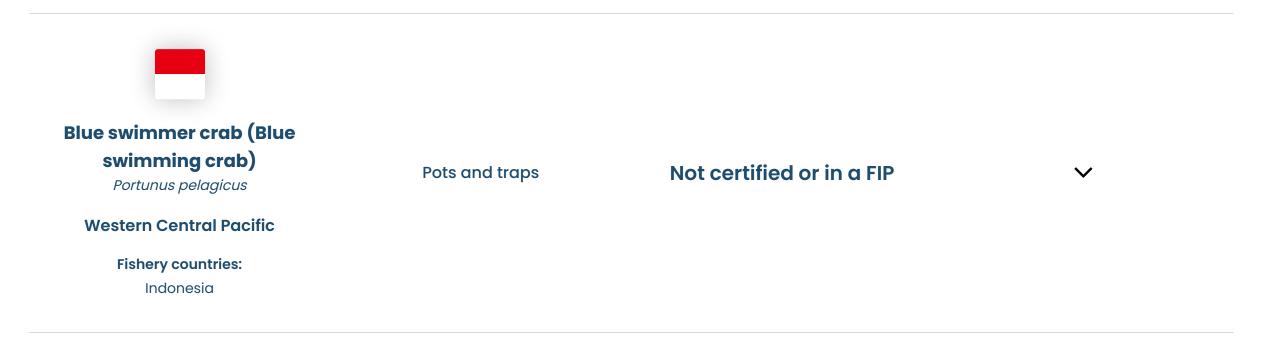


- No feed inputs are used to support farmed mussels.
- The larval phase of mussels may be transported away from farm sites. The spread of non-native mussels and unintentionally introduced species beyond their natural range may be a cause for concern. Entanglement of marine wildlife in farm gear can occur but is thought to be rare.
- There is no concern regarding pollution from nutrients or organic matter. No feed or nutrient fertilization inputs are used to support farmed mussels, and water quality has been shown to improve at farmed mussel sites.

General Notes

References

Seafood Watch, August 2020, Marine mussels, Worldwide, On and Off Bottom Culture



Environmental Notes

- There is a risk of entanglement in the fishing gear for marine mammals.
- Bycatch for this fishery includes juvenile blue swimmer crabs, other crab species, lobsters, sea snails, and fin fishes.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Seafood Watch, August 2023, Blue swimming crab, Indonesia, Bottom gillnet, Pots



Bogue

Boops boops

Northeast Atlantic

Fishery countries:

Portugal

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Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Pots and traps

Midwater trawl

Not certified or in a FIP 🛛 🗸 🗸

Bullhead catfish (Brown bullhead)

Ameiurus nebulosus

Quebec

Fishery countries:

Canada

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes

Midwater trawl Capelin Mallotus villosus Purse seine Callnets and entangling Northeast Atlantic nets Fishery countries: Iceland	certified or in a FIP 🗸	Not certified or in a FIP	Purse seine Gillnets and entangling	Capelin Mallotus villosus Northeast Atlantic Fishery countries:
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Environmental Notes

- This fishery is unlikely to have direct impacts on ETP species, though sea birds and marine mammals have the potential to interact with this fishery.
- Bycatch in this fishery is considered low.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• This fish plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.



Carp (Common carp) Cyprinus carpio	Gillnets and entangling nets	Not certified or in a FIP
Great Lakes		
Fishery countries:		
Canada		

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Environmental Notes

• Profile not yet complete.

General Notes



US

Fishery countries: United States

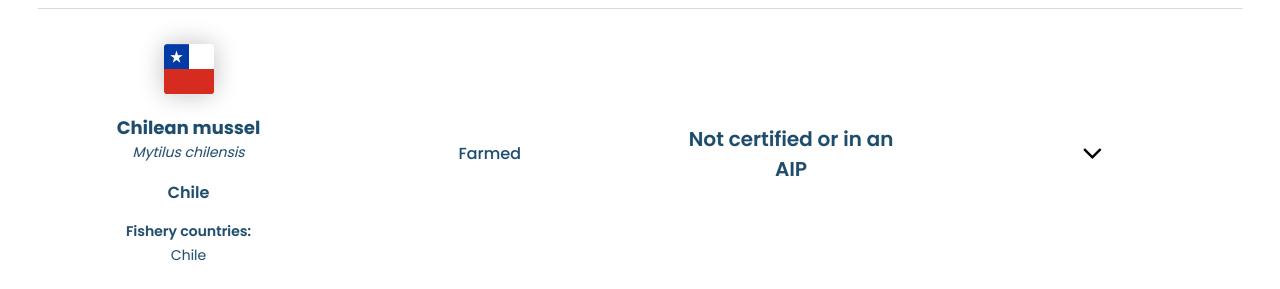
Environmental Notes

- Very low amounts of fishmeal and fish oil are used in the catfish feed, which is made primarily from agricultural crop-derived ingredients.
- Risks of escapes, competition with, and disease outbreaks to wild catfish are low.
- Environmental impacts from effluents and chemical use are minimal and well-regulated.

General Notes

References

Seafood Watch, July 2017, Channel Catfish, United States, Ponds, Updated March 2022



Environmental Notes

- No feed inputs are used to support farmed mussels.
- Only naturally occurring spat are used to stock the farm so the transportation of the larval phase of mussels away from farm sites is not a concern.
- There is no concern regarding pollution from nutrients or organic matter. No feed or nutrient fertilization inputs are used to support farmed mussels, and water quality has been shown to improve at farmed mussel sites.

General Notes

References

Good Fish Guide - Chilean mussel, South America: Chile, Culture, bottom, Culture, suspension

Seafood Watch, August 2020, Marine mussels, Worldwide, On and Off Bottom Culture

Clam (Lyrate hard clam)			
Meretrix lyrata	Dredge	Certified	\checkmark
Northwest Pacific			
Fishery countries:			
Vietnam			

Environmental Notes

• Profile not yet complete.

General Notes



Clam (Northern quahog)

Mercenaria mercenaria

Northwest Atlantic

Fishery countries: United States Rake / hand gathered /

hand netted

Not certified or in a FIP \checkmark

Environmental Notes

- This fishery is unlikely to impact ETP species.
- Bycatch for this fishery is considered low.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes.

Clam (Undulate venus)			
Paphia undulata	Dredge	Not certified or in a FIP	\checkmark
Western Central Pacific			
Fishery countries:			
Indonesia			

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes



Clams (multispecies)

Mercenaria mercenaria, Paphia undulata, Venerupis variegata

China, Indonesia, United States

Fishery countries: China, Indonesia, United States Farmed

Not certified or in an AIP

 \checkmark

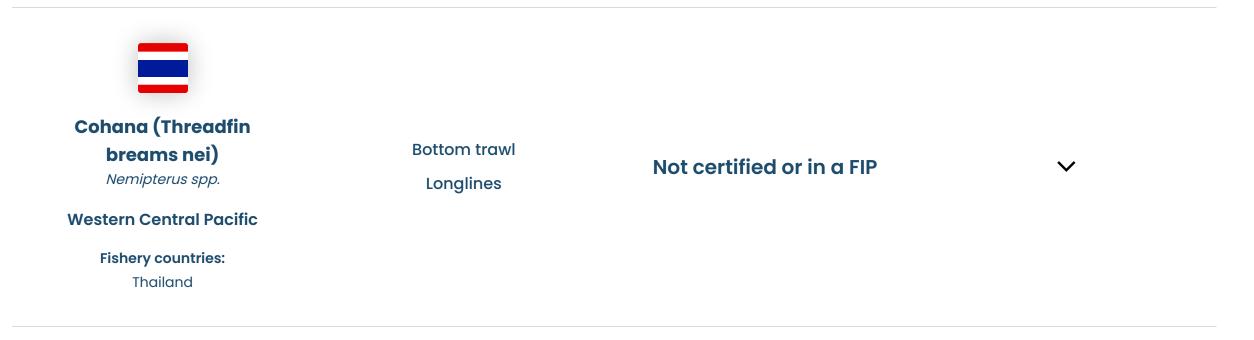
Environmental Notes

- No feed inputs are used to support farmed clams.
- There is a risk of escapes during spawning events but little evidence to suggest there are negative effects of escaped clams on ecosystems or wild populations.
- There is no little concern regarding pollution from nutrients or organic matter. No feed or nutrient fertilization inputs are used to support clams, and water quality is thought to improve at farm sites. Although effluent may be released from the hatchery or nursery phases, it is unlikely to have a negative impact on the environment.

General Notes

References

Seafood Watch, April 2018, Clams, Worldwide, Bottom and Off-Bottom Culture, Updated April 2023

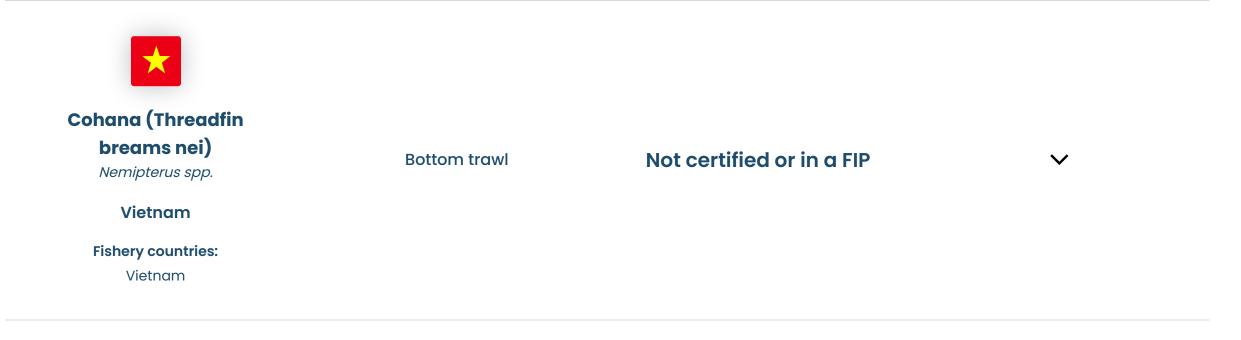


Environmental Notes

- Profile not yet complete.
- Profile not yet complete.
- Bottom trawls will directly impact on the sea bed.

General Notes

• No additional notes.



Environmental Notes

- Profile not yet complete.
- Profile not yet complete.
- Bottom trawls will directly impact on the sea bed.

General Notes

• No additional notes.



Environmental Notes

• Salmon rely on wild capture fisheries for feed. The sustainability of fisheries supplying feed used for coho salmon in Chile was not identified.

- Large escape events continue to occur in Chile, although they only affect a small proportion of farms annually. Escaped coho salmon show greater evidence of establishment in Chile than Atlantic salmon. Escaped fish have been shown to predate on wild fish, which may affect native populations. The open nature of net pen production systems means there is a risk of disease transfer to wild fish, though monitoring and detection shows low rates in the wild of pathogens and parasites of concern to salmon farming.
- Impacts on water quality are localized, but there is potential for cumulative impacts in densely farmed areas. Chemical inputs of pesticides and antimicrobials are high though usage varies by production region. There are concerns about the use of antimicrobials important to human health.

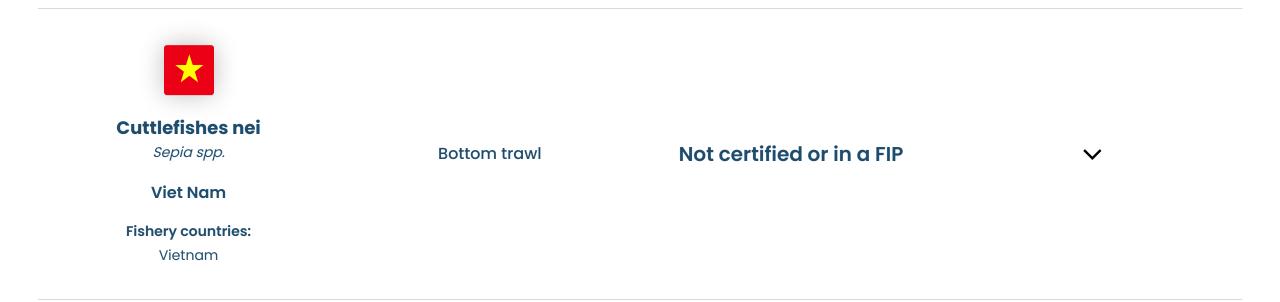
General Notes

- The environmental impacts described are addressed to some degree by certification.
- A zonal management approach has been adopted based on groups of licenses known as Aquaculture Management Areas (AMAS), emergency disease zones, and Authorized Areas for Aquaculture (AAA).

References

FishSource - Salmon, Chile

Seafood Watch, December 2021, Atlantic and Coho Salmon, Chile, Marine Net Pens



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Engraulis encrasicolus



Eastern Central Atlantic

Fishery countries: Morocco

Environmental Notes

- Bycatch of marine mammals and sharks may occur but purse seine gear has not been linked to significant bycatch of these ETP species. More information is needed to fully assess the threat to ETP species.
- Management measures are in place to limit bycatch by fisheries operating in Morocco.
- The fishery uses purse seine gear, which is unlikely to have a significant impact on the sea bed.

General Notes

• This fish plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.

References

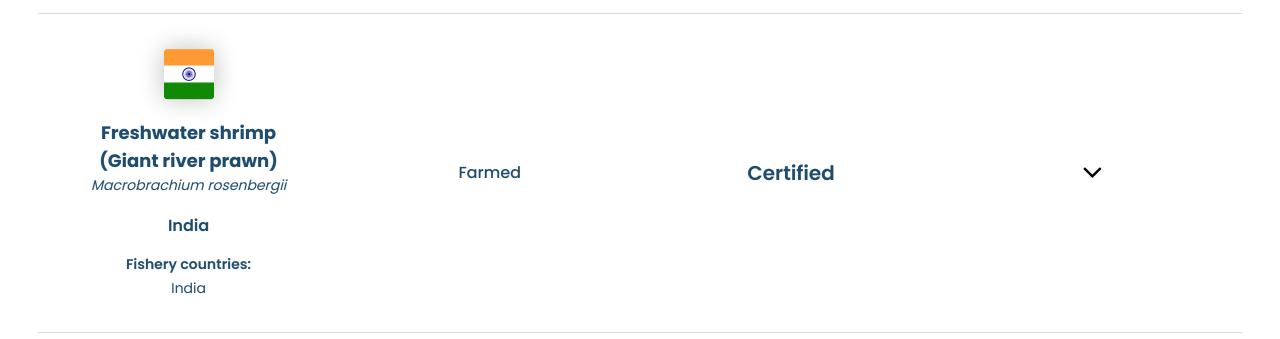
Good Fish Guide - European anchovy, Northwest Africa: Zone North, A and B: All areas, FAO 34: Atlantic, Eastern Central, Net (purse seine or ring)

European pickerel (Pike-			
perch)	Gillnets and entangling	Not cortified or in a FID	
Sander lucioperca	nets	Not certified or in a FIP	\checkmark
Central Asia			
Fishery countries:			
Kazakhstan			

• Profile not yet complete.

General Notes

• No additional notes.



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes





Freshwater shrimp (Giant river prawn) Macrobrachium rosenbergii

India

Fishery countries: India Cast nets

Not certified or in a FIP

 \checkmark

Environmental Notes

• Profile not yet complete.

General Notes

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Giant scallop (American sea scallop) Placopecten magellanicus	Dredge	Certified	\checkmark
Northwest Atlantic			
Fishery countries: Canada, United States			

• Profile not yet complete.

General Notes

• No additional notes.

Gilthead seabream			
Sparus aurata	Farmed	Certified	\checkmark
Greece and Turkey			
Fishery countries:			
Greece, Turkey			

Environmental Notes

- Bream require fishmeal and fish oil from marine feed sources in their diet. Concerns about the sustainability of feed inputs are relatively minor though they are not necessarily certified sustainable.
- Escapes are a concern and little is known about the risk of disease transfer to wild species.
- Pollution from nutrients and organic matter are a concern with open net pens. But impacts from effluent are localized. Chemical inputs are only used for health management and are applied in a controlled manner. Reports indicate responsible use, but there is a lack of data on the quantity of chemical inputs.

General Notes

• The environmental impacts described are addressed to some degree by certification.

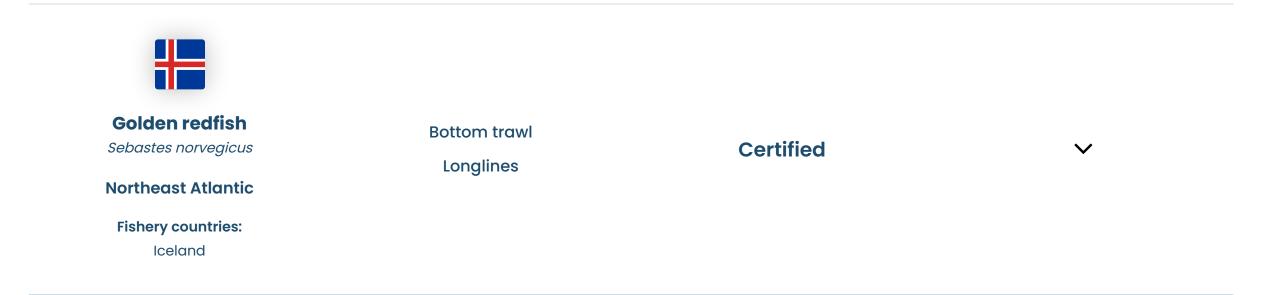
References:

<u>Good Fish Guide - Gilthead bream, European Union and Turkey, Open net pen, marine</u>

Good Fish Guide - Gilthead bream, European Union and Turkey, Open net pen, marine, Aquaculture Stewardship Council (ASC)

Good Fish Guide - Gilthead bream, European Union and Turkey, Open net pen, marine, GLOBALG.A.P.

Seafood Watch, July 2020, Gilthead Seabream, European Seabass and Meagre, European Union, Turkey, Egypt



- There are risks to seabirds, marine mammals, sharks and skates with this fishery.
- Bycatch of cod is a risk for this fishery.
- Bottom trawls will directly impact on the sea bed. Measures to protect vulnerable habitats such as cold water coral reefs are in place.

General Notes

• No additional notes.

Bottom trawl			
Gillnets and entangling	Not certified or in a FIP	\checkmark	
nets			
	Gillnets and entangling	Gillnets and entangling Not certified or in a FIP	Gillnets and entangling Not certified or in a FIP

Environmental Notes

- There are risks to ETP species with this fishery, but there is insufficient data available to assess significance.
- There is a lack of information on bycatch in this fishery.
- Bottom trawls will directly impact on the sea bed.

General Notes

• No additional notes.

Greenland halibut	Gillnets and entangling		
Reinhardtius hippoglossoides	nets	Certified	\checkmark
Northeast Atlantic	Longlines		
Fishery countries: Iceland			

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Haddock Melanogrammus aeglefinus

Northeast Atlantic

Fishery countries: Iceland, Norway Midwater trawl Gillnets and entangling nets Longlines

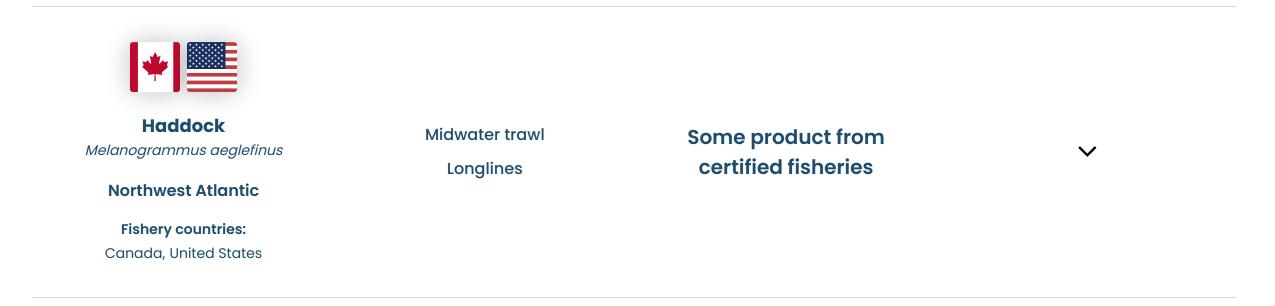
Some product from certified fisheries

 \checkmark

- There are concerns about the cumulative impacts of fisheries in this area upon the endangered species, golden redfish.
- Bycatch in this fishery is considered low. With some exceptions, all commercial species caught must be retained, recorded and landed.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes.

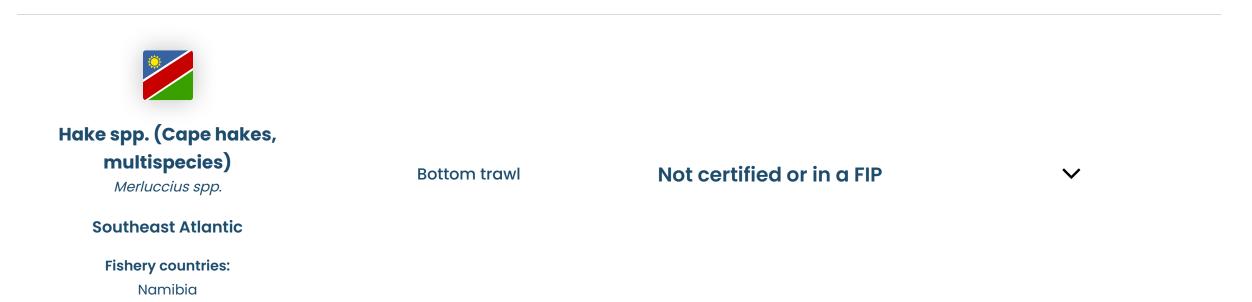


Environmental Notes

- This fishery may interact with sea turtles and marine mammals.
- Bycatch is a risk in this mixed groundfish fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes



Environmental Notes

• Profile not yet complete.

General Notes



- The impact of the squid fishery on ETP species is unknown, however, bottom trawls in India are considered a threat to sharks and sea turtles.
- There is a lack of information on bycatch in this fishery.
- Bottom trawls will directly impact on the sea bed. The fishery presents a risk to corals and other vulnerable habitats.

General Notes

• Squid plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.

References

Seafood Watch, March 2020, Squid, India/Indian Ocean, Thailand/Western Central Pacific, Indonesia/Western Central Pacific Bottom trawls, Jig, Cast nets

*:			
Indian squid Loligo duvauceli		Not certified or in a FIP	
Longo duvducen	Purse seine	Not certified or in a FIP	\checkmark
Northwest Pacific			
Fishery countries:			
China			

Environmental Notes

- The impact of the squid fishery on ETP species is unknown.
- There is a lack of information on bycatch in this fishery, but the fishery does catch other squid species that may be overexploited.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Seafood Watch, May 2020, Mitre, Indian and Swordtip squid, China, Bottom trawls, Jig, Purse seines



Jack mackerel

Bottom trawl



Trachurus picturatus

Purse seine

Not certified or in a FIP

Northeast Atlantic

Fishery countries:

Portugal

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Jonah crab Cancer borealis Pots and traps

Not certified or in a FIP

 \checkmark

Northwest Atlantic

Fishery countries: Canada, United States

Environmental Notes

- There is a risk of entanglement in the fishing gear for sea turtles and marine mammals, including the critically endangered North Atlantic right whale. Management measures are in place to reduce impacts but the effectiveness of those measures is uncertain.
- There is a lack of information about bycatch in this fishery, but it is likely to be low due to the selective nature of pots and traps.
- Although pots and traps are unlikely to have a significant impact on the sea bed, there may be a cumulative impact from the large number of traps set in the fishery.

General Notes

References

Seafood Watch, September 2022, Jonah and Atlantic Rock Crab, Canada: Northwest Atlantic, Pots

Seafood Watch, September 2022, Jonah and Atlantic rock crab, United States: Northwest Atlantic, Pots



Jumbo squid (Jumbo flying squid) Dosidicus gigas

Southeast Pacific

Fishery countries: Peru, United States Hook and line

Not certified or in a FIP

 \checkmark

Environmental Notes

- This fishery is unlikely to impact ETP species.
- Jigging is considered to be a highly selective gear and bycatch is expected to be minimal.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes.



Keta salmon (Chum salmon) Oncorhynchus keta Northeast Pacific

Fishery countries: Canada, United States

Gillnets and entangling nets

Not certified or in a FIP \checkmark

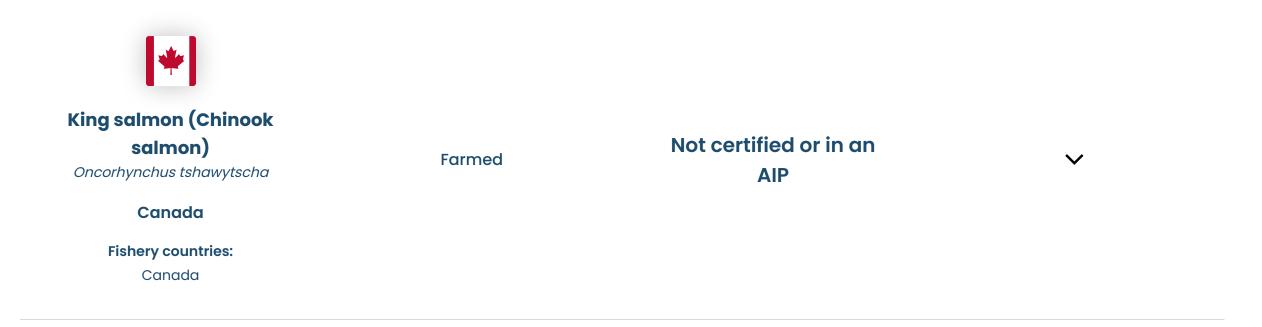
Environmental Notes

- Salmon listed as endangered in the United States is caught in this fishery.
- Other salmon species are caught as bycatch but management measures are in place.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

Reference

Seafood Watch, January 2016, Pacific Salmon, United States of America - Northeast Pacific, Trolling lines, Drift gillnets, Purse seines, Handoperated pole-and-lines, Updated July 1, 2019



Environmental Notes

- The industry's feed includes a high proportion of fishmeal and fish oil which is nearly all sourced from byproducts.
- The risk of escapes and the risk of competitive and genetic interactions with wild species are low.
- There is the potential for cumulative impacts of effluents at the waterbody scale. A majority of the Chinook salmon that is produced in British Columbia is certified to the Canadian Organic Aquaculture Standard, which prohibits the use of antibiotics in food fish.

General Notes

• The environmental impacts described are addressed to some degree by certification. Although organic certification is not formally recognised by the ODP, this product is from farms that hold certification to organic standards.

References

FishSource - Salmon, Canada

Seafood Watch, June 2019, Chinook salmon, British Columbia, Canada, Marine Net Pens



King mackerel Scomberomorus cavalla

Bottom trawl

Not certified or in a FIP

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 \checkmark

Fishery countries: United States

Western Central Atlantic

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Lobster (American lobster) Homarus americanus

Northwest Atlantic

Fishery countries: Canada, United States Pots and traps

Not certified or in a FIP

- There is a risk of entanglement in the fishing gear for sea turtles and marine mammals, including the critically endangered North Atlantic right whale. Management measures are in place to reduce impacts but the effectiveness of those measures is uncertain.
- Bycatch is generally low. Some species including crab species are retained.
- Although pots and traps are unlikely to have a significant impact on the sea bed, there may be a cumulative impact from the large number of traps set in the fishery.

General Notes

References

Seafood Watch, September 2022, American Lobster, Canada: Northwest Atlantic, Pots

Seafood Watch, September 2022, American lobster, United States: Northwest Atlantic, Pots



Long-finned squid			
Loligo pealeii	Bottom trawl	Not certified or in a FIP	\checkmark
Northwest Atlantic			
Fishery countries:			
United States			

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Lumpfish Cyclopterus lumpus

Gillnets and entangling

Not certified or in a FIP



Northeast Atlantic

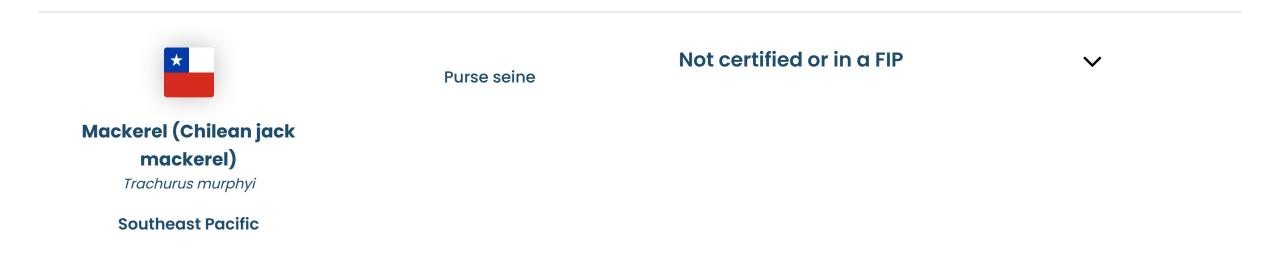
nets

Fishery countries: Iceland, Sweden

Environmental Notes

• Profile not yet complete.

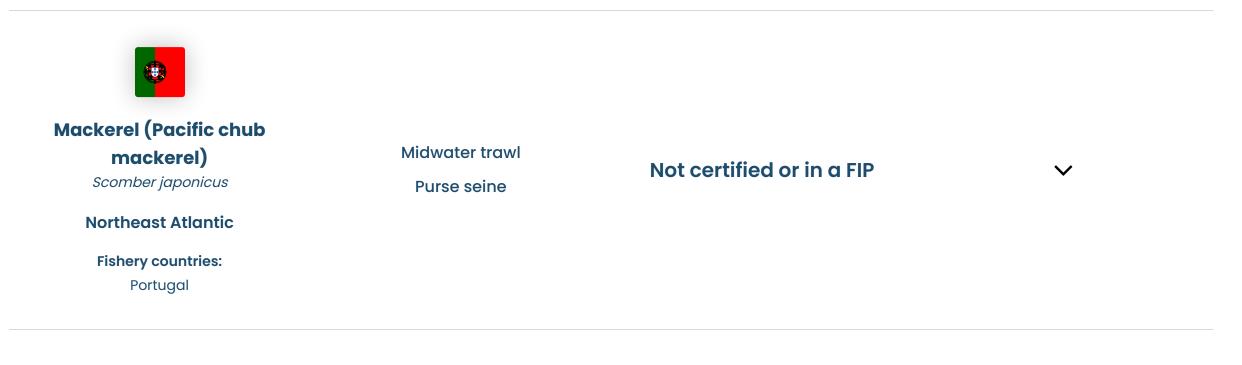
General Notes



- There is a lack of information about interactions between Chilean purse seiners and ETP species.
- Bycatch for this fishery is considered low.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• This fish plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.

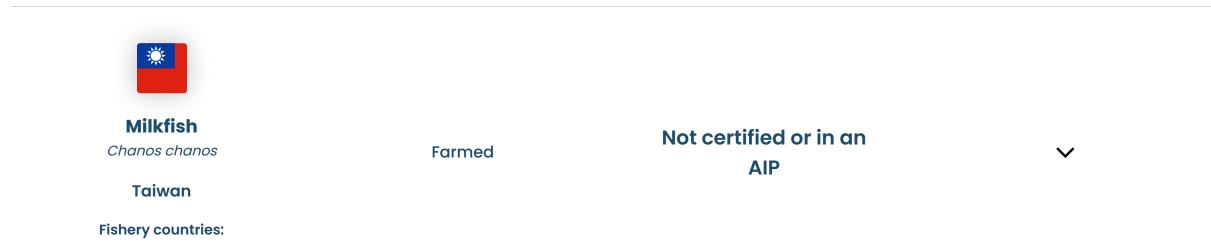


Environmental Notes

• Profile not yet complete

General Notes

• No additional notes.



Environmental Notes

• Profile not yet complete

General Notes

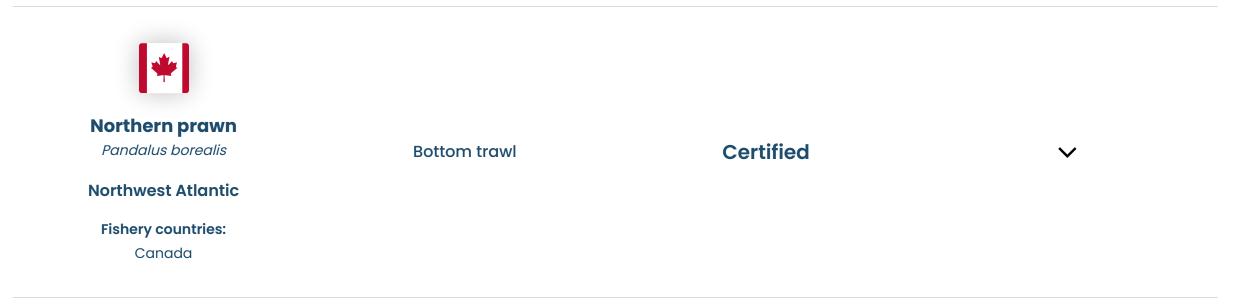


- No feed inputs are used to support farmed mussels.
- The larval phase of mussels may be transported away from farm sites. The spread of non-native musels and unintentionally introduced species beyond their natural range may be a cause for concern.
- There is no concern regarding pollution from nutrients or organic matter. No feed or nutrient fertilization inputs are used to support farmed mussels, and water quality has been shown to improve at farmed mussel sites.

General Notes

References

Seafood Watch, August 2020, Marine mussels, Worldwide, On and Off Bottom Culture



Environmental Notes

- The only ETP species recorded in the catch are wolffish. Annual catches are low and the shrimp fishery is unlikely to hinder their recovery.
- Bycatch of non-target species is considered low and mitigation measures are in place.
- Bottom trawls will directly impact on the sea bed. But, management measures are in place to limit impacts on vulnerable habitats.

General Notes

• This species plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.



Octopus spp.

Octopus spp.

Bottom trawl

Not certified or in a FIP

Western Central Pacific

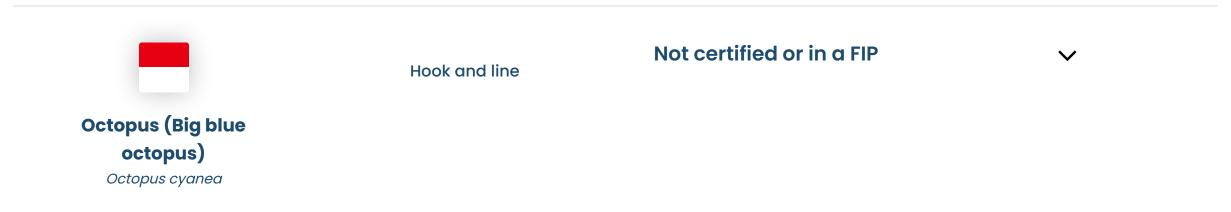
Fishery countries:

Vietnam

Environmental Notes

• Profile not yet complete.

General Notes



Western Central Pacific

Fishery countries: Indonesia

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.

Image: Strain Central and Northeast Atlantic Fishery countries: Morocco	Not certified or in a FIP	
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Environmental Notes

- Information regarding impacts on ETP species in the Moroccan trawl fishery is limited but there are risks to sharks, skates, sea turtles, and marine mammals. Impacts caused by pot gear is likely to be low.
- Bycatch of European hake and common cuttlefish in the trawl fishery is a concern due to overfishing of those species.
- Bottom trawls will directly impact on the sea bed, while pots have a low impact.

General Notes

References

Seafood Watch, March 2021, Common octopus, Eastern Central and Northeast Atlantic, Bottom trawls, Traps (unspecified), Pots, Jig



Octopus (Common octopus) Octopus vulgaris

Eastern Indian Ocean

Fishery countries: Thailand

Bottom trawl

Not certified or in a FIP

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Environmental Notes

• Profile not yet complete.

General Notes



Octopus (Common octopus) Octopus vulgaris

Pots and traps

Not certified or in a FIP

 \checkmark

Mediterranean and Black Sea

Fishery countries: Spain

Environmental Notes

- This fishery is unlikely to have significant impacts on ETP species.
- The risk of bycatch is considered low for octopus caught using pots and trap.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Seafood Watch, March 2021, Common octopus, Eastern Central and Northeast Atlantic, Bottom trawls, Traps (unspecified), Pots, Jig

Octopus (Common			
octopus)	Pots and traps	Not certified or in a FIP	\checkmark
Octopus vulgaris			
Northeast Atlantic			
Fishery countries:			
Portugal, Spain			

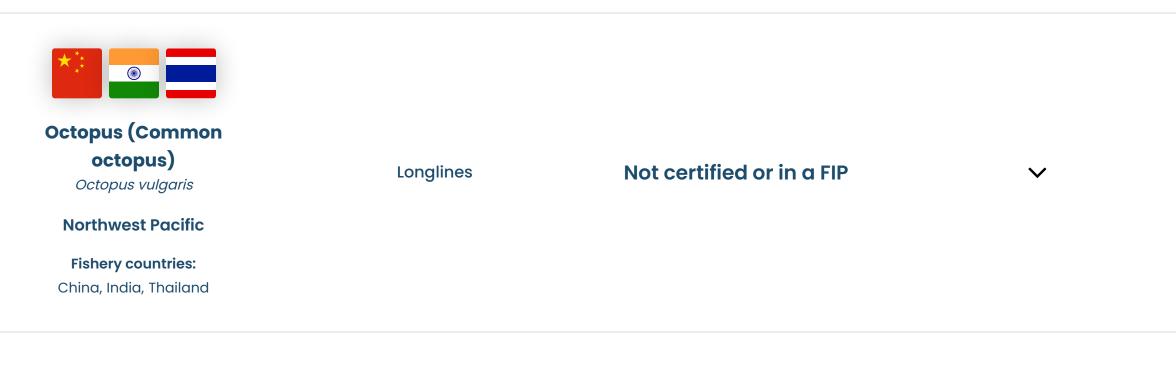
Environmental Notes

- This fishery is unlikely to have significant impacts on ETP species.
- The risk of bycatch is considered low for octopus caught using pots and trap.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Seafood Watch, March 2021, Common octopus, Eastern Central and Northeast Atlantic, Bottom trawls, Traps (unspecified), Pots, Jig



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.

Octopus (Common			
octopus)			
Octopus vulgaris	Pots and traps	Not certified or in a FIP	\checkmark
e etep de valgane			
Western Central Pacific			
Fishery countries:			
Philippines			

Environmental Notes

- This fishery is unlikely to have significant impacts on ETP species.
- There is a lack of information on bycatch in this fishery but pots and traps are selective gears.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes.

Pacific cod Gadus macrocephalus	Bottom trawl Longlines	Certified	\checkmark
Northeast Pacific			
Fishery countries: United States			

Environmental Notes

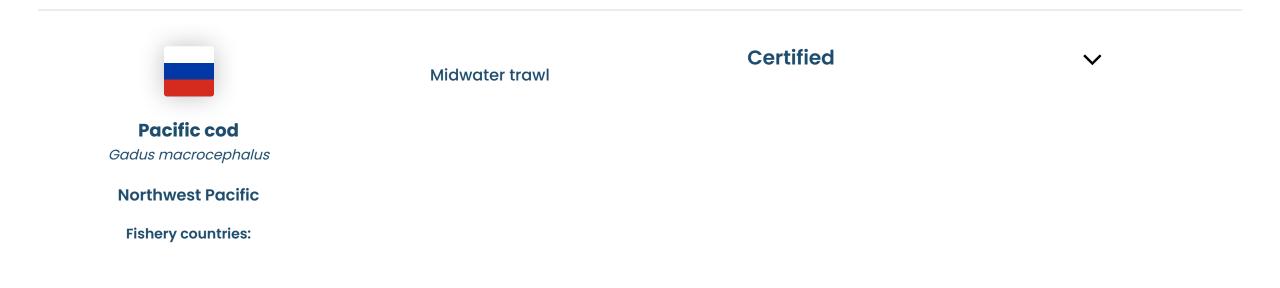
- Species of concern include sharks and skates.
- Pacific cod is caught in a multispecies groundfish fishery.
- Bottom trawls will directly impact on the sea bed. Longline fisheries have much lower impact on habitats than bottom-towed gear such as trawls. However, if they are bottom longlines they can have negative impacts on vulnerable habitats.

General Notes

References

Seafood Watch, July 2014, Groundfish, US West Coast Grenadier Pacific cod Skates, Bottom trawls, Bottom longlines, Deep-set longlines

Seafood Watch, April 2016, Groundfish, British Columbia, Canada: Northeast Pacific Ocean, Bottom trawls, Jig, Longlines (shallow-set & deepset), Set longlines, Trolling lines



• Profile not yet complete.

General Notes

• No additional notes.



Environmental Notes

- No feed inputs are used to support farmed oysters.
- The larval phase of oysters may be transported away from farm sites. The spread of non-native oysters and unintentionally introduced species beyond their natural range may be a cause for concern.
- There is no concern regarding pollution from nutrients or organic matter. No feed or chemical inputs are used to support farmed oysters.

General Notes

References:

Seafood Watch, October 2020, Oysters, Worldwide, Bottom and Off-Bottom Culture



Pacific halibut Hippoglossus stenolepis

Longlines

Some product from certified fisheries

 \checkmark

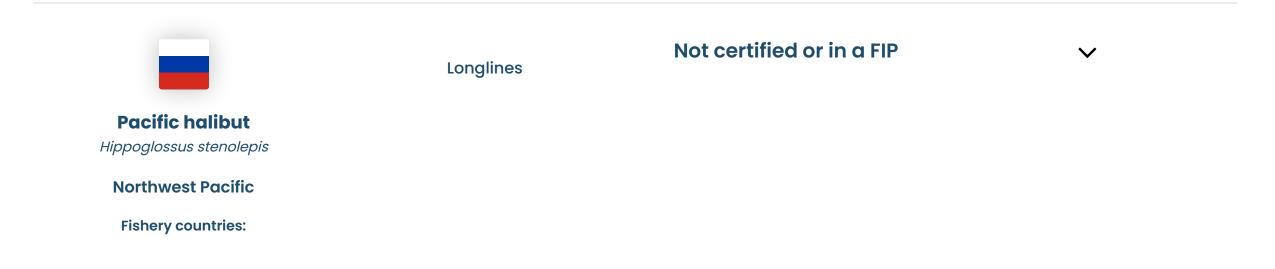
Northeast Pacific

Fishery countries: Canada

Environmental Notes

• Profile not yet complete.

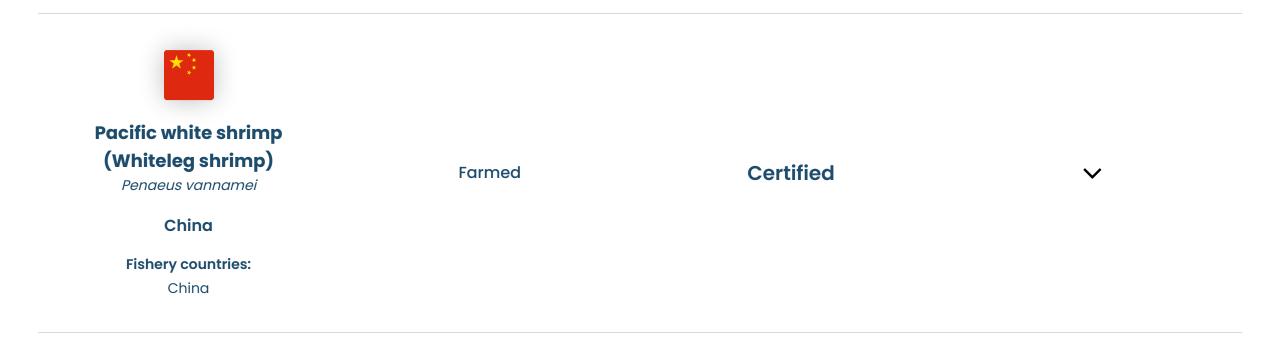
General Notes



• Profile not yet complete.

General Notes

• No additional notes.



Environmental Notes

- Fishmeal and fish oil from marine feed sources are used. The sustainability of feed inputs is unknown.
- Disease transfer between farmed and wild prawns is high. Information on escapes is limited. Whiteleg shrimp are not native to China and there is potential for ecological impacts from escapes. Broodstock are sourced directly from SPF-certified hatcheries in Hawaii and risk of escape during transshipment is low.
- Ineffective chemical regulations have resulted in the ongoing illegal use of antibiotics and antimicrobials.

General Notes

The environmental impacts described are addressed to some degree by certification.

References

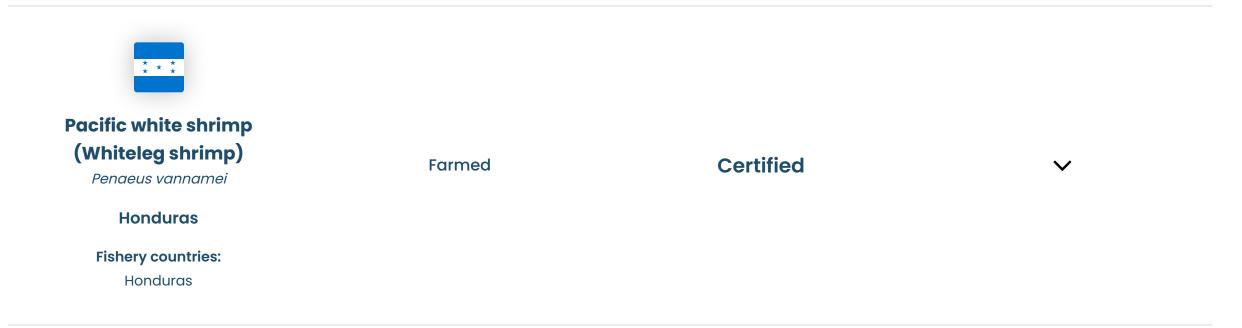
<u>Good Fish Guide - King prawn, Global, Pond, freshwater, Aquaculture Stewardship Council (ASC)</u>

Good Fish Guide - King prawn, Global, Global Seafood Alliance Best Aquaculture Practices (GAA BAP) 2* and 3*

Seafood Watch, December 2015, Whiteleg Shrimp, China, Ponds

Seafood Watch, Whiteleg shrimp, Worldwide, Aquaculture Stewardship Council Certified Shrimp Standard

Seafood Watch, Whiteleg shrimp, Worldwide, Global Aquaculture Alliance Certified BAP Standard: Finfish and Crustacean Farms (2, 3, 4-star)



- The use of wild fish in Honduran shrimp feed inputs is low.
- Disease transfer between farmed and wild prawns is a concern for the region but the low stocking densities used in Honduras help to reduce the risk of outbreaks. Information on escapes from shrimp farms is limited. Whiteleg shrimp are native to Honduras, therefore lowering the environmental risk from escapes, however there is still potential for interbreeding with wild shrimp populations to result in reduced genetic fitness.

• Feed and chemical inputs are limited, thereby reducing the risk of impacts on local water quality. Impacts vary depending on farm practices including the frequency of waste discharge from ponds. Some farms have been found to exceed regulatory limits for waste discharge.

General Notes

• The environmental impacts described are addressed to some degree by certification.

References:

<u>Good Fish Guide - King prawn, South America: Ecuador and Honduras, Pond, semi-intensive</u>

<u>Good Fish Guide - King prawn, Global, Pond, freshwater, Aquaculture Stewardship Council (ASC)</u>

Good Fish Guide - King prawn, Global, Global Seafood Alliance Best Aquaculture Practices (GAA BAP) 2* and 3*

Seafood Watch, July 2015, Farmed Whiteleg Shrimp, Honduras, Ponds

Seafood Watch, Whiteleg shrimp, Worldwide, Aquaculture Stewardship Council Certified Shrimp Standard

Seafood Watch, Whiteleg shrimp, Worldwide, Global Aquaculture Alliance Certified BAP Standard: Finfish and Crustacean Farms (2, 3, 4-star)

Pacific white shrimp			
(Whiteleg shrimp)	Farmed	Certified	\checkmark
Penaeus vannamei	raimed	Certified	v
India			
Fishery countries:			
India			

Environmental Notes

- Fishmeal and fish oil from marine feed sources are used. Certification criteria encourage the use of responsibly sourced marine products in feed. But there is little transparency on the ingredients used in feed across the sector.
- Disease transfer between farmed and wild prawns is a concern but infrequent water exchange on whiteleg shrimp farms moderates the risk. Whiteleg shrimp are not native to India and there is potential for ecological impacts from escapes but there is no evidence of the species becoming established in the wild.
- Pollution from nutrients and organic matter, as well as chemical inputs, may affect local water quality. Waste discharge from whiteleg shrimp ponds is typically limited to once per production cycle. The use of antibiotics important to human health and continued use of illegal antibiotics is a concern.

General Notes

- The environmental impacts described are addressed to some degree by certification.
- The aquaculture industry is currently managed under a farm-based approach. Shrimp farms are managed by the Coastal Aquaculture Authority (CAA) Act and Guidelines, which acknowledge the importance of zonal management.

References

FishSource - Shrimp, India

<u>Good Fish Guide - King prawn, Asia: Vietnam, India and Indonesia, Pond, semi-intensive and intensive</u>

<u>Good Fish Guide - King prawn, Global, Pond, freshwater, Aquaculture Stewardship Council (ASC)</u>

<u>Good Fish Guide - King prawn, Global, Global Seafood Alliance Best Aquaculture Practices (GAA BAP) 2* and 3*</u>

<u>Seafood Watch, October 2021, Whiteleg Shrimp, Giant Tiger Prawn, India, Ponds</u>

Seafood Watch, Whiteleg shrimp, Worldwide, Aquaculture Stewardship Council Certified Shrimp Standard

Seafood Watch, Whiteleg shrimp, Worldwide, Global Aquaculture Alliance Certified BAP Standard: Finfish and Crustacean Farms (2, 3, 4-star)

Pacific white shrimp			
(Whiteleg shrimp)	Farmed	Certified	\checkmark
Penaeus vannamei			
Indonesia			
Fishery countries:			
Indonesia			

- Fishmeal and fish oil from marine feed sources are used. Certification criteria encourage the use of responsibly sourced marine products in feed. But there is little transparency on the ingredients used in feed across the sector.
- Disease transfer between farmed and wild prawns is a concern. Whiteleg shrimp are not native to Indonesia and there is potential for ecological impacts from escapes but there is no evidence of the species becoming established in the wild.
- Pollution from nutrients and organic matter, as well as chemical inputs, may affect local water quality and cumulative impacts across a region may occur. The use of antibiotics important to human health and continued use of illegal antibiotics is a concern.

General Notes

- The environmental impacts described are addressed to some degree by certification.
- Legislation on zonal planning that is relevant to aquaculture does exist. The government has produced a coastal and marine spatial plan that identifies multiple aquaculture zones.

References:

FishSource - Shrimp, Indonesia

<u>Good Fish Guide - King prawn, Asia: Vietnam, India and Indonesia, Pond, semi-intensive and intensive</u>

<u>Good Fish Guide - King prawn, Global, Pond, freshwater, Aquaculture Stewardship Council (ASC)</u>

Good Fish Guide - King prawn, Global, Global Seafood Alliance Best Aquaculture Practices (GAA BAP) 2* and 3*

<u>Seafood Watch, December 2015, Giant Tiger Prawn, Whiteleg Shrimp, Indonesia, Ponds</u>

Seafood Watch, Whiteleg shrimp, Worldwide, Aquaculture Stewardship Council Certified Shrimp Standard

Seafood Watch, Whiteleg shrimp, Worldwide, Global Aquaculture Alliance Certified BAP Standard: Finfish and Crustacean Farms (2, 3, 4-star)



Pacific white shrimp (Whiteleg shrimp) Penaeus vannamei	Farmed	Certified	\checkmark
Thailand			
Fishery countries: Thailand			

Environmental Notes

- Fishmeal and fish oil from marine feed sources are used. Certification criteria encourage the use of responsibly sourced marine products in feed. But there is little transparency on the ingredients used in feed across the sector.
- Disease transfer between farmed and wild prawns is a concern but infrequent water exchange on whiteleg shrimp farms moderates the risk. Whiteleg shrimp are not native to Thailand and there is potential for ecological impacts from escapes but there is no evidence of the species becoming established in the wild.
- Pollution from nutrients and organic matter, as well as chemical inputs, may affect local water quality. Impacts on water quality vary depending on the frequency of waste discharge from ponds. Antibiotic usage in the Thai industry has declined but there is evidence of the use of antimicrobials important to human health.

General Notes

- The environmental impacts described are addressed to some degree by certification.
- Shrimp farming is restricted to designated shrimp aquaculture zones, however, the cumulative impact of multiple farms does not appear to have been considered.

References:

<u>FishSource - Shrimp, Thailand</u>

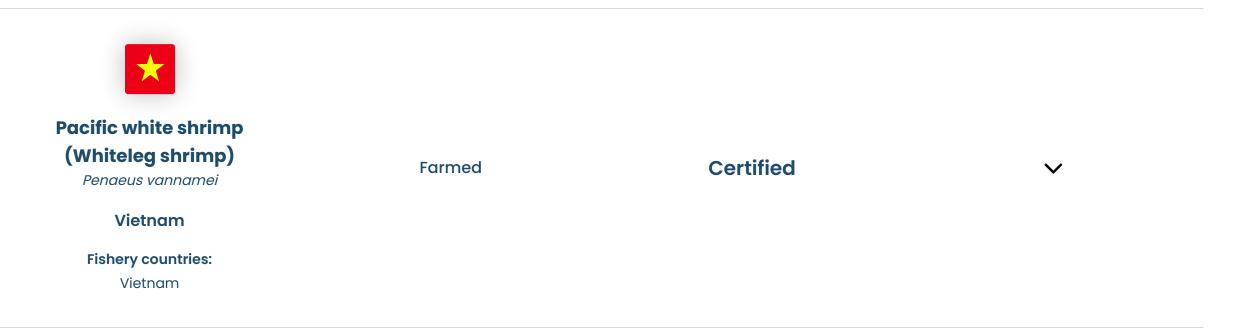
<u>Good Fish Guide - King prawn, Global, Pond, freshwater, Aquaculture Stewardship Council (ASC)</u>

<u>Good Fish Guide - King prawn, Global, Global Seafood Alliance Best Aquaculture Practices (GAA BAP) 2* and 3*</u>

Seafood Watch, July 2020, Whiteleg Shrimp, Thailand, Intensive ponds

Seafood Watch, Whiteleg shrimp, Worldwide, Aquaculture Stewardship Council Certified Shrimp Standard

Seafood Watch, Whiteleg shrimp, Worldwide, Global Aquaculture Alliance Certified BAP Standard: Finfish and Crustacean Farms (2, 3, 4-star)



Environmental Notes

- Fishmeal and fish oil from marine feed sources are used. Certification criteria encourage the use of responsibly sourced marine products in feed. But there is little transparency on the ingredients used in feed across the sector.
- Disease transfer between farmed and wild prawns is a concern but infrequent water exchange on whiteleg shrimp farms moderates this risk. Whiteleg shrimp are not native to Vietnam and there is potential for ecological impacts from escape but there is no evidence of the species becoming established in the wild.
- Pollution from nutrients and organic matter, as well as chemical inputs, may affect local water quality. Intensive shrimp farms with higher nutrient inputs produce more waste and are associated with greater concerns around pollution. The use of antimicrobials important to human health and evidence of continued use of illegal antimicrobials is a concern.

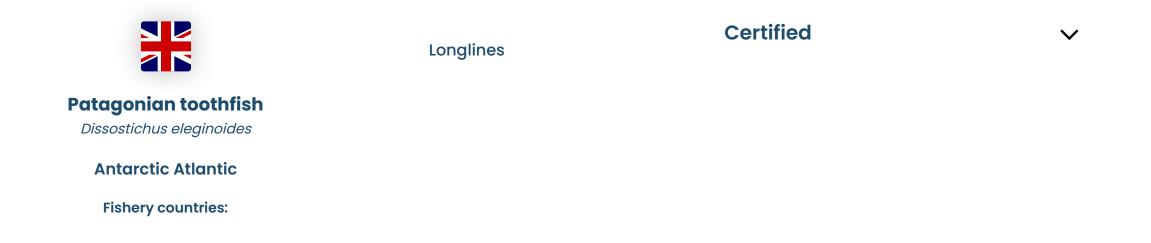
General Notes

- The environmental impacts described are addressed to some degree by certification.
- The aquaculture industry is currently managed under a farm-based approach

References:

FishSource - Shrimp, Vietnam

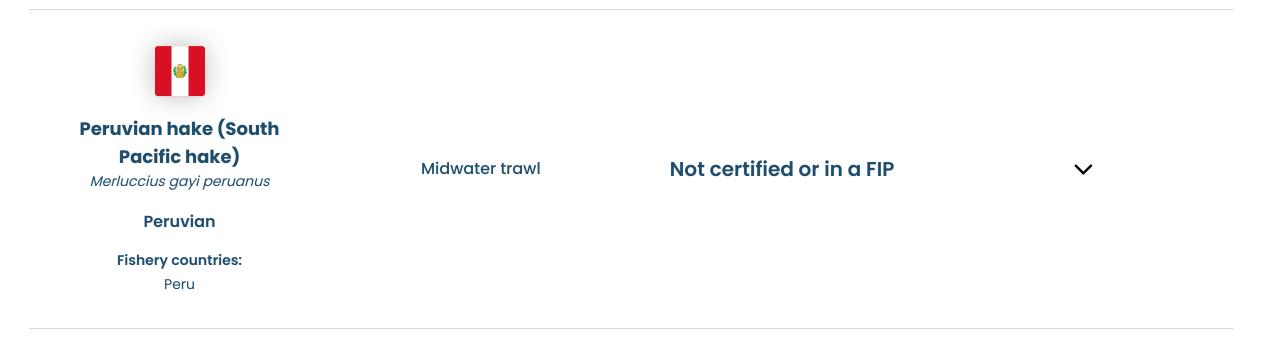
Good Fish Guide – King prawn, Asia: Vietnam, India and Indonesia, Pond, semi-intensive and intensive Good Fish Guide – King prawn, Global, Pond, freshwater, Aquaculture Stewardship Council (ASC). Good Fish Guide – King prawn, Global, Global Seafood Alliance Best Aquaculture Practices (GAA BAP) 2* and 3* Seafood Watch, January 2023, Whiteleg Shrimp, Giant Tiger Prawn, Vietnam, Ponds Seafood Watch, Whiteleg shrimp, Worldwide, Aquaculture Stewardship Council Certified Shrimp Standard Seafood Watch, Whiteleg shrimp, Worldwide, Global Aquaculture Alliance Certified BAP Standard: Finfish and Crustacean Farms (2, 3, 4-star).



• Profile not yet complete.

General Notes

• No additional notes

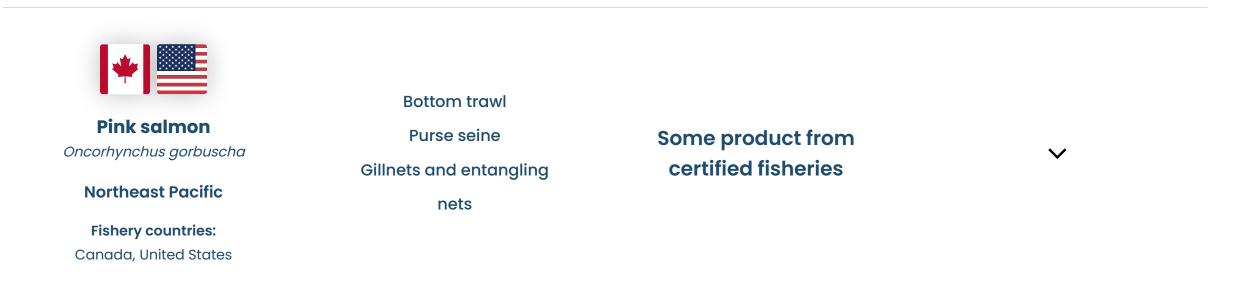


Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Environmental Notes

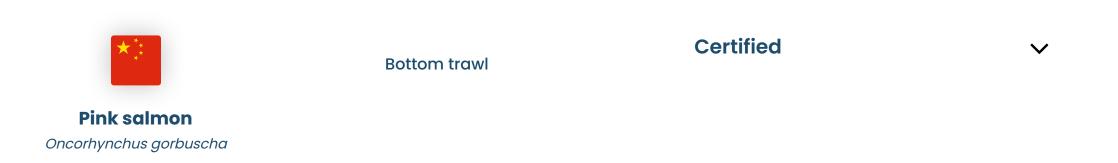
- While encounters with marine mammals and birds have been documented in this fishery, the impact on ETP species is not thought to be significant.
- Bycatch rates are generally low. Catches of other salmon species are accounted for in the pink salmon management.
- Most fishing gear used to capture salmon is operated in the water column and is unlikely to have a significant impact on the benthic habitat.

General Notes

References

Good Fish Guide - Pink salmon, Alaska, Pacific, Northeast, Net (gill or fixed; beach seine), Marine Stewardship Council (MSC)

Good Fish Guide - Pink salmon, Alaska, Pacific, Northeast, Net (purse seine or ring), Marine Stewardship Council (MSC)



Fishery countries: China

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.

*			
Pollock (Saithe)	Gillnets and entangling		
Pollachius virens	nets	Not certified or in a FIP	\checkmark
Northwest Atlantic	Longlines		
Fishery countries:			
Canada			

Environmental Notes

- There are concerns about potential interactions with ETP species such as sea turtles, skates, wolffish, and marine mammals.
- Bycatch is a risk for this fishery.
- Gillnets and longlines can have an impact on the sea bed, but impacts of the fishery are not well understood.

General Notes

References

Seafood Watch, September 2015, Atlantic Cod, Atlantic Pollock, Northwest Atlantic Canada, Bottom Trawl, Bottom Longline, Gillnet



Rainbow smelt Osmerus mordax Midwater trawl Gillnets and entangling

Not certified or in a FIP



Northwest Atlantic	
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wast Atlaustic

nets

Fishery countries:

Canada

Environmental Notes

- This fishery is unlikely to impact ETP species.
- There is a lack of information on bycatch in this fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Seafood Watch, February 2015, Lake trout, Lake whitefish, Rainbow smelt, Walleye and Yellow perch, Canada and U.S. Michigan, New York, Ohio, Pennsylvania (Lake Erie) Set aillasta Midwater trawla Parriera february voira corrale etc.

Set gillnets, Midwater trawls, Barriers, fences, weirs, corrals, etc.

Farmed	Certified	\checkmark
	Farmed	Farmed Certified

- Fishmeal and fish oil from marine feed sources are used but the reliance on fish meal has reduced over time. The sustainability of wild capture fisheries varies.
- The risk of escapes varies by production system and is higher for net pen systems compared to raceway systems, with large escape events from net pens documented in the past. Rainbow trout is not native to the provinces where it is farmed but has become established as a result of stocking programs. The risk of competitive or genetic impacts on wild fish populations is low to moderate. Disease issues are not a major concern because of regulatory controls and best management practices.
- There is potential for effluent discharge to have harmful effects at a site level as well as cumulative effects to receiving waterbodies, but data suggest that management and regulation have been effective in reducing nutrient concerns related to effluent. Use of antibiotics including those important to human health is known to occur but may be low.

General Notes

• The environmental impacts described are addressed to some degree by certification.

References

<u>Seafood Watch, December 2018, Rainbow trout, Canada,</u> <u>Freshwater net pens. Raceways, Tanks</u>



Environmental Notes

- Fishmeal and fish oil from marine feed sources are used but the reliance on fish meal has reduced over time. The sustainability of wild capture fisheries varies.
- The risk of escapes varies by production system and is higher for net pen systems compared to raceway systems, with large escape events from net pens documented in the past. Rainbow trout is not native to the provinces where it is farmed but has become established as a result of stocking programs. The risk of competitive or genetic impacts on wild fish populations is low to moderate. Disease issues are not a major concern because of regulatory controls and best management practices.
- There is potential for effluent discharge to have harmful effects at a site level as well as cumulative effects to receiving waterbodies, but data suggest that management and regulation have been effective in reducing nutrient concerns related to effluent. Use of antibiotics including those important to human health is known to occur but may be low.

General Notes

References

<u>Seafood Watch, December 2018, Rainbow trout, Canada,</u> <u>Freshwater net pens. Raceways, Tanks</u>



Red crab Chaceon quinquedens

Northwest Atlantic

Fishery countries: United States Pots and traps

Not certified or in a FIP

 \checkmark

Environmental Notes

- Profile not yet complete.
- Red crab is caught as a bycatch species.
- Profile not yet complete.

General Notes

• No additional notes.

*			
Red crab (Southwest Atlantic red crab) Chaceon notialis	Bottom trawl Pots and traps	Some product from FIP fisheries	\checkmark
Southwest Atlantic			
Fishery countries:			
Uruguay			

Environmental Notes

- There is no information about the impact of the fishery on ETP species. Interactions with sea turtles, rays, and seabirds may occur.
- There is a lack of information on bycatch in this fishery.
- Impacts vary by gear type. Pots and traps are unlikely to have a significant impact on the sea bed.

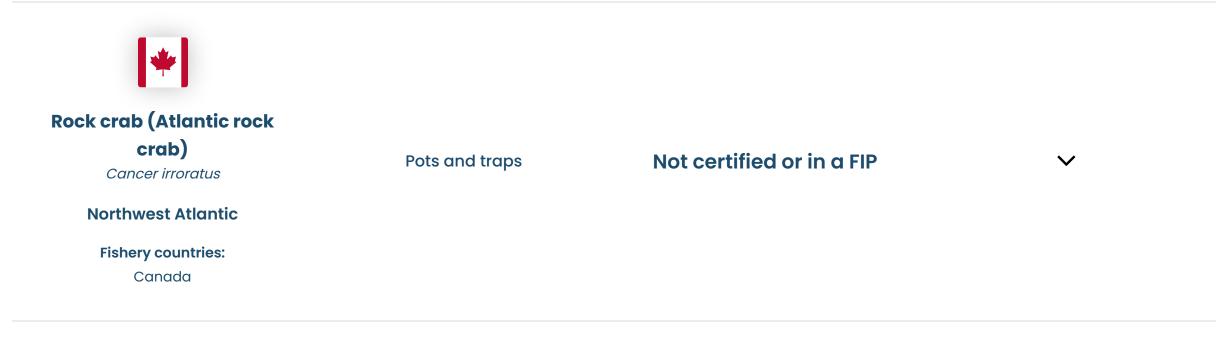
General Notes

• The pot and trap component of the fishery is part of the Uruguay deep-sea red crab - trap FIP.

References

Bureau Veritas, April 2020, Deep Sea Red Crab Southwestern Atlantic Ocean, Announcement Comment Draft Report

<u>FisheryProgress - Uruguay deep-sea red crab - trap</u>



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes

Sardine			
Sardina pilchardus	Purse seine	Certified	\checkmark
East Atlantic			
Fishery countries:			
France			

Environmental Notes

- This fishery is unlikely to have significant direct impacts on ETP species.
- Bycatch in this fishery is considered low.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• This fish plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.



Environmental Notes

- Available data on fishery interactions with ETP species is still limited. But impacts are thought likely to be low.
- Impacts on bycatch species are likely to be low.
- This fishery is unlikely to have a significant impact on the sea bed.

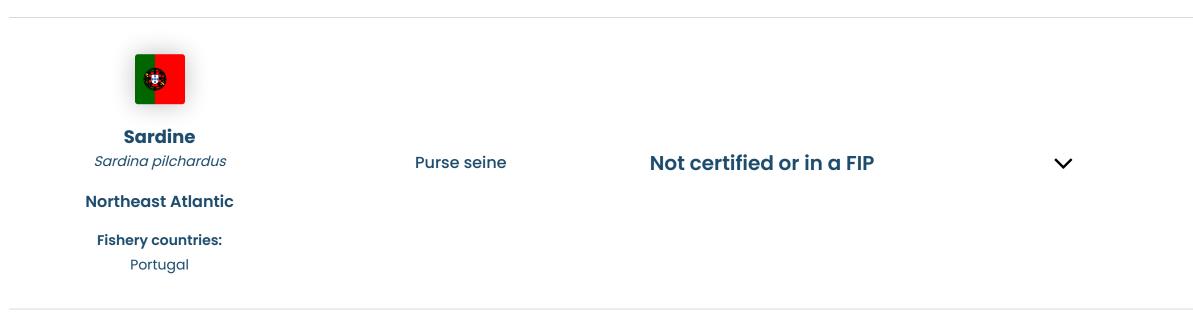
General Notes

• This fish plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.

References

Good Fish Guide - Sardine, Northwest Africa: Zone A and B (Central), Net (pelagic trawl; purse seine)

Seafood Watch, January 2023, Sardine, anchovy, sardinella, mackerel, Morocco: Eastern Central Atlantic, Purse seines

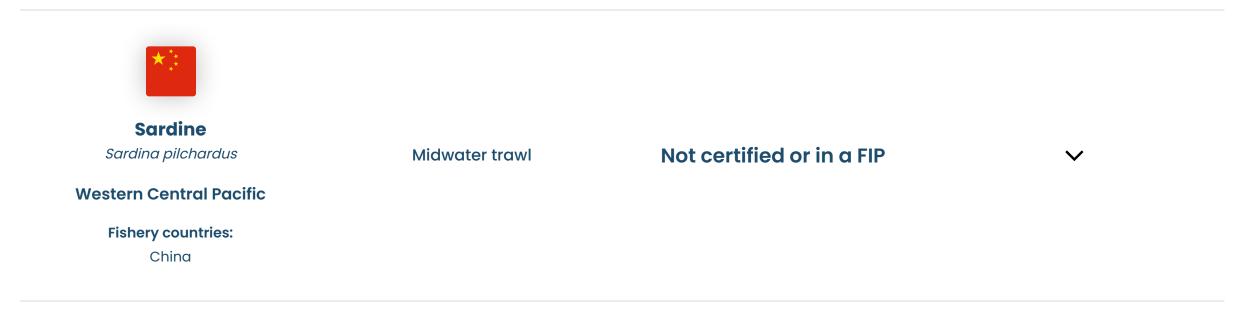


Environmental Notes

• Profile not yet complete.

General Notes

• This fish plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.

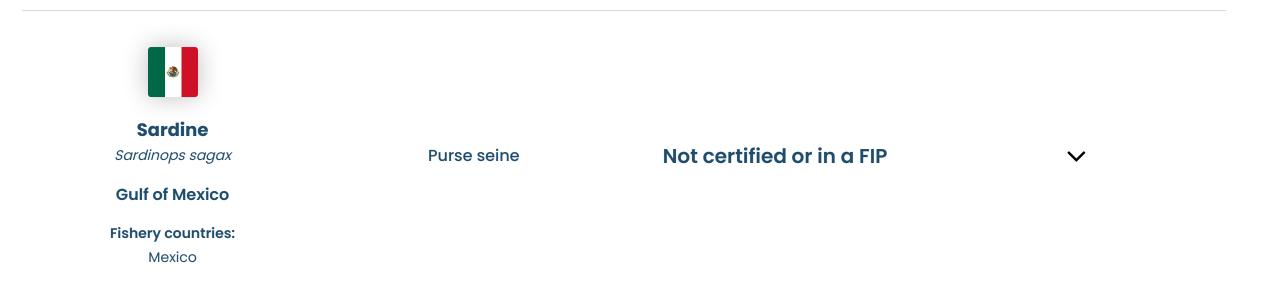


Environmental Notes

• Profile not yet complete.

General Notes

• This fish plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.

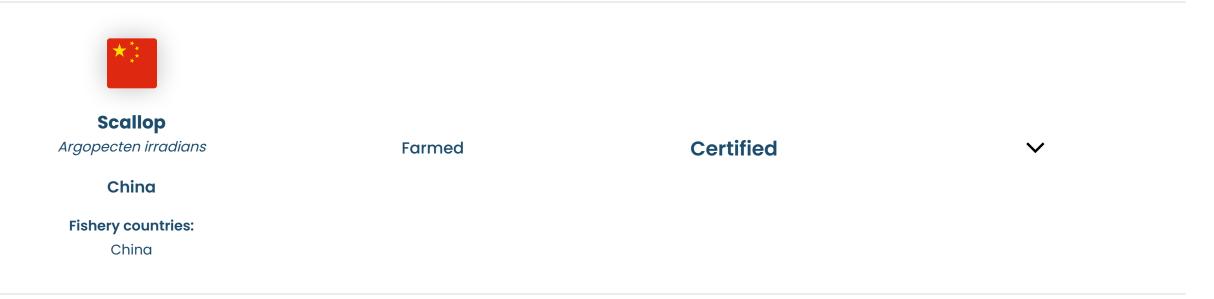
Sardine Sardinops sagax Northwest Pacific Fishery countries:	Purse seine	Not certified or in a FIP	\checkmark	
Thailand, Japan				

Environmental Notes

- Information on ETP impacts in the Japanese fishery is limited. Some vessels catch Pacific bluefin tuna, which is listed as Near Threated. No information on ETP impacts was found for the Thai fishery.
- Japanese purse seine fisheries operate as multispecies fisheries with other species considered target rather than bycatch species. No information on bycatch was found for the Thai fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes.



- Farmed scallops are not provided external feed.
- The risk of escapes is moderate and is driven by the potential of farmed scallops spawning during the production cycle, which releases eggs into the surrounding area. There is a limited understanding of whether diseases in farmed scallops affect wild populations. Bay scallop is not native to China so farmed production relies on hatchery-raised broodstock rather than depending on wild stock.

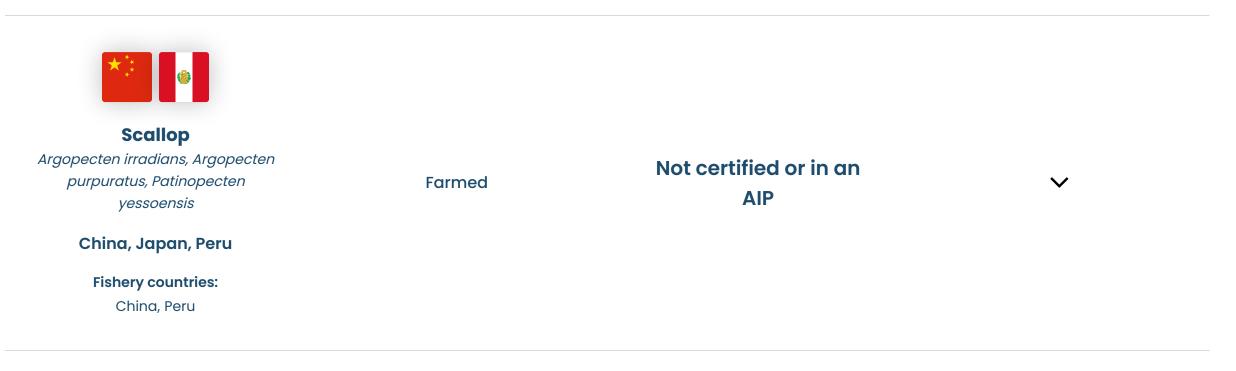
• Negative impacts on water quality are expected to be limited since no external feed and nutrient inputs are used and little to no chemicals appear to be used in the culture of scallops. Chemicals may be used in some circumstances for fouling, disease, or predation control, but there is limited data available on this.

General Notes

• The environmental impacts described are addressed to some degree by certification.

References

Seafood Watch, March 2021, Farmed Scallops, Worldwide, Bottom and Off-bottom culture



Environmental Notes

- Farmed scallops are not provided external feed.
- The risk of escapes is moderate and is driven by the potential of farmed scallops spawning during the production cycle, which releases eggs into the surrounding area. There is a limited understanding of whether diseases in farmed scallops affect wild populations. Depending on whether the species is native to the production country, seed stock is either sourced from hatcheries or wild-caught.
- Negative impacts on water quality are expected to be limited since no external feed and nutrient inputs are used and little to no chemicals appear to be used in the culture of scallops. Chemicals may be used in some circumstances for fouling, disease, or predation control, but there is limited data available on this.

General Notes

• This product is certified to a non-GSSI recognised aquaculture certification standard. The environmental impacts described are addressed to some degree by organic certification.

References

Seafood Watch, March 2021, Farmed Scallops, Worldwide, Bottom and Off-bottom culture





Scallop (Iceland scallop)			
Chlamys islandica	Dredge	Not certified or in a FIP	\checkmark
Northwest Atlantic			
Fishery countries:			
Canada			

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.

★** **	

Scampi (Red-banded lobster)			
Metanephrops thomsoni	Bottom trawl	Not certified or in a FIP	\checkmark
Northwest Pacific			
Fishery countries:			
China			

• Profile not yet complete.

General Notes

• No additional notes.

Seabass			
Dicentrarchus labrax	Farmed	Certified	\checkmark
Greece			
Fishery countries:			
Greece			

Environmental Notes

- Seabass require fishmeal and fish oil from marine feed sources in their diet. Concerns about the sustainability of feed inputs are relatively minor though they are not necessarily certified sustainable. Certification criteria require feed used in seabass production to be traceable.
- Escapes are a concern and little is known about the risk of disease transfer to wild species.
- Impacts on water quality are localized and have not been shown to have cumulative impacts beyond the immediate farm site. Chemical inputs are only used for health management and are applied in a controlled manner. Reports indicate responsible use, but there is a lack of data on the quantity of chemical inputs. Certification criteria regulate chemical usage.

General Notes

• The environmental impacts described are addressed to some degree by certification.

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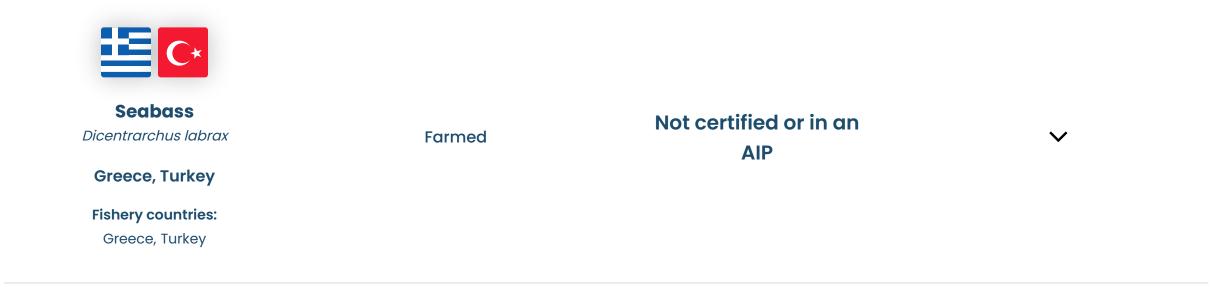
References

<u>Good Fish Guide - Seabass, Global: European Union and Turkey, All areas, Open net pen, marine</u>

Good Fish Guide - Seabass, Global: European Union and Turkey, All areas, Open net pen, Aquaculture Stewardship Council (ASC) certification

<u>Good Fish Guide - Seabass, Global: European Union and Turkey, All areas, Open net pen, marine, Global Seafood Alliance Best Aquaculture</u> <u>Practices (GAA BAP) 4* and 3*</u>

Seafood Watch, July 2020, Gilthead Seabream, European Seabass and Meagre, European Union, Turkey, Egypt



- Seabass require fishmeal and fish oil from marine feed sources in their diet. Concerns about the sustainability of feed inputs are relatively minor though they are not necessarily certified sustainable.
- Escapes are a concern and little is known about the risk of disease transfer to wild species.
- Impacts on water quality are localized and have not been shown to have cumulative impacts beyond the immediate farm site. Chemical inputs are only used for health management and are applied in a controlled manner. Reports indicate responsible use, but there is a lack of data on the quantity of chemical inputs.

General Notes

References

Good Fish Guide - Seabass, Global: European Union and Turkey, All areas, Open net pen, marine

Seafood Watch, July 2020, Gilthead Seabream, European Seabass and Meagre, European Union, Turkey, Egypt



Shrimp (Atlantic seabob) Xiphopenaeus kroyeri	Bottom trawl	Certified	\checkmark
Western Central Atlantic			
Fishery countries: Guyana			

Environmental Notes

- There is a risk to ETP species with this fishery.
- Bycatch is a risk for this fishery, but management measures include the use of bycatch reduction devices.
- Bottom trawls will directly impact on the sea bed. But, management measures are in place to limit impacts.

General Notes

References

Seafood Watch, May 2019, Atlantic seabob, Guyana: Western Central Atlantic, Bottom trawls



Silver hake *Merluccius bilinearis*

Northwest Atlantic

Fishery countries: Canada Bottom trawl

Not certified or in a FIP

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Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.

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Silverside (Chilean silverside) Odontesthes regia

Southeast Pacific

Fishery countries: Chile, Peru

Environmental Notes

- There are risks to marine mammals with this fishery.
- Bycatch is a risk for this fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes

Skipjack tuna	Purse seine		
Katsuwonus pelamis	Hook and line	Not certified or in a FIP	\checkmark
Eastern Pacific Ocean	Longlines		
Fishery countries:			
United States			

Not certified or in a FIP

 \checkmark

Environmental Notes

• There are risks to sharks, marine mammals, sea turtles, and seabirds, but management measures are in place.

Purse seine

Gillnets and entangling

nets

- Bycatch is a risk in this fishery. Bycatch includes billfish, other tuna species, and sharks. Fishery management plans are required to minimise and mitigate impacts.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes

Skipjack tuna	Purse seine			
Katsuwonus pelamis	Hook and line	Not certified or in a FIP	\checkmark	
Indian Ocean	Longlines			
Fishery countries: Seychelles				

Environmental Notes

- There are risks to sharks, rays, sea turtles, and seabirds.
- Bycatch varies by gear type. Other tunas, sharks and rays, billfish, and other fish are caught as bycatch species in the Indian Ocean fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Good Fish Guide - Skipjack tuna, Indian Ocean, Net (purse seine on aggregating devices or free-schooling fish)

Seafood Watch, March 2021, Tunas and large pelagics

Indian Ocean, Hand-operated pole-and-lines, Handlines and hand-operated pole-and-lines, Trolling lines, Floating object purse seine (FAD), Longlines (unspecified), Unassociated purse seine (non-FAD)

Skipjack tuna	Purse seine			
Katsuwonus pelamis	Hook and line	Not certified or in a FIP	\checkmark	
Western Atlantic Ocean	Longlines			
Fishery countries: Spain, United States				

Environmental Notes

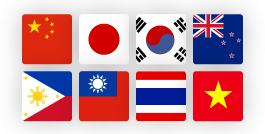
- There are risks to sharks, sea turtles, and marine mammals with this fishery. Management measures are in place to reduce impacts on sharks and sea turtles.
- Bycatch varies by gear type. Longline and associated (FAD) purse seine fisheries are associated with a higher risk of bycatch. Bycatch species include billfish, other tuna, and sharks and rays.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Good Fish Guide - Skipjack tuna, West Atlantic, Net (purse seine on aggregating devices or free-schooling fish)

<u>Seafood Watch, March 2021, Tunas and Swordfish, Atlantic Ocean, Drifting longlines, Floating object purse seine (FAD), Unassociated purse</u> <u>seine (non-FAD), Handlines and handoperated pole-and-lines, Trolling lines, Handlines, Harpoons</u>



Skipjack tuna *Katsuwonus pelamis* Purse seine Hook and line

Longlines

Not certified or in a FIP



Western and Central Pacific Ocean - WCPFC

Fishery countries: China, Japan, South Korea, New Zealand, Philippines, Taiwan, Thailand, Vietnam

Environmental Notes

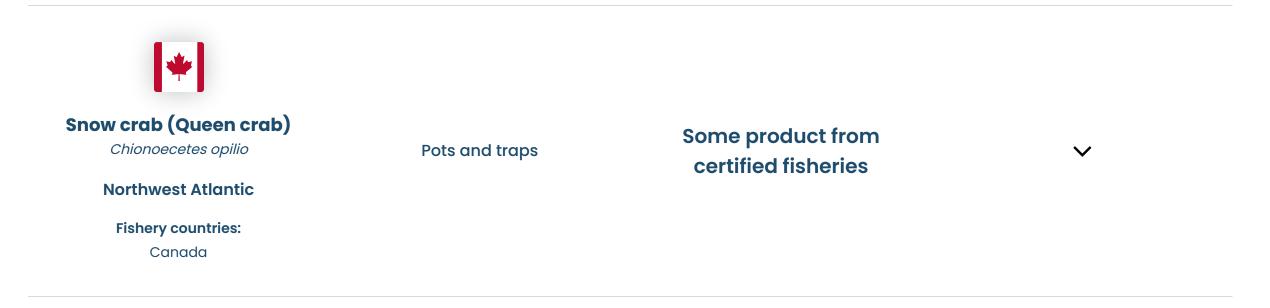
- There are risks to sharks, sea turtles, and marine mammals with this fishery. Management measures are in place to reduce impacts on ETP species.
- Bycatch varies by gear type. Longline and associated (FAD) purse seine fisheries are associated with a higher risk of bycatch. Bycatch species include billfish, other tuna, and sharks and rays.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Good Fish Guide - Skipjack tuna, Western and Central Pacific, Net (purse seine on aggregating devices or free-schooling fish)

Seafood Watch, January 2020, Western and Central Pacific Tunas and Swordfish, Western and Central Pacific, North Pacific, South Pacific, Floating object purse seine (FAD), Unassociated purse seine, (non-FAD), Drifting longlines, Handlines, Trolling lines, Handlines and handoperated pole-and-lines

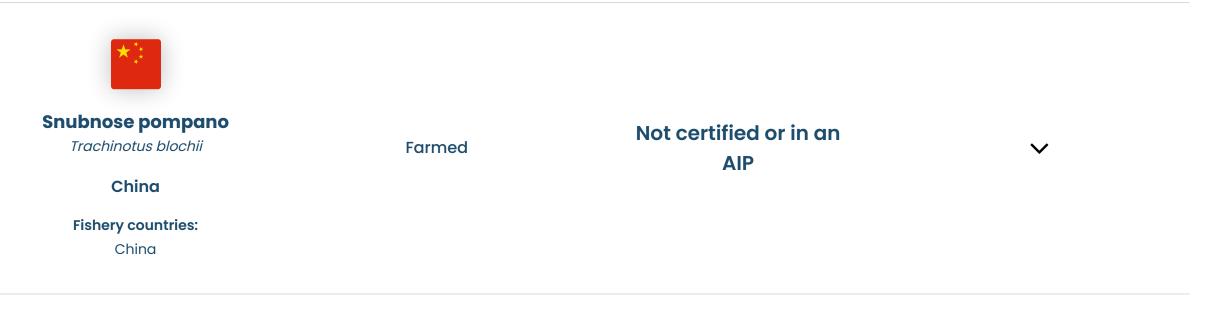


Environmental Notes

- Species potentially impacted by this fishery include several species of wolfish, leatherback turtles, and the critically endangered North Atlantic right whale. Mitigation measures are in place, but it is not possible yet to determine whether the measures undertaken are having significant effect on preventing interactions.
- This fishery is considered to be low impact with regard to bycatch of other species; however, availability of data is limited.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

No additional notes.



Environmental Notes

Profile not yet complete.

General Notes

No additional notes.

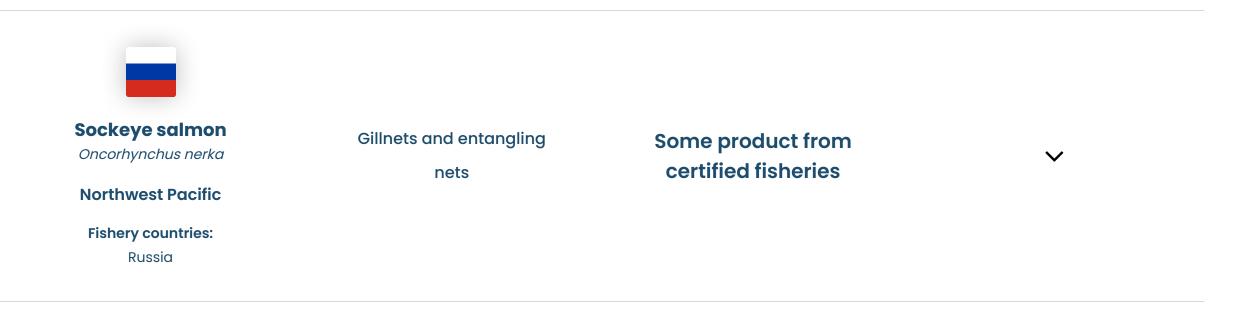


- Salmon listed as endangered in the United States is caught in this fishery.
- Other salmon species are caught as bycatch but management measures are in place.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

Reference

<u>Seafood Watch, January 2016, Pacific Salmon, United States of America - Northeast Pacific, Trolling lines, Drift gillnets, Purse seines, Hand-operated pole-and-lines, Updated July 1, 2019</u>

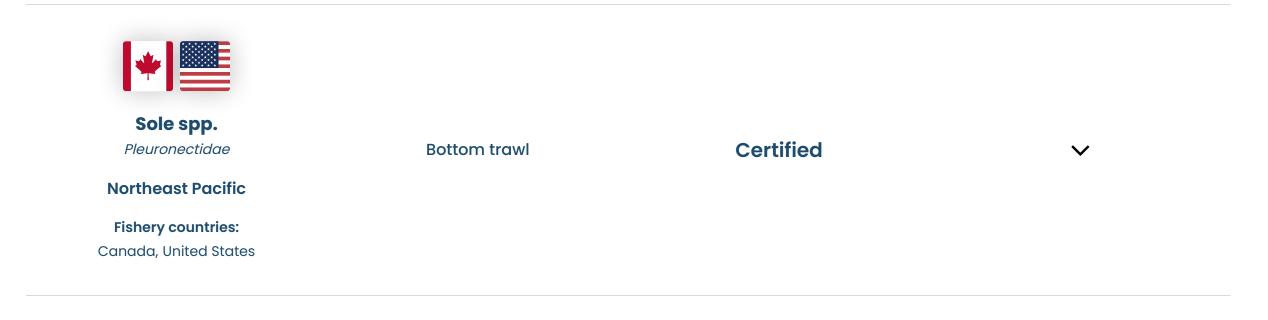


Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.

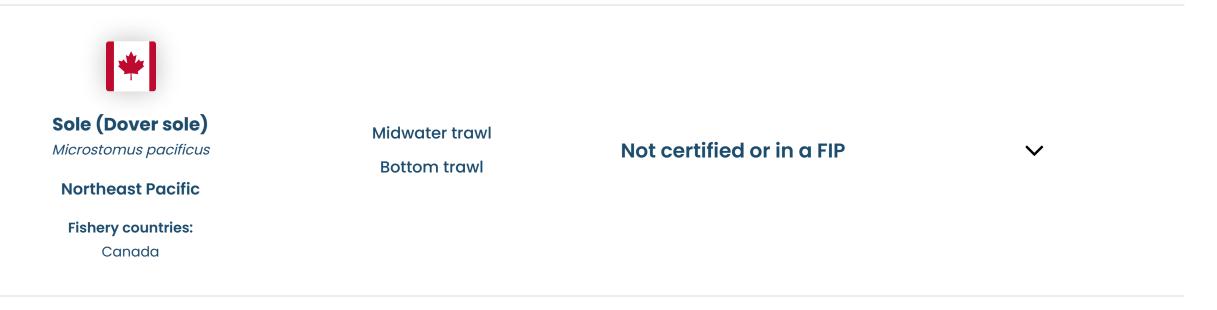


Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



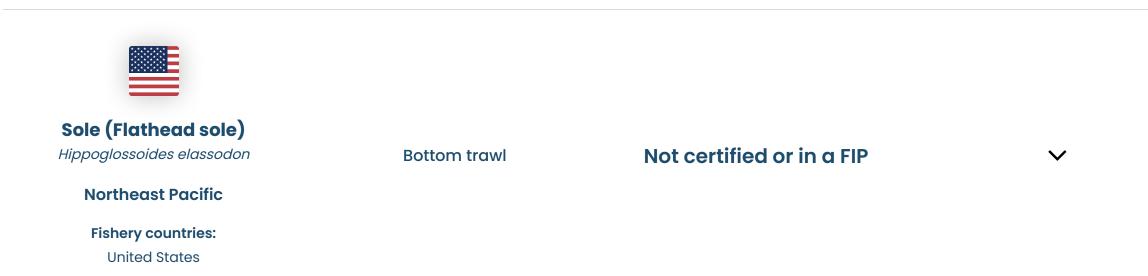
- Species of concern include sharks and skates.
- Sole is caught in a multispecies groundfish fishery.
- Impacts vary by gear type. Bottom trawls will directly impact on the sea bed. Management measures are in place to minimise impacts to vulnerable habitats.

General Notes

References

<u>Seafood Watch, April 2016, Groundfish, British Columbia, Canada: Northeast Pacific Ocean, Bottom trawls, Jig, Longlines (shallow-set & deep-set), Set</u>

longlines, Trolling lines



Environmental Notes

- This fishery is unlikely to impact ETP species.
- Sole is caught in a multispecies groundfish fishery.
- Bottom trawls will directly impact on the sea bed. Management measures are in place to prevent the affected area from expanding.

General Notes

References

Seafood Watch, April 2019, Groundfish, Alaska: Gulf of Alaska and Bering Sea, Bottom trawls, Set longlines, Pots



Sole (Petrale sole) Eopsetta jordani

Northeast Pacific

Fishery countries: Canada, United States Bottom trawl

Not certified or in a FIP

 \checkmark

Environmental Notes

- This fishery is unlikely to impact ETP species.
- Sole is caught in a multispecies groundfish fishery. Management measures are in place to mitigate bycatch of unwanted species.
- Bottom trawls will directly impact on the sea bed. Management measures are in place to prevent the affected area from expanding.

General Notes

• No additional notes



- Some catches of the "near threatened" Big skate are recorded in the Bering Sea and Aleutian Islands. No other known threats to ETP were found in this fishery.
- Sole is caught in a multispecies groundfish fishery. Management measures are in place to mitigate bycatch of unwanted species.
- Bottom trawls will directly impact on the sea bed. Management measures are in place to prevent the affected area from expanding.

General Notes

• No additional notes.

*			
Sole (Yellowtail flounder) Limanda ferruginea	Bottom trawl	Certified	\checkmark
Northwest Atlantic			
Fishery countries:			
Canada			

Environmental Notes

- Effects of this fishery on ETP species have not been reported. A number of sharks, rays and skates are classified as at risk on the IUCN Red List for the Northwest Atlantic. Some management measures for sharks are in place.
- Bycatch for this fishery includes cod and American plaice. Catch of these species must be considered when setting catch limits for the fishery.
- Bottom trawls will directly impact on the sea bed. Fishing in new areas is subject to an assessment and management measures.

General Notes

• No additional notes.



Southern king crab Lithodes santolla



Southwest Atlantic

Fishery countries:

Argentina

Environmental Notes

- This fishery is unlikely to impact ETP species, but available data is still limited.
- Bycatch for this fishery is considered low.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes.



Spiny lobster (Caribbean spiny lobster) Panulirus argus Pots and traps

Not certified or in a FIP 🛛 🗸 🗸

Western Central Atlantic

Fishery countries: Honduras, Haiti

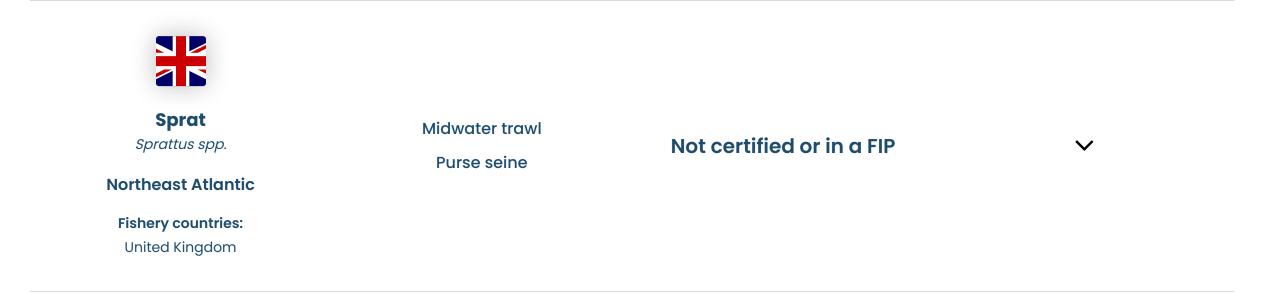
Environmental Notes

- There is limited information about the impact of the fishery on ETP species. Catch of grouper and snapper is a concern.
- There is a lack of information about the impact of the fishery on bycatch but lobster trap fisheries are assumed to be selective.
- There is a lack of information about the impact of the fishery on benthic habitats, but impacts of lobster traps are not likely to be significant.

General Notes

References

Seafood Watch, June 2023, Caribbean spiny lobster, Honduras, Diving, Pots



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Midwater trawl Purse seine

Not certified or in a FIP



Northeast Atlantic

Fishery countries: Latvia, Norway, United Kingdom

Environmental Notes

- This fishery is unlikely to impact ETP species.
- Management measures are in place for the main bycatch species herring.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes.



Southwest Atlantic

Fishery countries:

Argentina

Environmental Notes

- There is limited information about direct impacts on ETP species in Argentinian trawl fisheries. Concerns include bycatch of seabirds such as albatross and petrels.
- Squid is mainly caught by jigging gear, with a small amount caught by trawl vessels. Bycatch is a risk due to the low selectivity of trawl gear.
- Bottom trawls will directly impact on the sea bed but the area over which impacts occur is thought to be small. Management measures such as area closures are in place to reduce impacts.

General Notes

• This species plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.

Image: constraint of the constra	Midwater trawl Bottom trawl	Not certified or in a FIP	
-			
China			

Environmental Notes

- Interactions with the smooth hammerhead shark, which is listed as Vulnerable, are a concern.
- Bycatch is a risk due to the low selectivity of trawl gear.
- Habitat impacts are a risk in this fishery as the trawl gear can come into contact with the sea bed.

General Notes

References

Good Fish Guide - Japanese flying squid, Japan Sea and Pacific Coast: China, Net (pelagic trawl)

Seafood Watch, July 2020, Japanese flying squid, China, Midwater trawls



- Fishmeal and fish oil from marine feed sources including whole wild fish and by-products are used.
- This species is not native to Chile but has become established in the wild due to intentional stocking. However, there are still concerns about the impact of farmed salmonid escapes and disease outbreaks on wild fish populations.
- Production using open net cages and ponds results in the discharge of waste and nutrients directly into the surrounding water. Impacts caused by effluent from raceway systems are lower. The impact of chemical inputs, including pesticides and antimicrobials important to human health, is unclear.

General Notes

- The environmental impacts described refer to impacts assessed for freshwater rainbow trout and actual impacts may differ for saltwater steelhead trout.
- The environmental impacts described are addressed to some degree by certification.

References

Seafood Watch, December 2022, Rainbow trout, Chile, Marine net pens

Seafood Watch, July 2023, Rainbow trout, Chile, Raceways

Seafood Watch, Rainbow trout, Worldwide, Aquaculture Stewardship Council Certified Salmon Standard

Steelhead trout			
Oncorhynchus mykiss	Farmed	Certified	\checkmark
Colombia			
Fishery countries:			
Colombia			

Environmental Notes

- Fishmeal and fish oil from marine feed sources including whole wild fish and by-products are used.
- The risk of escapes varies by production system and is higher for net pen systems compared to raceway systems. Rainbow trout is not native to Colombia but has been categorised as "domesticated". However, there are still concerns about the impact of escapes and disease outbreaks on wild fish populations.
- Production using open net cages and ponds results in the discharge of waste and nutrients directly into the surrounding water. Impacts caused by effluent from raceway systems are lower. Chemical inputs appear to be low but there is a lack of data and the use of antimicrobials important to human health is not prohibited.

General Notes

- The environmental impacts described refer to impacts assessed for freshwater rainbow trout and actual impacts may differ for saltwater steelhead trout.
- The environmental impacts described are addressed to some degree by certification.

References

Seafood Watch, December 2018, Rainbow trout, Colombia, Raceways and Net Pens



Steelhead trout Oncorhynchus mykiss

Iceland, Lithuania, Peru

Fishery countries: Iceland, Lithuania, Peru

d trout			
us mykiss	Farmed	Certified	\checkmark
ania, Peru			
untries:			
ania, Peru			

Environmental Notes

• Profile not yet complete.

General Notes

• The environmental impacts are addressed to some degree by certification.

Steelhead trout			
Oncorhynchus mykiss	Farmed	Certified	\checkmark
Norway			
Fishery countries:			
Norway			
-			

- Fishmeal and fish oil from marine feed sources are used.
- There are concerns about the impact of farmed trout escapes and disease outbreaks on wild fish populations.
- Production using open net cages and ponds results in the discharge of waste and nutrients directly into the surrounding water. Chemical inputs, including antibiotics, may be used in production.

General Notes

- The environmental impacts described are addressed to some degree by certification.
- The Norwegian salmon industry has adopted a zonal approach to aquaculture management for licensing and disease management through the use of 13 Production Areas nationwide.

References

FishSource - Salmon, Norway

Good Fish Guide - Rainbow trout, Europe: UK, Norway, Turkey, Open net pen, marine, GLOBALG.A.P.

Steelhead trout Oncorhynchus mykiss	Farmed	Certified	\checkmark
Scotland			
Fishery countries:			
United Kingdom			

Environmental Notes

- Fishmeal and fish oil from marine feed sources are used, but ingredients are thought to be traceable.
- There are concerns about the impact of farmed trout escapes and disease outbreaks on wild fish populations.
- Production using open net cages and ponds results in the discharge of waste and nutrients directly into the surrounding water. Information on chemical inputs is lacking, but impacts are thought to be mitigated by regulations.

General Notes

- The environmental impacts described are addressed to some degree by certification.
- The industry follows a zonal approach to aquaculture management with respect to planning, siting, licensing, and operations.

References:

<u>FishSource - salmon, United Kingdom</u>

Good Fish Guide - Rainbow trout, Europe: UK, Open net pen, marine

Good Fish Guide - Rainbow trout, Europe: UK, Norway, Turkey, Open net pen, marine, GLOBALG.A.P.



Dredge

Not certified or in a FIP 🗸 🗸 🗸

Stimpson's surf clam (Arctic surfclam)

Mactromeris polynyma

Gulf of St Lawrence

Fishery countries: Canada

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Swordfish Xiphias gladius



Southeast Pacific

Fishery countries: Ecuador

Environmental Notes

- Species of concern affected by the fishery include sea turtles, seabirds and sharks. Sea turtles are captured incidentally by line gear. Seabirds also interact with swordfish line fisheries. Some management measures are in place to reduce impacts.
- Billfish, tunas, sharks, and other fish are caught in the Eastern Pacific longline fisheries. Data on bycatch is lacking.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Good Fish Guide - Swordfish, South East Pacific, Hook & line (longline)

Seafood Watch, December 2021, Tunas and large pelagics, Eastern Central Pacific Floating object purse seine (FAD), Dolphin set purse seine, Unassociated purse seine (non-FAD), Longlines (unspecified)

Tilapia (hybrid) Oreochromis mossambicus x Oreochromis niloticus	Farmed	Certified	\checkmark
Colombia			
Fishery countries: Colombia			

- Tilapia typically does not require large inputs of fishmeal and fish oil in commercial feeds.
- The potential impacts on wild species are limited because tilapia has been historically introduced and actively stocked into the environment. It has been declared "domesticated". Therefore, impacts from escapes are likely to be lower. But little is known about the risk of disease transfer to wild species.
- There is a lack of information about impacts on water quality and chemical use on Colombian tilapia farms. There is low enforcement of regulations on waste discharge.

General Notes

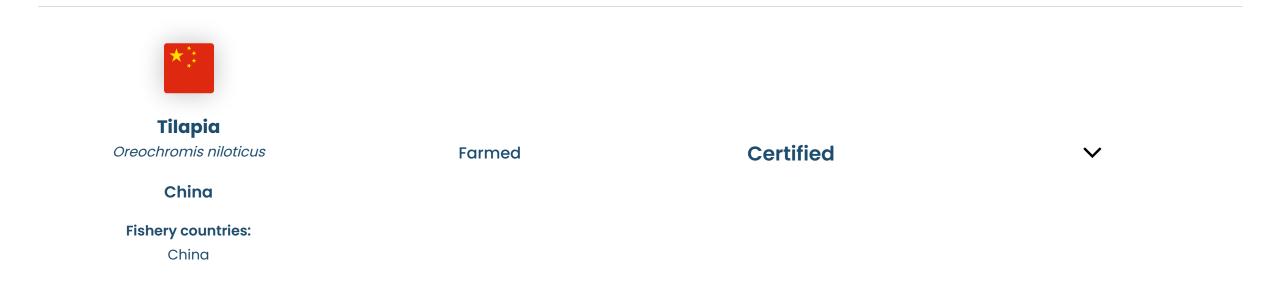
• The environmental impacts described are addressed to some degree by certification.

References

<u>Good Fish Guide - Tilapia, Global, Aquaculture Stewardship Council (ASC)</u>

Seafood Watch, Tilapia, Worldwide, Aquaculture Stewardship Council Certified Tilapia Standard

<u>Seafood Watch, March 2023, Tilapia (Oreochromis mossambicus x Oreochromis niloticus, Oreochromis niloticus), Colombia, Ponds, Freshwater</u> <u>net pen</u>



Environmental Notes

- Tilapia typically does not require large inputs of fishmeal and fish oil in commercial feeds.
- The risk of escapes is high but tilapia have already become established in China. Little is known about the risk of disease transfer to wild species.
- There is a lack of information about impacts on water quality and chemical use on tilapia farms in China. Chemical inputs, including antibiotics important to human health, are a concern.

General Notes

• The environmental impacts described are addressed to some degree by certification.

References

Good Fish Guide - Tilapia, Global, Aquaculture Stewardship Council (ASC)

Seafood Watch, November 2018, Tilapia, China, Ponds

Seafood Watch, Tilapia, Worldwide, Aquaculture Stewardship Council Certified Tilapia Standard

Seafood Watch, Tilapia, Worldwide, Global Aquaculture Alliance Certified BAP 2, 3, 4-star

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Παρια			
Oreochromis niloticus	Farmed	Certified	\checkmark
Honduras			
Fishery countries:			
Honduras			

- Tilapia typically does not require large inputs of fishmeal and fish oil in commercial feeds.
- The risk of escapes is high but tilapia have already become established in Honduras resulting in a low risk of invasiveness. Little is known about the risk of disease transfer to wild species.
- There are moderate impacts from effluents beyond the farm boundaries. The government management system addresses the effluent water quality; however, there have been records of eutrophication and harmful phytoplankton blooms, which indicate that monitoring measures are not effective.

General Notes

• The environmental impacts described are addressed to some degree by certification.

References

Good Fish Guide - Tilapia, Global, Aquaculture Stewardship Council (ASC)

Seafood Watch, April 2017, Farmed Tilapia, Honduras, Freshwater net pens

Seafood Watch, Tilapia, Worldwide, Aquaculture Stewardship Council Certified Tilapia Standard

Seafood Watch, Tilapia, Worldwide, Global Aquaculture Alliance Certified BAP 2, 3, 4-star



Tilapia Oreochromis niloticus

Farmed

Certified

 \checkmark

Indonesia

Fishery countries: Indonesia

Environmental Notes

- Tilapia typically does not require large inputs of fishmeal and fish oil in commercial feeds.
- The risk of escapes is high but tilapia have already become established in Indonesia. There appears to be a low incidence of disease on farms but there is a high risk of disease transfer to wild species when outbreaks occur.
- There is a lack of information about impacts on water quality on tilapia farms in Indonesia. Chemical inputs, including antibiotics important to human health, are a concern.

General Notes

- Although there is extensive legislation referencing area and zonal approaches to aquaculture planning and management, the tilapia farming industry still appears focused on farm-based approaches.
- The environmental impacts described are addressed to some degree by certification.

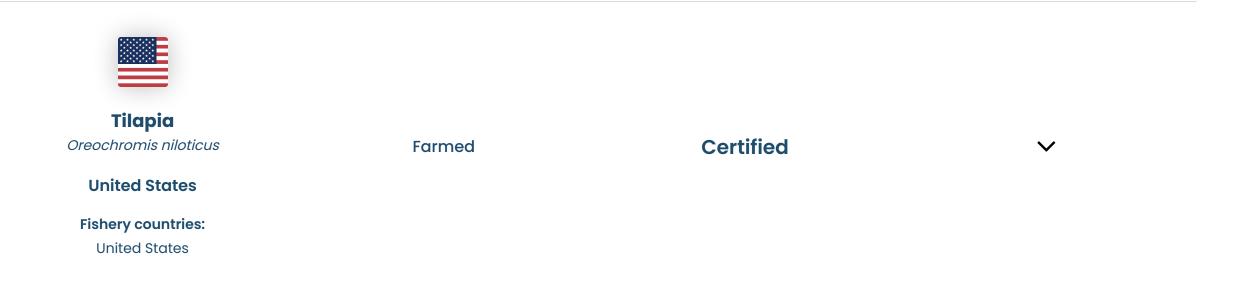
References

FishSource - Tilapia, Indonesia

<u>Good Fish Guide - Tilapia, Global, Aquaculture Stewardship Council (ASC)</u>

Seafood Watch, September 2015, Farmed Tilapia, Indonesia, Freshwater net pens

Seafood Watch, Tilapia, Worldwide, Aquaculture Stewardship Council Certified Tilapia Standard



• Profile not yet complete.

General Notes

• The environmental impacts are addressed to some degree by certification.

References

<u>Good Fish Guide - Tilapia, Global, Aquaculture Stewardship Council (ASC)</u>

Seafood Watch, Tilapia, Worldwide, Aquaculture Stewardship Council Certified Tilapia Standard

Seafood Watch, Tilapia, Worldwide, Global Aquaculture Alliance Certified BAP 2, 3, 4-star



Vermilion snapper Rhomboplites aurorubens

Longlines Handlines and pole-lines

Western Central Atlantic

Fishery countries: United States Not certified or in a FIP

V

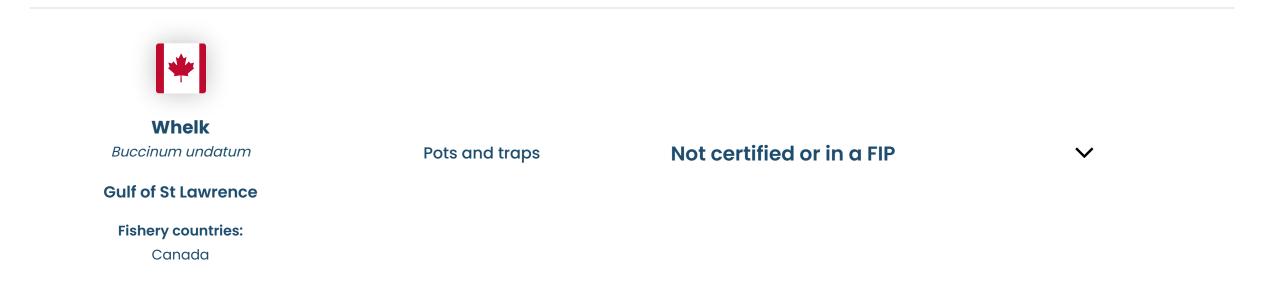
Environmental Notes

- There is a lack of information about interactions with ETP species in this fishery.
- The main species caught by the fishery includes other snapper-grouper.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

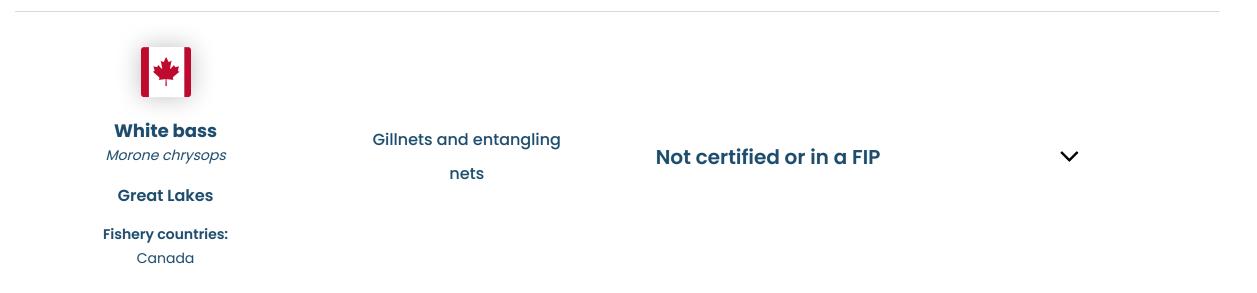
Seafood Watch, 2018, Snapper (US), United States - Gulf of Mexico, US South Atlantic, Vertical lines



• Profile not yet complete.

General Notes

• No additional notes.

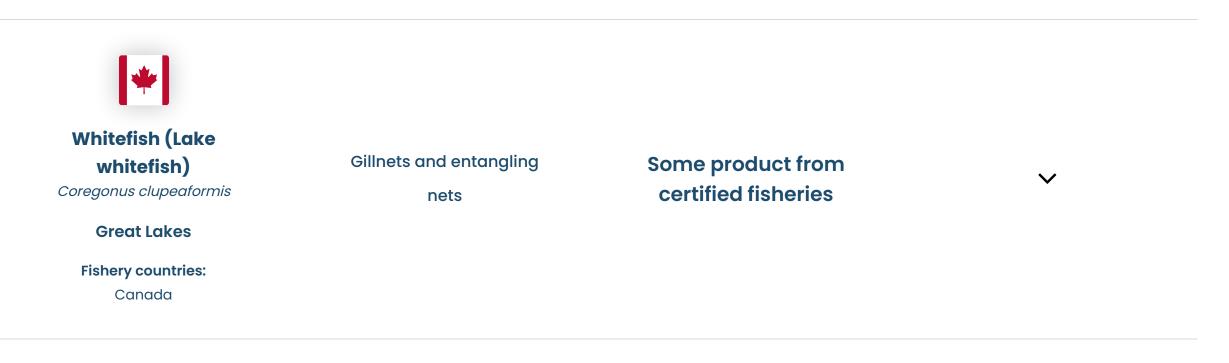


Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes



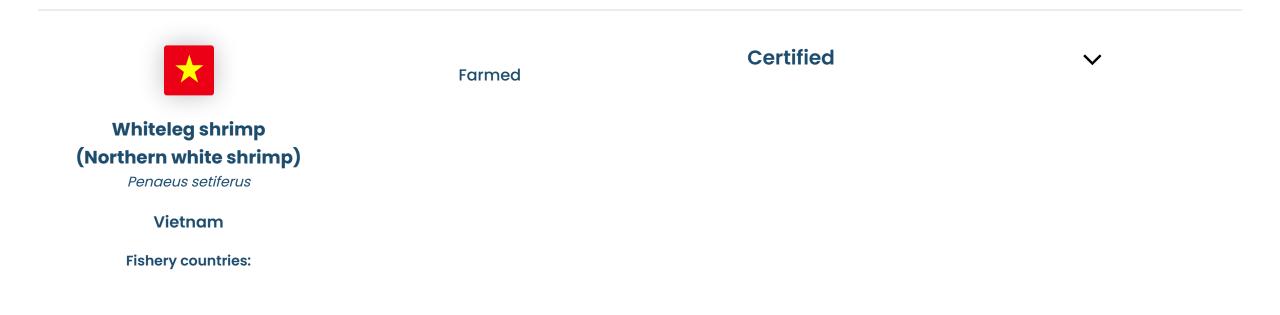
Environmental Notes

- Lake sturgeon are occasionally caught in gillnets but have high survival rates.
- Bycatch of lake trout is a concern.
- This fishery is unlikely to have a significant impact on the benthic habitat

General Notes

References

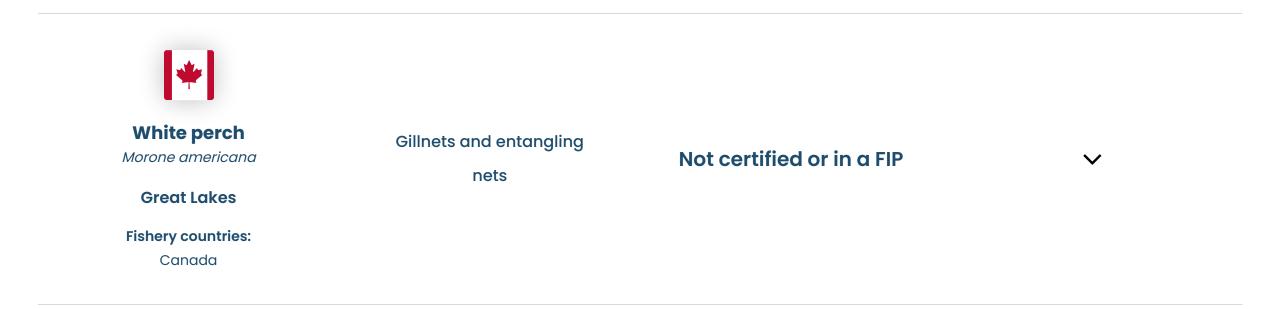
Seafood Watch, February 2015, Lake trout, Lake whitefish, Rainbow smelt, Walleye and Yellow perch, Canada and U.S. (Lake Huron), Set gillnets, Barriers, fences, weirs, corrals, etc.



• Profile not yet complete.

General Notes

• No additional notes.

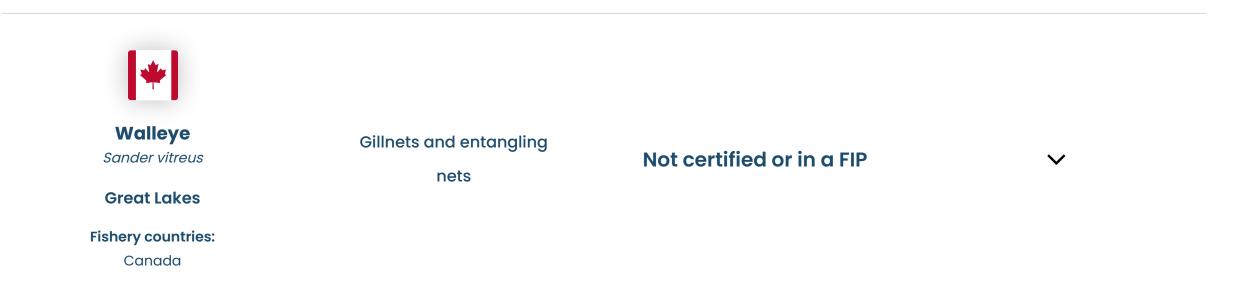


Environmental Notes

- This fishery impacts the recovery of Lake Sturgeon. Impacts on other ETP species are not known.
- Other bycatch risks are not known.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes.



Environmental Notes

- Lake sturgeon are occasionally caught in gillnets but have high survival rates.
- There is a lack of information on bycatch in this fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

<u>Seafood Watch, February 2015, Lake trout, Lake whitefish, Rainbow smelt, Walleye and Yellow perch, Canada and U.S. Michigan, New York, Ohio,</u> <u>Pennsylvania (Lake Erie)</u> <u>Set gillnets, Midwater trawls, Barriers, fences, weirs, corrals, etc.</u>

Image: With State S

Great Lakes

Fishery countries: Canada

Environmental Notes

- Lake sturgeon are occasionally caught in gillnets but have high survival rates.
- Bycatch of lake trout is a concern.
- This fishery is unlikely to have a significant impact on the benthic habitat.

General Notes

References

Seafood Watch, February 2015, Lake trout, Lake whitefish, Rainbow smelt, Walleye and Yellow perch, Canada and U.S. (Lake Huron), Set gillnets, Barriers, fences, weirs, corrals, etc.

Yellowfin tuna	Purse seine		
Thunnus albacares	Hook and line	Not certified or in a FIP	\checkmark
Eastern Pacific Ocean	Longlines		
Fishery countries:			
Mexico, El Salvador, United States			

Environmental Notes

- There are risks to sharks, seabirds, sea turtles and marine mammals with this fishery, but there are some management measures in place.
- Bycatch varies by gear type. Longline and associated (FAD) purse seine fisheries are associated with a higher risk of bycatch. Bycatch species include billfish, other tuna, and sharks.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

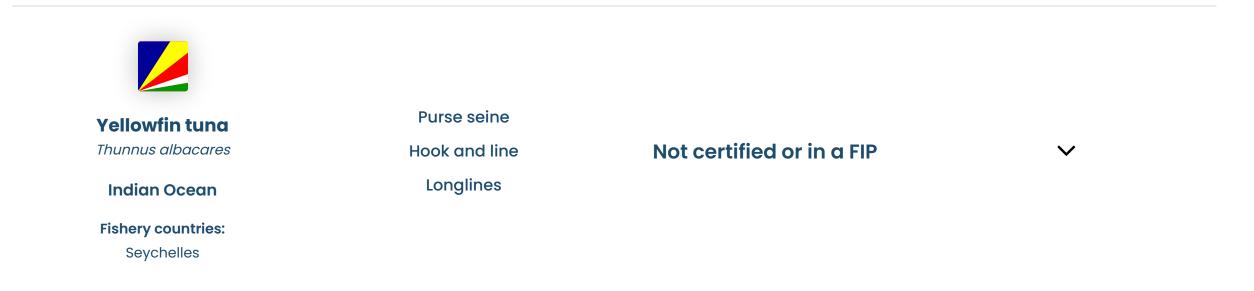
References

Good Fish Guide - Yellowfin tuna, Eastern Pacific, Hook & line (longline)

Good Fish Guide - Yellowfin tuna, Eastern Pacific, Net (purse seine on aggregating devices or free-schooling fish)

Seafood Watch, December 2021, Tunas and large pelagics

Eastern Central Pacific, Floating object purse seine (FAD), Dolphin set purse seine, Unassociated purse seine (non-FAD), Longlines (unspecified)



- This fishery presents a risk to ETP species including sea turtles, sharks and rays, seabirds, and marine mammals. Some mitigation measures are in place.
- Bycatch varies by gear type. Longline and associated (FAD) purse seine fisheries are associated with a higher risk of bycatch. Bycatch species include billfish, other tuna, and sharks. Monitoring and reporting of bycatch in the Indian Ocean is poor.
- This fishery is unlikely to have a significant impact on the sea bed.

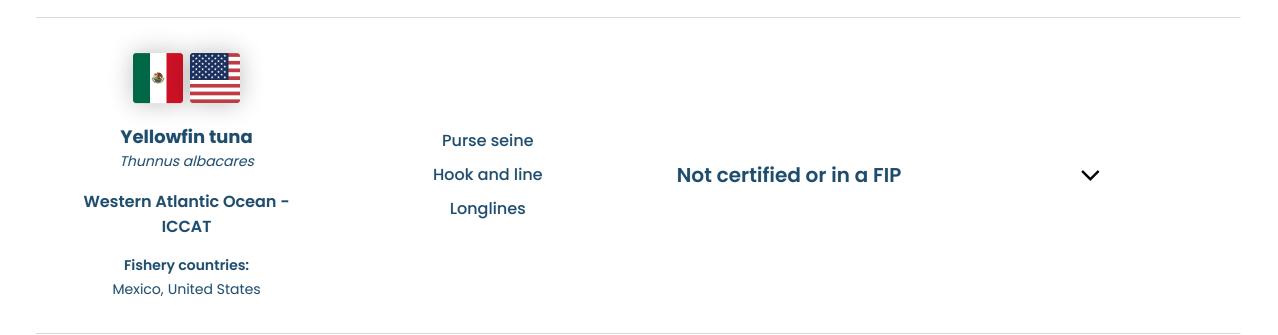
General Notes

References

Good Fish Guide - Yellowfin tuna,, Indian Ocean, Hook & line (Iongline)

Good Fish Guide - Yellowfin tuna, Indian Ocean, Net (purse seine on aggregating devices or free-schooling fish)

<u>Seafood Watch - March 2021, Tunas and large pelagics, Indian Ocean, Hand-operated pole-and-lines, Handlines and hand-operated pole-and-lines, Trolling lines, Floating object purse seine (FAD), Longlines (unspecified), Unassociated purse seine (non-FAD)</u>



Environmental Notes

- This fishery presents a risk to ETP species including sea turtles, sharks and rays, seabirds, and marine mammals. Some mitigation measures are in place.
- Bycatch varies by gear type. Longline and associated (FAD) purse seine fisheries are associated with a higher risk of bycatch. Bycatch species include billfish, other tuna, and sharks and rays. Monitoring and reporting of bycatch in the Indian Ocean is poor.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Good Fish Guide - Yellowfin tuna, Atlantic, Hook & line (longline)

Good Fish Guide - Yellowfin tuna, Atlantic, Net (purse seine on aggregating devices or free-schooling fish)

<u>Seafood Watch, March 2021, Tunas and Swordfish, Atlantic Ocean, Drifting longlines, Floating object purse seine (FAD), Unassociated purse</u> <u>seine (non-FAD), Handlines and handoperated pole-and-lines, Trolling lines, Handlines, Harpoons</u>



Yellowfin tuna Thunnus albacares

Western and Central Pacific Ocean - WCPFC

Fishery countries: China, Indonesia, Japan, South Korea, New Zealand, Philippines, Taiwan, Vietnam Purse seine Hook and line Longlines

Not certified or in a FIP

- This fishery presents a risk to ETP species including sea turtles, sharks and rays, seabirds, and marine mammals. Some mitigation measures are in place.
- Bycatch varies by gear type. Longline and associated (FAD) purse seine fisheries are associated with a higher risk of bycatch. Bycatch species include billfish, other tuna, and sharks and rays. Monitoring of bycatch in the longline fishery is poor.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

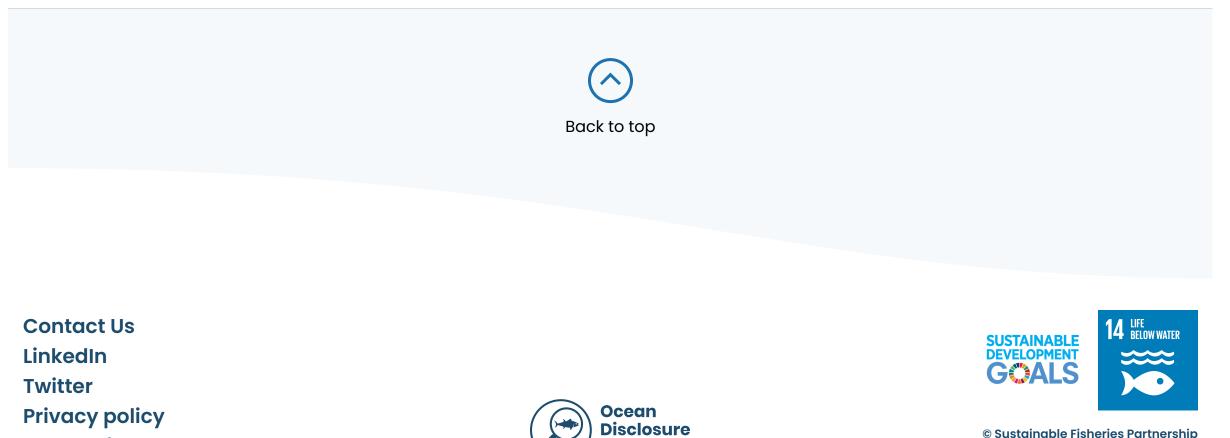
References

Terms of use

Good Fish Guide - Yellowfin tuna, Western and Central Pacific, Hook & line (longline)

Good Fish Guide - Yellowfin tuna, Western and Central Pacific, Net (purse seine on aggregating devices or free-schooling fish)

Seafood Watch, January 2020, Western and Central Pacific Tunas and Swordfish, Western and Central Pacific, North Pacific, South Pacific, Floating object purse seine (FAD), Unassociated purse seine, (non-FAD), Drifting longlines, Handlines, Trolling lines, Handlines and handoperated pole-and-lines



Project

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