

Why Participate?

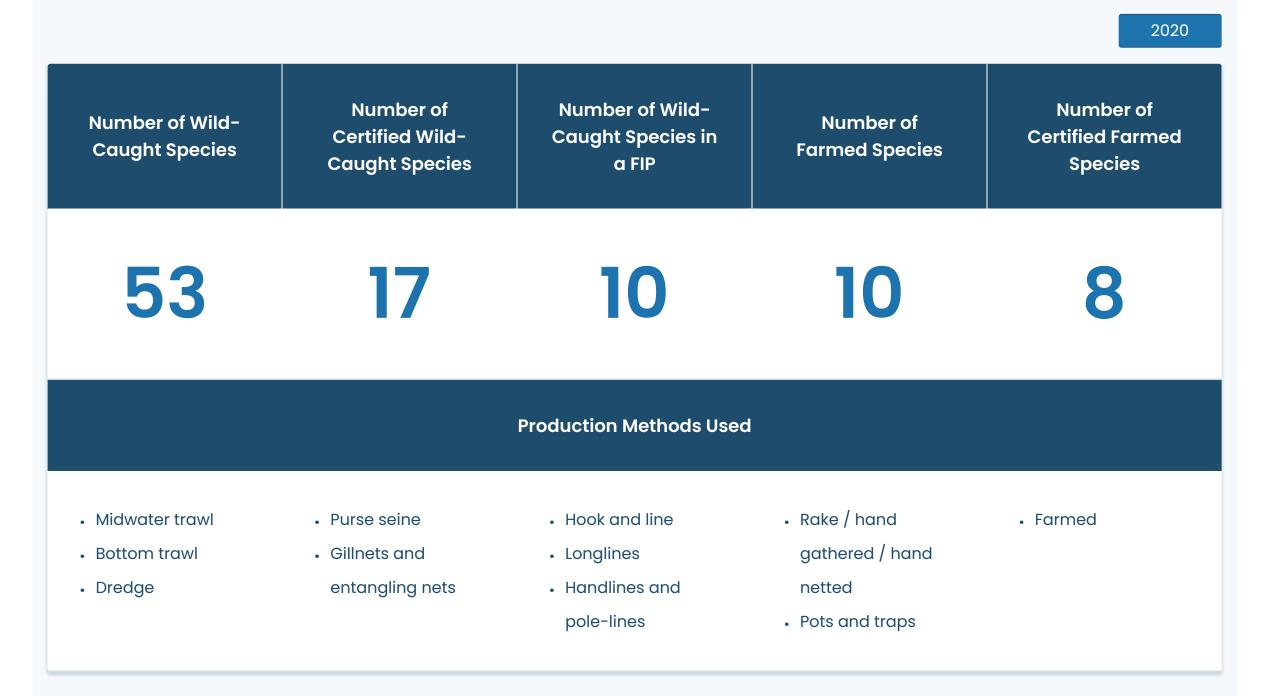
How ODP Works

What's Included?



## Giant Eagle

Giant Eagle, Inc. is among the top 40 largest private companies as ranked by Forbes magazine. Founded in 1931, the company is one of the nation's largest food retailers and distributors, and the leading supermarket retailer in its region with more than 470 stores throughout Pennsylvania, Ohio, West Virginia, Maryland and Indiana.



## Summary

Giant Eagle is committed to ensuring that all seafood products sold in its stores are harvested sustainably. We're proud to work with the nonprofit Sustainable Fisheries Partnership (SFP) to create a sustainable sourcing strategy for our wild and farmed seafood. This includes limiting stock depletion by sourcing a broad variety of species, choosing species based on responsible fishery practices in addition to customer demand, forging partnerships that allow direct access to fishermen, and actively supporting many Fishery Improvement Projects (FIPs). Giant Eagle commits to sell only seafood from fisheries that are managed by competent authorities and have a management plan in place that incorporates a sciencebased approach to ensure sustainability. We require full traceability to the point of landing or farm pond of all seafood sold fresh, frozen, or in value-added products.

Giant Eagle commits to educating its staff, suppliers and customers on seafood sustainability issues. Giant Eagle will make information available to customers in publications, in-store and online that empowers them to make responsible and informed purchasing decisions based on their own values regarding community, the environment and their health.

This profile covers all wild-caught seafood sourced in 2019.



# **Associated Fisheries**



Species and

Production

Certification or

Sustainability

Location	Methods	Improvement Project	Ratings	Notes
	Midwater trawl	Certified	<b>FishSource</b> Well Managed	$\checkmark$
Alaska pollock Theragra chalcogramma E Bering Sea Fishery countries:			<b>Seafood Watch</b> Eco-Certification Recommended	
U.S.			<b>Good Fish Guide</b> Best Choice 1	
			<b>Ocean Wise</b> Recommended	

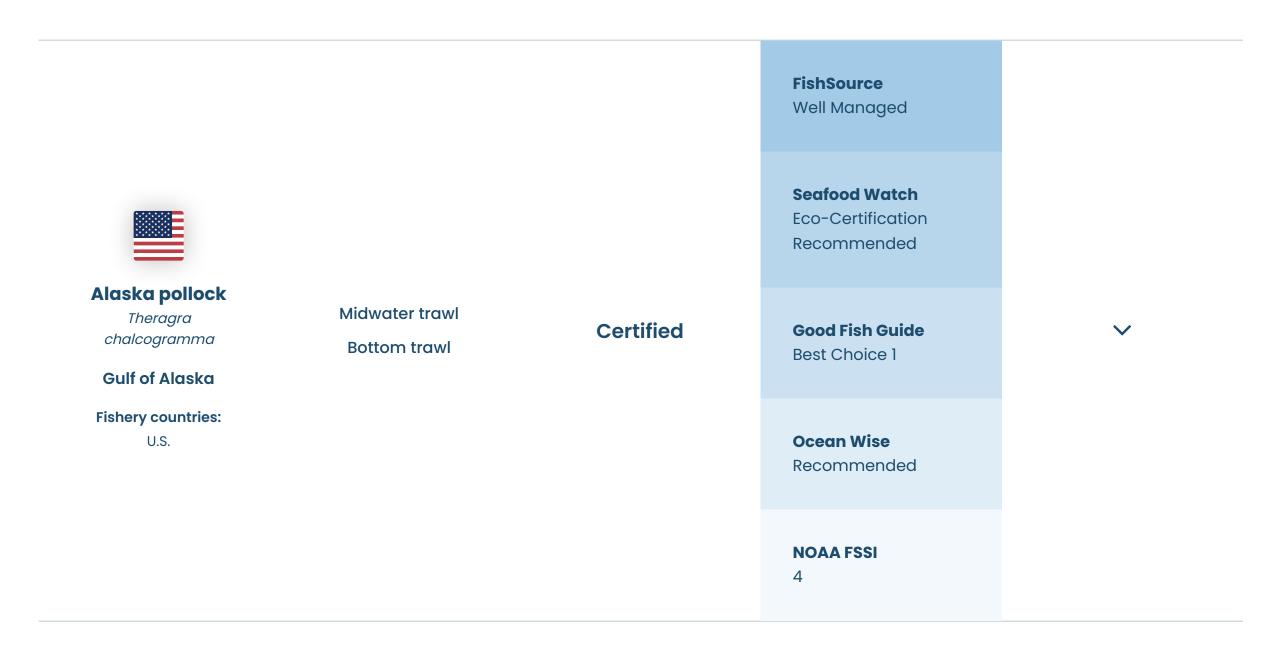
NOAA FSSI 4

### **Environmental Notes**

- This fishery is unlikely to have direct impacts on PET 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.

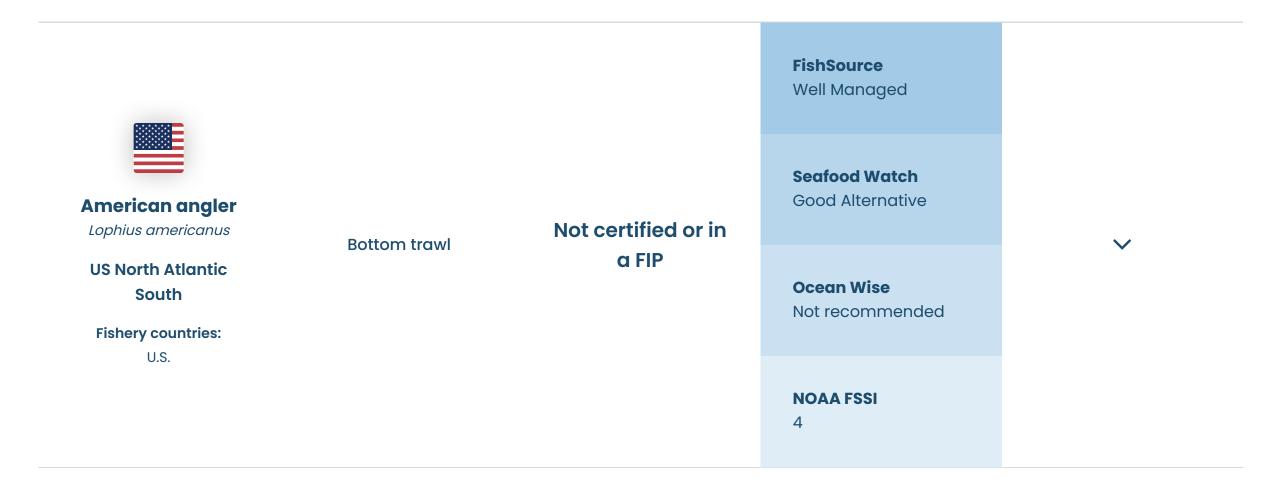


### **Environmental Notes**

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

### **General Notes**

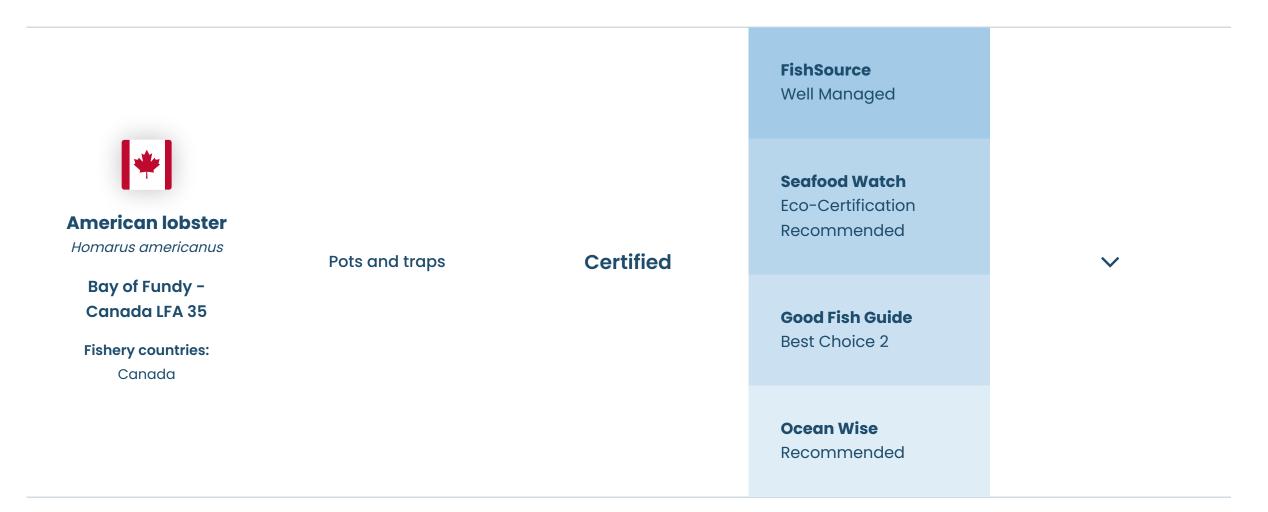
• This fish plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.



• Profile not yet complete.

### **General Notes**

• No additional notes



### **Environmental Notes**

- This fishery is unlikely to impact protected, endangered and threatened (PET) species. The risk to marine mammals of entanglement in lobster gear is considered low.
- Bycatch in this fishery is considered low.
- This fishery is unlikely to have a significant impact on the sea bed.

### **General Notes**

#### References

SAI Global, 2015, Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence lobster (Homarus americanus) Trap Fisheries MSC Public Certification Report



FishSource Managed

American lobster Homarus americanus		Not certified or in	Seafood Watch	
Gulf of Maine and	Pots and traps	a FIP	Good Alternative	$\checkmark$
Georges Bank - US				
Gulf of Maine				
Fishery countries:			Ocean Wise	
U.S.			Not recommended	

### **Environmental Notes**

- There are risks to marine mammals with this fishery, but there are mitigation measures in place.
- Bycatch of fin-fish, particularly cod, is a risk in this fishery, but there is insufficient data available to assess significance.
- Habitat impacts in this fishery are not well understood.

### **General Notes**

• No additional notes



American lobster	Pots and traps	Not certified or in a FIP	<b>FishSource</b> Managed	$\checkmark$
Homarus americanus Gulf of Maine and Georges Bank - US Georges Bank			<b>Seafood Watch</b> Good Alternative	
<b>Fishery countries:</b> U.S.			<b>Ocean Wise</b> Not recommended	

- This fishery is unlikely to impact PET species. However, entanglement in lines attached to traps presents a serious risk to the critically endangered North Atlantic right whale.
- 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



### **Environmental Notes**

- This fishery is unlikely to impact PET species. However, entanglement in lines attached to traps presents a serious risk to the critically endangered North Atlantic right whale.
- 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



Recommended

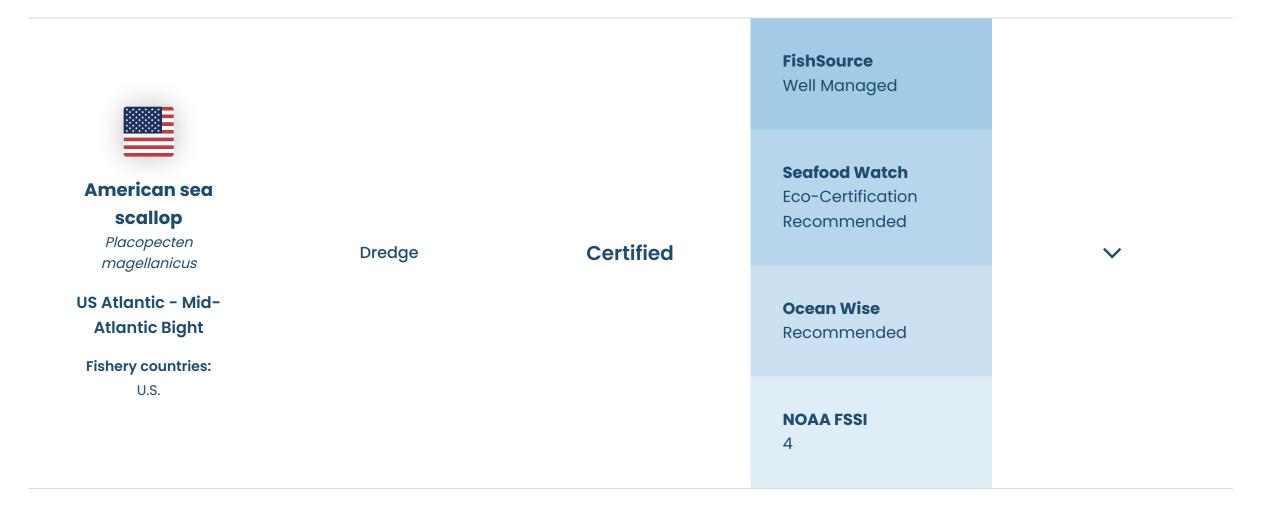
 $\checkmark$ 

**FishSource** 

• Profile not yet complete.

### **General Notes**

• No additional notes



### **Environmental Notes**

- There are risks to sea turtles with this fishery, but there are mitigation measures in place.
- Bycatch is a risk in this fishery.
- Dredges will directly impact on the sea bed.

### **General Notes**

• No additional notes.



FishSource Well Managed

**Seafood Watch** 

Perca flavescens Lake Erie - Western Basin, Western	Gillnets and entangling nets	Certified	Eco-Certification Recommended	$\checkmark$
Central Basin, Eastern Central			Ocean Wise	
Basin, Eastern Basin			Recommended	
Fishery countries:				
Canada				

### **Environmental Notes**

- There are risks to PET species with this fishery, but there is insufficient data available to assess significance.
- 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**

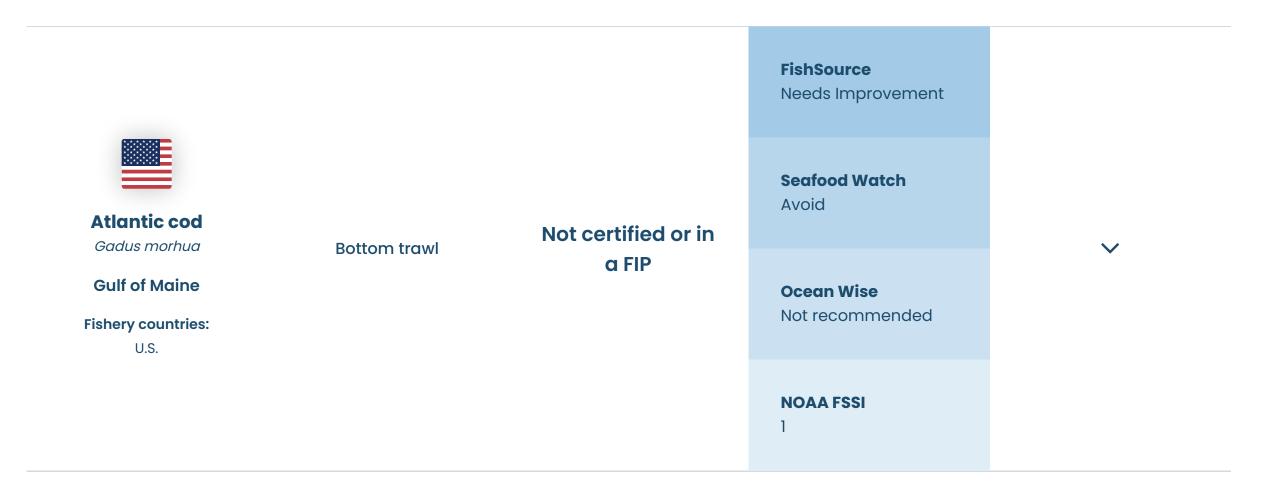
• No additional notes

	Bottom trawl	Not certified or in a FIP	<b>FishSource</b> Managed	~
Argentine red shrimp Pleoticus muelleri Patagonian:			<b>Seafood Watch</b> Avoid	
Argentina offshore industrial Fishery countries: Argentina			<b>Ocean Wise</b> Not recommended	

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

### **General Notes**

• No additional notes.



### **Environmental Notes**

- There are risks to marine mammals with this fishery, but there are mitigation measures in place.
- There is bycatch for this fishery but non-target species are retained. Management measures are in place to reduce impacts on retained species.
- Bottom trawls will directly impact on the sea bed. However, management measures are in place.

### **General Notes**

• No additional notes



### Ocean Wise

Recommended

### **Environmental Notes**

- This fishery is unlikely to have direct impacts on PET species.
- There is bycatch for this fishery but non-target species are retained. Management measures are in place to reduce impacts on retained species.
- This fishery is unlikely to have a significant impact on the sea bed.

### **General Notes**

• No additional notes.



### **Environmental Notes**

- This fishery is unlikely to impact PET species.
- There is bycatch for this fishery but non-target species are retained. Management measures are in place to reduce impacts on retained species.
- This fishery is unlikely to have a significant impact on the sea bed.

### **General Notes**

• No additional notes.





### **Environmental Notes**

- There are risks to protected, endangered and threatened (PET) species with this fishery, 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.

### **General Notes**

• The MSC certificate for this fishery was publicly suspended in March 2019 due to concerns regarding overfishing.

*	Gillnets and entangling nets	Not certified or in a FIP	<b>FishSource</b> Needs Improvement	$\checkmark$
Atlantic mackerel				
Scomber scombrus				
NW Atlantic				
Fishery countries:				
Canada				

- There are risks to marine mammals with this fishery.
- Bycatch 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**

• No additional notes.

*			<b>FishSource</b> Managed	
<b>Atlantic salmon</b> Salmo salar <b>Canada</b>	Farmed	Certified	<b>Seafood Watch</b> Avoid	$\checkmark$
<b>Fishery countries:</b> Canada			<b>Ocean Wise</b> Not recommended	

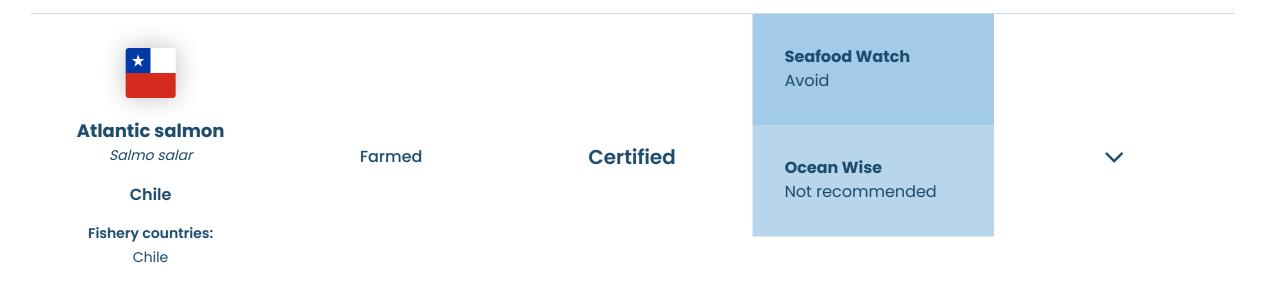
### **Environmental Notes**

- Salmon rely on wild capture fisheries for feed. Marine ingredients (herring, menhaden, anchovy) 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).
- The use of antibiotics was markedly high. The limited availability of registered pesticide therapeutants for the control of sea lice has resulted, at least twice, in the development of resistance to the few products permitted. There is potential for larger-scale, cumulative ecological impacts from effluents.

#### **General Notes**

#### References

Seafood Watch, Atlantic Salmon, Northwest Atlantic Ocean



### **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**

A zonal management approach has been adopted based on licenses (concessions); groups of licenses - Aquaculture Management Areas (AMAs); emergency disease zones - Macro Zones; and Areas Autorizadas para el ejercicio de la Acuicultura - Appropriate Areas for Aquaculture (AAA).

#### References

#### FishSource, Salmon - Chile

Seafood Watch, Chile Farmed Atlantic and Coho Salmon Report



### **Environmental Notes**

- Salmon rely on wild capture fisheries for feed.
- 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.

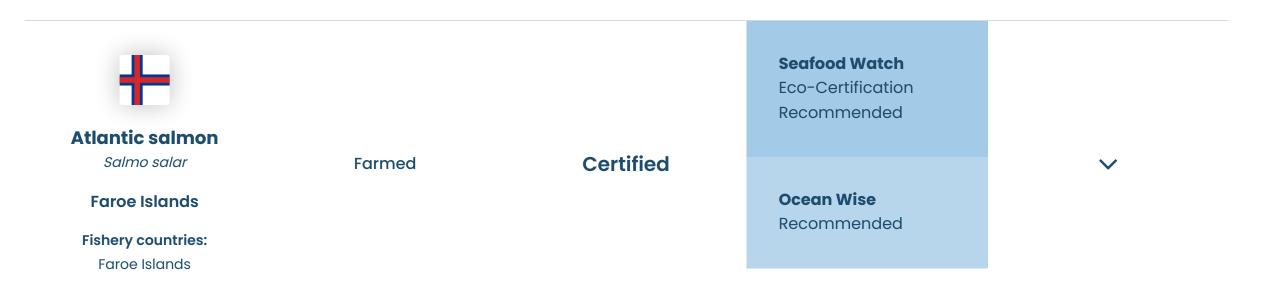
### **General Notes**

A zonal management approach has been adopted based on licenses (concessions); groups of licenses - Aquaculture Management Areas (AMAs); emergency disease zones - Macro Zones; and Areas Autorizadas para el ejercicio de la Acuicultura - Appropriate Areas for Aquaculture (AAA).

#### References

#### FishSource, Salmon - Chile

#### Seafood Watch, Salmon - Chile



### **Environmental Notes**

- Salmon rely on wild capture fisheries for feed.
- There is a high risk of escape and a lower risk of competitive and genetic impact on wild species.

• Antibiotics have not been administered on Faroese salmon farms for more than ten years, but pesticide use for the treatment of sea lice is substantial, with several different treatment types being used in recent years. Regarding seabed habitat impacts of settling particulate wastes, two-thirds of sites operated with minimal or minor pollution levels and one-third of sites were "polluted" or "very polluted."

### **General Notes**

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

#### References

Seafood Watch, Faroe Islands Atlantic Salmon Report



### **Environmental Notes**

- Salmon rely on wild capture fisheries for feed. But the use of fishmeal and fish oil in salmon farming in Atlantic North America is reported to be lower than that in other salmon-farming regions. Marine ingredients include herring, menhaden, anchovy sourced from fisheries in Atlantic Canada, Atlantic US and Gulf of Mexico, and Peru.
- 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 in Maine (as evidenced by the very low numbers of escapees identified in Maine rivers). The primary concerns for disease are sea lice and Infectious Salmon Anaemia, however the risk of transmission to wild salmon appears to be low.
- Impacts on water quality are localized, but there is potential for cumulative impacts in densely farmed areas. Chemical inputs of antibiotics and of pesticides used to control sea lice are of particular concern for salmon farmed in Atlantic North America.

### **General Notes**

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

#### References

Seafood Watch report for farmed Atlantic salmon, Atlantic North America



#### FishSource

			Well Managed	
Atlantic surf clam Spisula solidissima	Dredge	Certified		$\checkmark$
NW Atlantic	Diedge	Certified	Seafood Watch Eco-Certification	•
Fishery countries:			Recommended	
U.S.				

### **Environmental Notes**

- This fishery is unlikely to impact PET 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



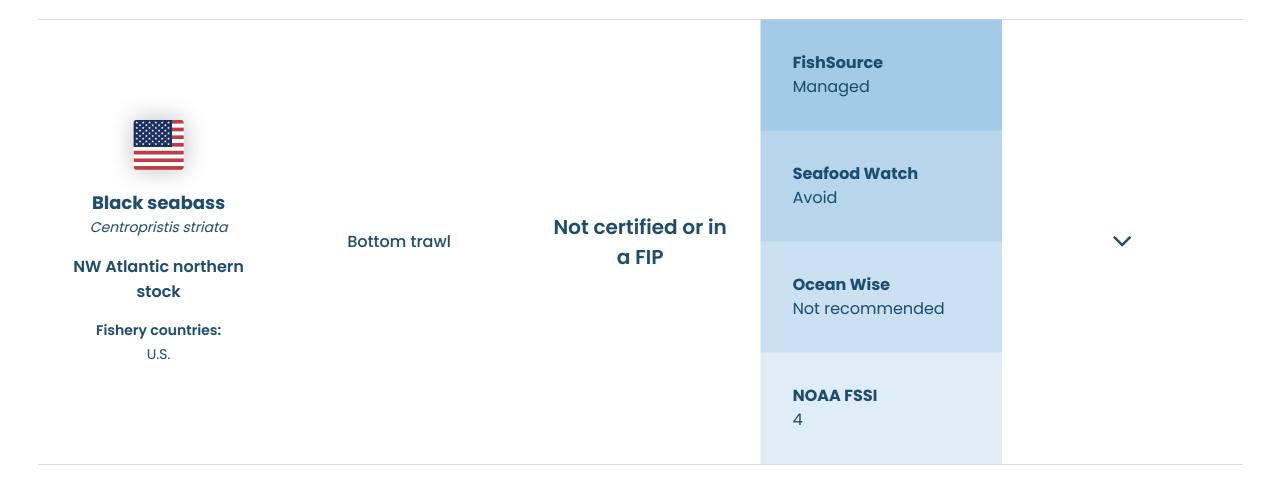
FishSource

	Longlines	Not certified or in a FIP	Managed	$\checkmark$
Black grouper Mycteroperca bonaci			Seafood Watch	
Northern Gulf of Mexico and NW			Avoid	
Atlantic southern				
<b>Fishery countries:</b> U.S.			<b>Ocean Wise</b> Not recommended	
			NOAA FSSI	
			4	

- This fishery is unlikely to impact PET 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



### **Environmental Notes**

• Profile not yet complete.

#### **General Notes**

• No additional notes.



### **Environmental Notes**

• Profile not yet complete.

### **General Notes**

• No additional notes

			<b>FishSource</b> Needs Improvement	
Blue marlin Makaira nigricans Pacific Ocean	Longlines	Not certified or in a FIP	<b>Seafood Watch</b> Avoid	$\checkmark$
<b>Fishery countries:</b> U.S.			<b>Ocean Wise</b> Not recommended	

### **Environmental Notes**

• Profile not yet complete.

### **General Notes**

• No additional notes

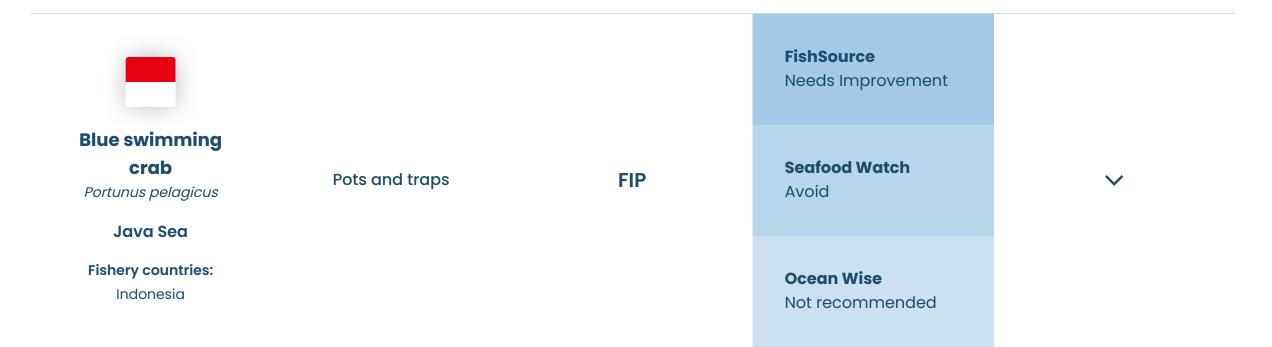
*			<b>FishSource</b> Well Managed	
Blue squat lobster Cervimunida johni Chilean southern	Bottom trawl	Certified	<b>Seafood Watch</b> Eco-Certification Recommended	~
<b>Fishery countries:</b> Chile			<b>Ocean Wise</b> Recommended	

### **Environmental Notes**

• Profile not yet complete.

### **General Notes**

• No additional notes.



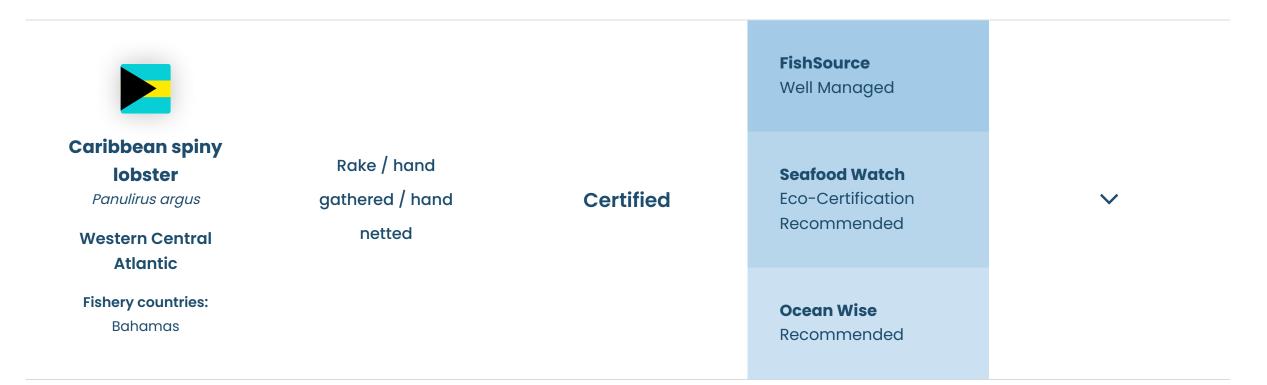
**Environmental Notes** 

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

### **General Notes**

#### References

<u>Fishery Progress, Indonesian blue swimming crab - gillnet/trap</u>



### **Environmental Notes**

• Profile not yet complete.

#### **General Notes**

• No additional notes



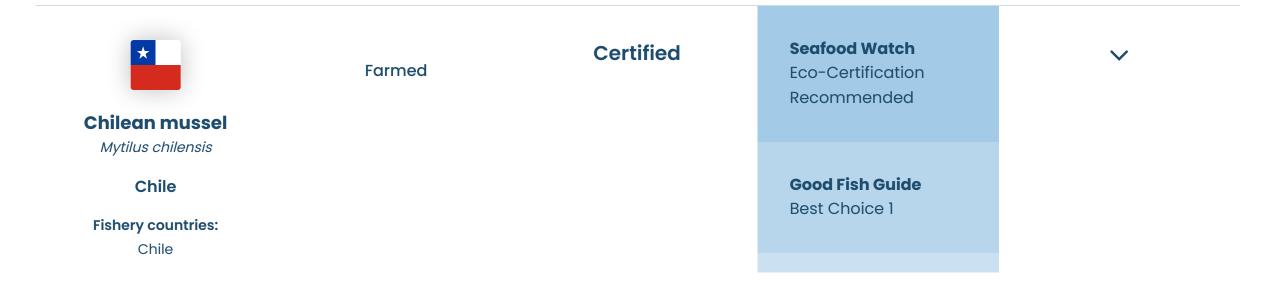
### **Environmental Notes**

- 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 effulents and chemical use are minimal and well-regulated.

### **General Notes**

#### References

Seafood Watch, U.S. Farmed Channel Catfish Seafood Watch Report



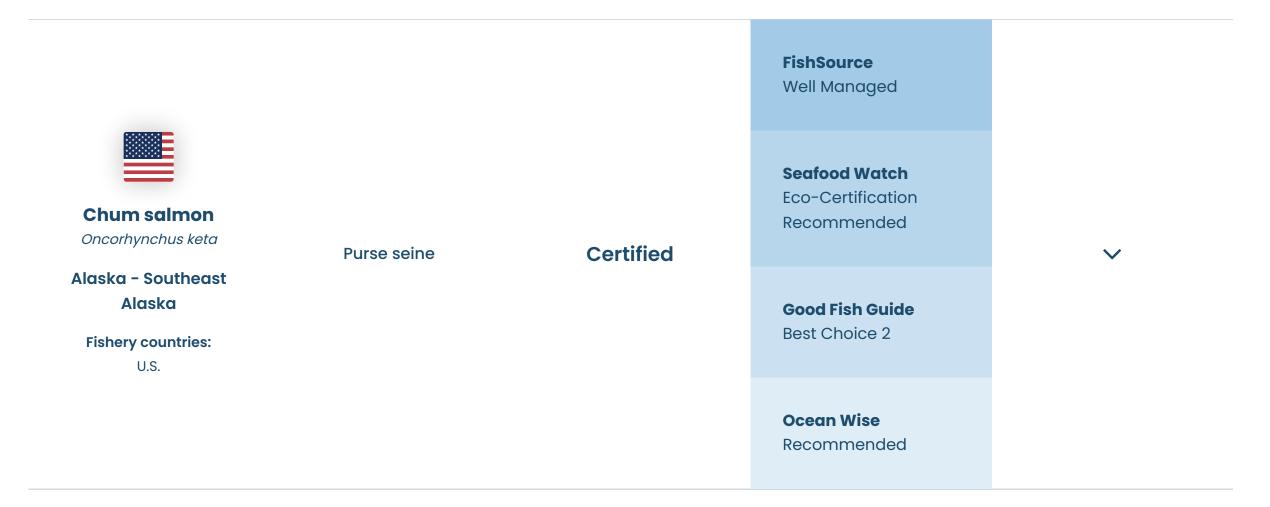
- No feed inputs are used to support farmed mussels.
- The larval phase of mussels may be transported away from farm sites. The spread of non-native mussels and unintentionally introduced species beyond their natural range may be a cause for concern.
- There is no concern regarding pollution from nutrients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

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

#### References

Seafood Watch Recommended Eco-Certifications for Chilean mussels



### **Environmental Notes**

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

#### **General Notes**

#### Caveat

The environmental notes for this fishery are based on a provisional assessment and are not derived from the FishSource profile.

#### References

Intertek Moody Marine, 2013, Alaska Salmon Fishery MSC Public Certification Report



- This fishery is unlikely to impact PET species.
- Bycatch for this fishery is considered low.
- This fishery is unlikely to have a significant impact on the benthic habitat.

#### **General Notes**

#### References

MRAG America, June 2018, MSC Public Certification Report for Kamchatka River Salmon Fisheries



### **Environmental Notes**

- This fishery is unlikely to impact PET species.
- Bycatch for this fishery is considered low and non-target species are released alive.
- This fishery is unlikely to have a significant impact on the benthic habitat.

### **General Notes**

#### References

SCS Global Services, 2015, MSC Public Certification Report for Iturup Pink & Chum Salmon Fisheries

			<b>Seafood Watch</b> Avoid	
Coho salmon				
Oncorhynchus kisutch	Farmed	Certified	Ocean Wise	$\sim$

Chile

#### Fishery countries:

Chile

### **Environmental Notes**

- Fishmeal and fish oil in Chilean salmon feeds continue to be replaced by high levels of crop protein or oil ingredients, and also with byproducts from land-animal processing. Data provided by major feed companies supplying Chilean farms and by Intesal show the feed conversion ratio (dry weight of feed to wet weight of fish) is 1.2 for coho salmon. From first principles, 1.56 MT of wild fish would need to be caught to produce 1 metric ton of farmed coho salmon.
- Large escape events continue to occur in Chile, although at a reducing frequency. Coho salmon show greater evidence of reproduction and establishment in Chile, and escaped fish have been shown to predate on wild fish. The open nature of net pen production systems leaves fish inherently vulnerable to infection. 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. Frequent treatment with antibiotics that are highly important for human medicine (and critically important to veterinary medicine) is not prudent, judicious, or justified when the risks are considered.
- Academic studies of soluble nutrients across all salmon farming regions indicate direct impacts at the site are unlikely, but the potential for cumulative impacts remains a moderate concern.

### **General Notes**

#### References



#### **Cuttlefishes nei** Sustainability Not certified or in Sepia pharaonis Bottom trawl $\checkmark$ a FIP not rated **Thailand Gulf of** Thailand **Fishery countries:** Thailand

### **Environmental Notes**

• Profile not yet complete.

### **General Notes**

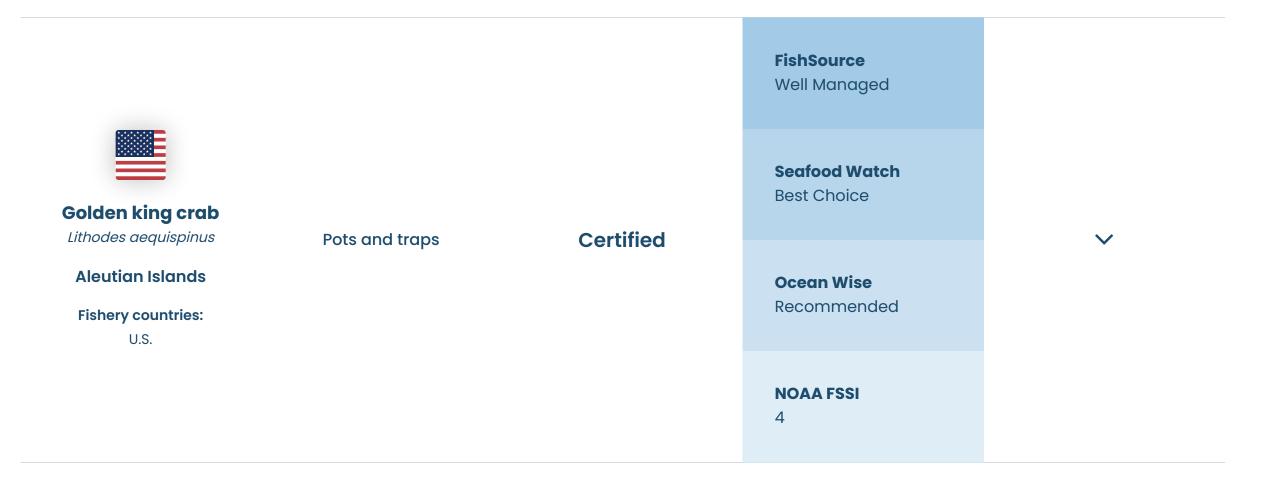
• No additional notes.



### **Environmental Notes**

• Profile not yet complete.

#### **General Notes**



### **Environmental Notes**

- Information on interactions with PET species is not available.
- Bycatch is a significant risk for this fishery.
- Bottom trawls will directly impact on the sea bed. However, management measures are in place.

#### **General Notes**

#### References

Alaska Seafood Marketing Institute, RFM Certification - Alaska Crab



### **Environmental Notes**

• Profile not yet complete.

### **General Notes**

• No additional notes



### **Environmental Notes**

- There are risks to PET species with this fishery, but there are mitigation measures in place.
- There is bycatch for this fishery but non-target species are retained. Management measures are in place to reduce impacts on retained species.
- Bottom trawls will directly impact the sea bed. However, management measures are in place.

### **General Notes**

• No additional notes



**Good Fish Guide** Best Choice 2

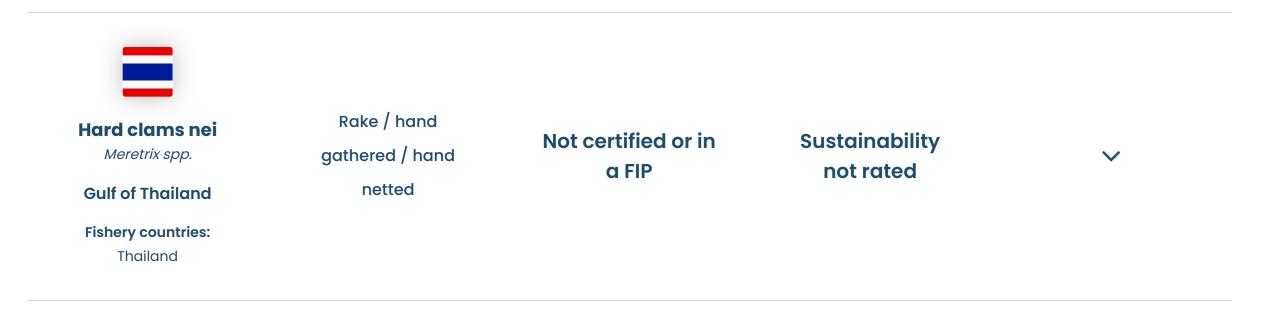
Ocean Wise Recommended

#### **Environmental Notes**

- This fishery is unlikely to impact PET species.
- Bycatch for this fishery is considered low.
- Bottom trawls will directly impact on the sea bed.

### **General Notes**

• No additional notes.



### **Environmental Notes**

• Profile not yet complete.

#### **General Notes**

• No additional notes



Squid Todarodes pacificus East China Sea and	Midwater trawl	FIP	<b>Ocean Wise</b> Not recommended	$\checkmark$
Japan Sea				
<b>Fishery countries:</b> China				

### **Environmental Notes**

- There is no information on the impact of this fishery on protected, endangered and threatened (PET) species.
- Information on bycatch is not available for this fishery.
- The midwater trawl fishery is unlikely to have a significant impact on the sea bed, however, the combined impacts from the multi-gear fishery are unknown.

### **General Notes**

There is a lack of information on stock status and mortality rates for Japanese flying squid in Chinese waters.

#### References

Fishery Progress, East China Sea and Yellow Sea Japanese flying squid - trawl

*			<b>Seafood Watch</b> Good Alternative	
Lake whitefish Coregonus clupeaformis Lake Huron, Lake Winnipeg	Gillnets and entangling nets	Not certified or in a FIP	<b>Ocean Wise</b> Recommended	$\checkmark$
<b>Fishery countries:</b> Canada				

• Profile not yet complete.

### **General Notes**

• No additional notes

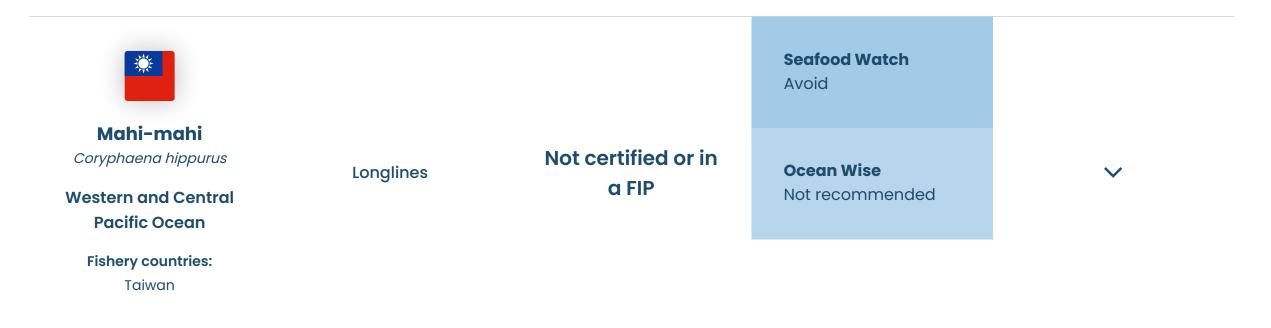
			<b>Seafood Watch</b> Good Alternative	
Mahi-mahi				
Coryphaena hippurus	Longlines	FIP	Ocean Wise	$\checkmark$
Eastern Pacific	-		Not recommended	
Ocean				
Fishery countries:				
Ecuador				

### **Environmental Notes**

- There are risks to turtles, sharks and seabirds with this fishery.
- Bycatch is a significant risk for this fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

### **General Notes**

#### References



### **Environmental Notes**

- There are risks to turtles and seabirds with this fishery.
- Bycatch is a risk for this fishery but there is insufficient data available to assess significance.
- This fishery is unlikely to have a significant impact on the sea bed.

### **General Notes**

• No additional notes

			<b>Seafood Watch</b> Avoid	
Mitre squid		Not certified or in		
Thailand Gulf of	Bottom trawl	a FIP	<b>Ocean Wise</b> Not recommended	$\sim$
Thailand				
Fishery countries:				
Thailand				

### **Environmental Notes**

• Profile not yet complete.

### **General Notes**

• No additional notes



### **Environmental Notes**

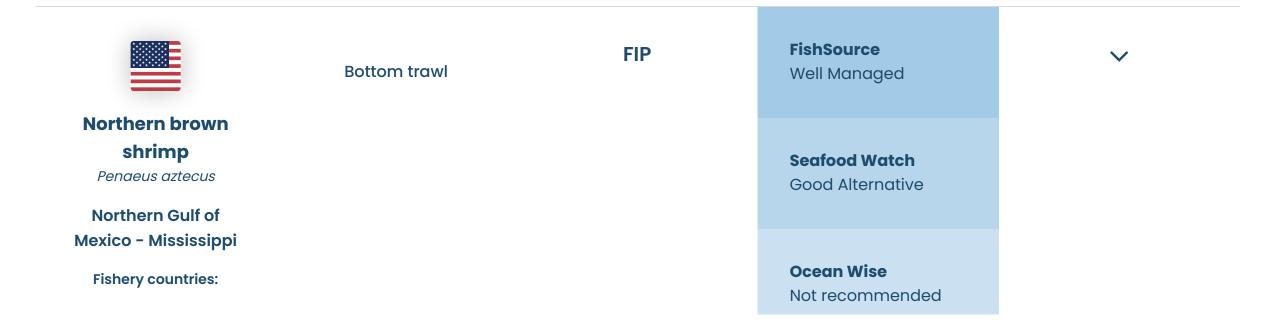
- No feed inputs are used to support farmed mussels.
- The larval phase of mussels may be transported away from farm sites. The spread of non-native musels and unintentionally introduced species beyond their natural range may be a cause for concern.
- There is no concern regarding pollution from nutrients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

Ocean Wise ratings for mussels



- There is potential for turtle interactions with this fishery, but excluder devices are fitted to nets for protection.
- Bycatch is a risk for this fishery, but there are mitigation measures in place.
- Bottom trawls will directly impact on the sea bed.

### **General Notes**

#### References

Audubon G.U.L.F., Mississippi Shrimp FIP



### **Environmental Notes**

- Profile not yet complete.
- Bycatch for this fishery is considered low.
- Dredges will directly impact on the sea bed.

### **General Notes**

• No additional notes



### **Environmental Notes**

- This fishery is unlikely to impact PET 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



Not certified or in

**FishSource** Needs Improvement

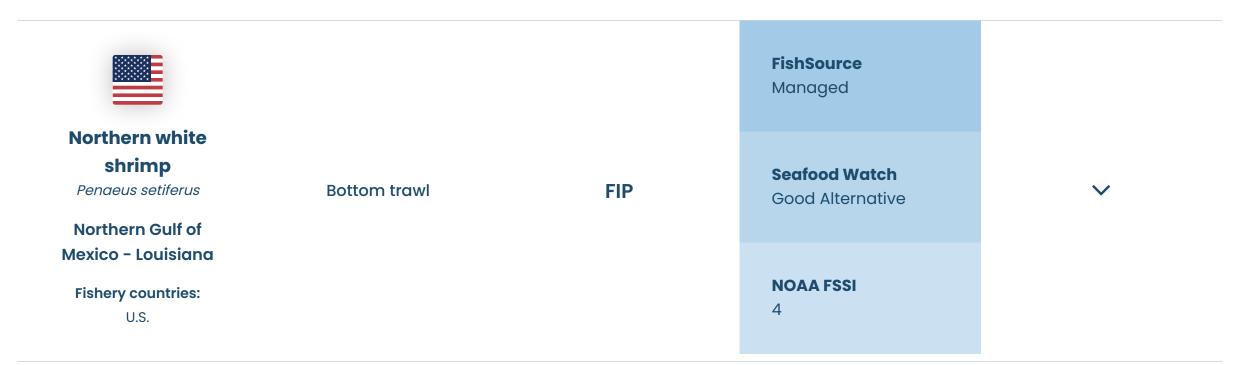
 $\checkmark$ 

Northern red	andlines and pole-lines	a FIP	<b>Seafood Watch</b> Good Alternative
<b>Mexico</b> Fishery countries: U.S.			<b>Ocean Wise</b> Not recommended
			<b>NOAA FSSI</b> 3

- This fishery is unlikely to impact PET species.
- Bycatch is a risk for this fishery, but there is insufficient data available to assess significance.
- This fishery is unlikely to have a significant impact on the sea bed.

### **General Notes**

• No additional notes



### **Environmental Notes**

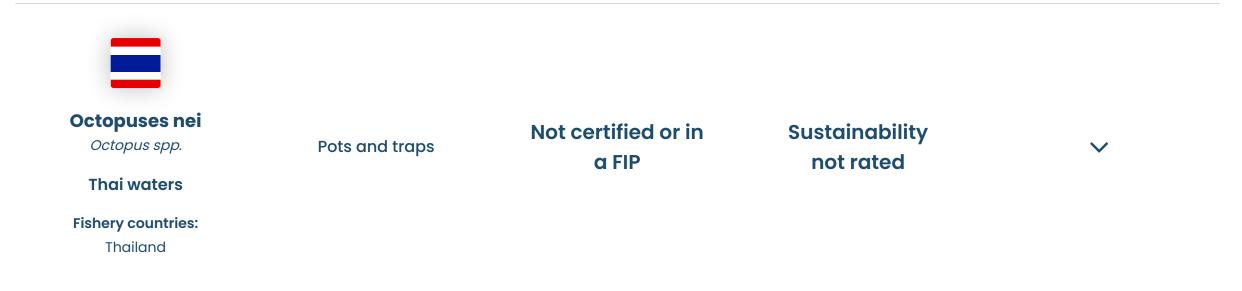
- There is potential for turtle interactions with this fishery, but excluder devices are fitted to nets for protection.
- Bycatch is a significant risk for this fishery.
- Bottom trawls will directly impact on the sea bed.

### **General Notes**

• <u>NOAA FSSI 4</u>: The fishery is not overfished and overfishing is not occurring and the stock biomass is at or above 80% of the biomass that produces maximum sustainable yield.

#### References

Fishery Progress, Louisiana shrimp - otter/skimmer trawl FIP



• Profile not yet complete.

### **General Notes**

• No additional notes

***			<b>FishSource</b> Well Managed	
Orange roughy Hoplostethus atlanticus East and South Rise	Bottom trawl	Certified	<b>Seafood Watch</b> Eco-Certification Recommended	$\checkmark$
<b>Fishery countries:</b> New Zealand			<b>Ocean Wise</b> Recommended	

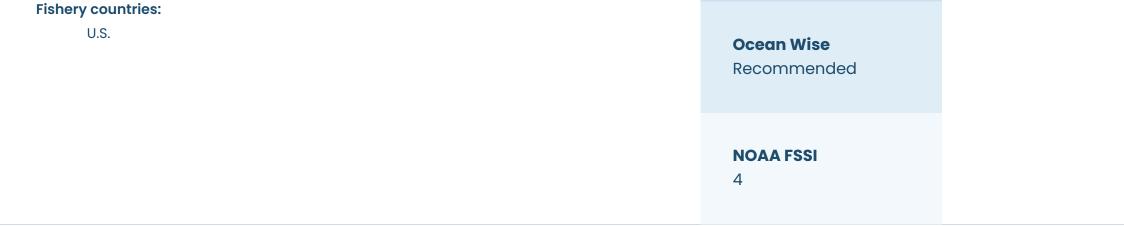
### **Environmental Notes**

- This fishery is unlikely to impact PET species.
- Bycatch for this fishery is considered low.
- Bottom trawls will directly impact on the sea bed.

### **General Notes**

• No additional notes.





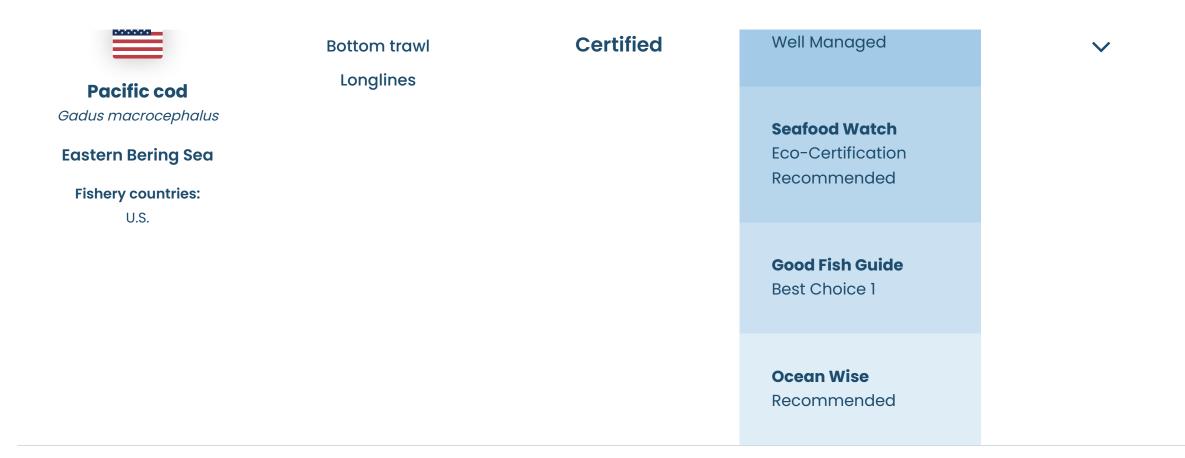
### **Environmental Notes**

- There are risks to seabirds and marine mammals with this fishery, but there are mitigation measures in place.
- Bycatch for this fishery includes other fish, skates and sea birds, but there is insufficient data available to assess significance.
- The impact depends on the gear type. Bottom trawls will directly impact on the sea bed.

### **General Notes**

• No additional notes.





- There are risks to seabirds and marine mammals with this fishery, but there are mitigation measures in place.
- Bycatch for this fishery includes other fish, skates and sea birds, but there is insufficient data available to assess significance.
- The impact depends on the gear type. Bottom trawls will have the greatest impact on the sea bed.

### **General Notes**

• No additional notes.



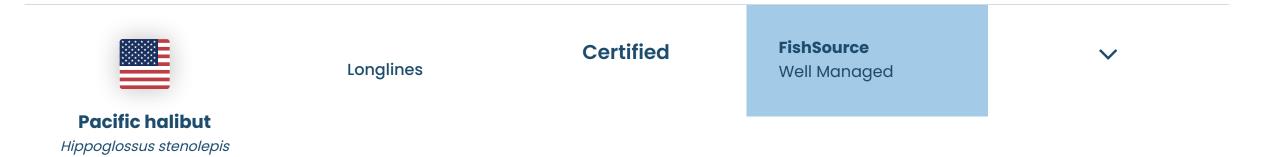


### **Environmental Notes**

- There are risks to seabirds and marine mammals with this fishery, but there are mitigation measures in place.
- 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



Fishery countries: U.S.

### **Seafood Watch** Eco-Certification Recommended

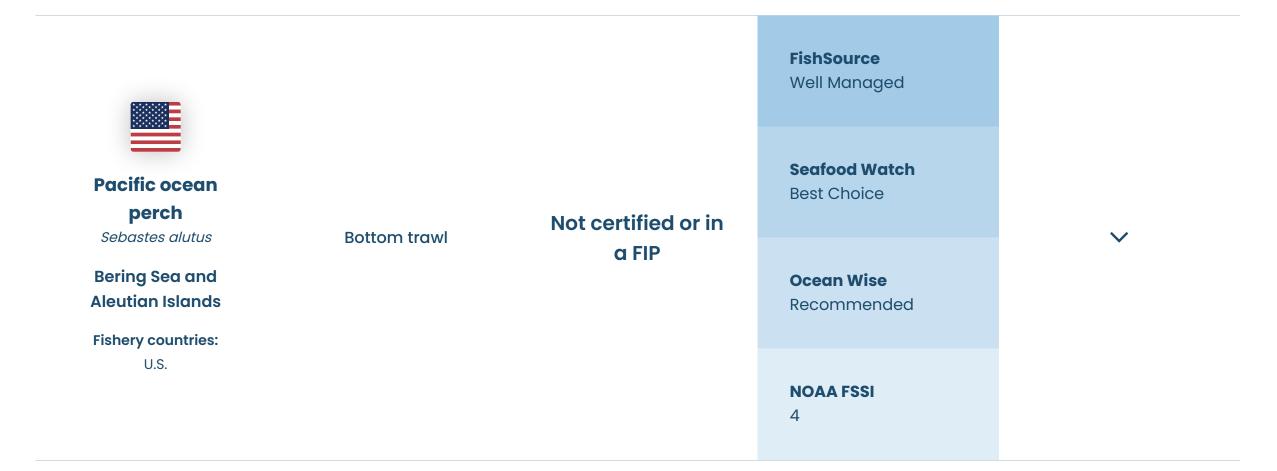
**Ocean Wise** Recommended

### **Environmental Notes**

- There are risks to seabirds with this fishery, but mitigation actions are underway.
- Bycatch is a risk for this fishery, but there is insufficient data available to assess significance.
- This fishery is unlikely to have a significant impact on the sea bed.

### **General Notes**

• No additional notes

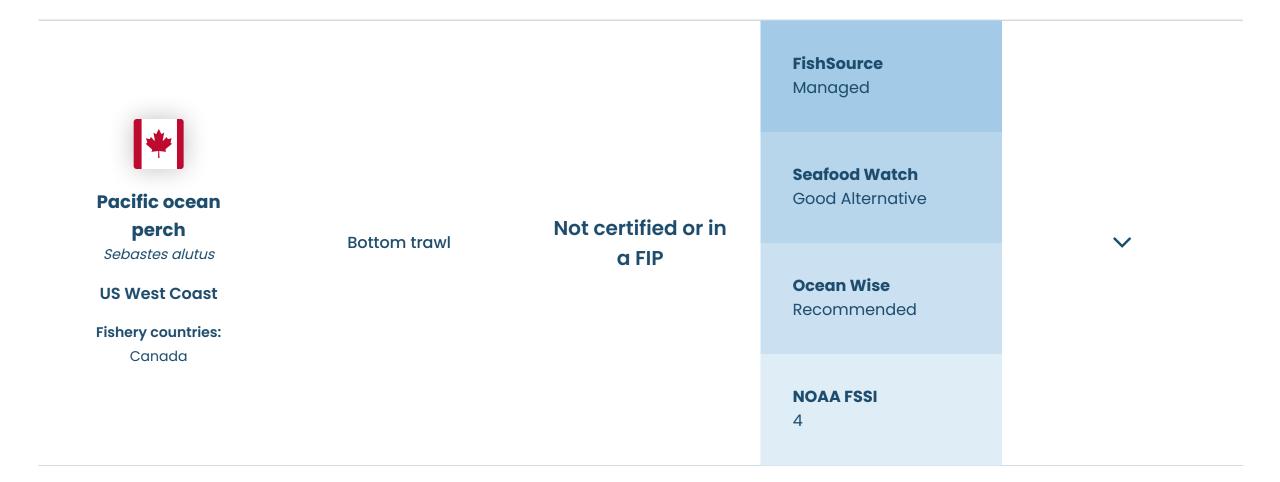


### **Environmental Notes**

- This fishery is unlikely to impact PET species.
- Bycatch for this fishery is considered low.
- Bottom trawls will directly impact on the sea bed.

#### **General Notes**

• No additional notes



- This fishery is unlikely to impact PET species.
- Bycatch for this fishery is considered low.
- Bottom trawls will directly impact on the sea bed.

### **General Notes**

• No additional notes.



### **Environmental Notes**

- Pangasius feed includes low levels of fishmeal and fish oil from marine feed sources. Feed inputs are not required to be responsibly sourced.
- As a native species, the risk to wild populations from escapes is low. Juveniles used in pangasius farming come from Vietnamese hatcheries and the trade of wild-caught broodstock is limited.
- Panagsius farming in Vietnam is linked to illegal disposal of waste into adjoining waterways with cumulative impacts that contribute to water pollution. However, certified farms are assumed to dispose of waste properly.
- Profile not yet complete.

### **General Notes**

The government requires pangasius farms to be managed under a zonal approach.

### **References:**

Good Fish Guide - Basa, Tra, Catfish or Vietnamese River Cobbler

Ocean Wise ratings for catfish

Seafood Watch, Vietnam Sutchi Catfish (Pangasius) Report

Patagonian				
toothfish		Not certified or in	Sustainability	
Dissostichus eleginoides	Longlines	a FIP	not rated	$\checkmark$
South American - Argentine				
Fishery countries:				
Argentina				

### **Environmental Notes**

• Profile not yet complete.

### **General Notes**

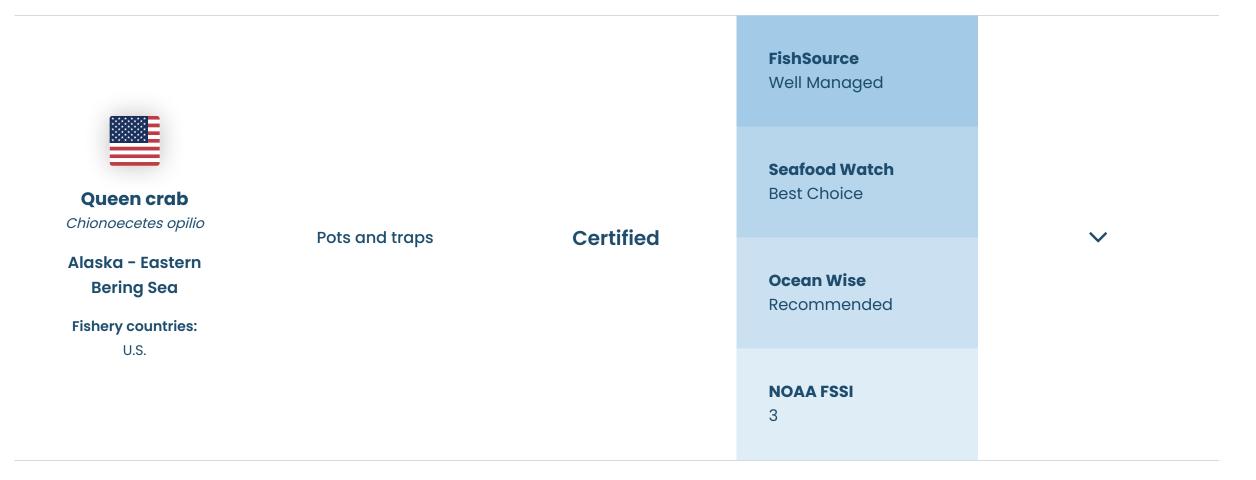
• No additional notes.

*	Longlines	Not certified or in a FIP	<b>FishSource</b> Needs Improvement	~
Patagonian toothfish			Seafood Watch	
Dissostichus eleginoides South American -			Avoid	
Chilean - Chile South 47°S			Ocean Wise	
<b>Fishery countries:</b> Chile			Not recommended	

- There are risks to seabirds and marine mammals with this fishery, but there are mitigation measures in place.
- Bycatch for this fishery is a risk, but there is insufficient data available to assess significance.
- This fishery is unlikely to have a significant impact on the sea bed.

### **General Notes**

• No additional notes.



### **Environmental Notes**

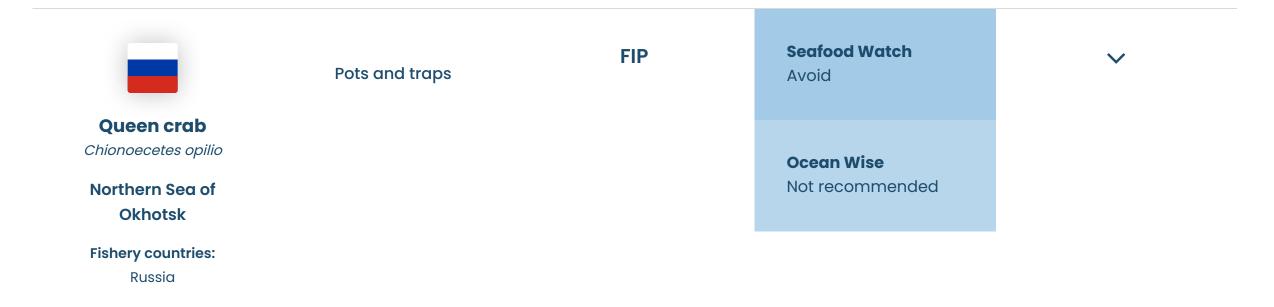
- This fishery is unlikely to impact PET species.
- Bycatch for this fishery is considered low.
- This fishery is unlikely to have a significant impact on the sea bed.

### **General Notes**

• This fishery is certified through the Alaska Responsible Fisheries Management (RFM) Program.

#### References

Alaska Seafood Marketing Institute, RFM Certification: Alaska Crab



- There are potential risks to PET species with this fishery, but there is insufficient data available to assess significance.
- Bycatch is a risk for this fishery, but there is insufficient data available to assess significance.
- This fishery is unlikely to have a significant impact on the sea bed.

### **General Notes**

#### References

Crab Catchers Association, Russian Far East Crab FIP

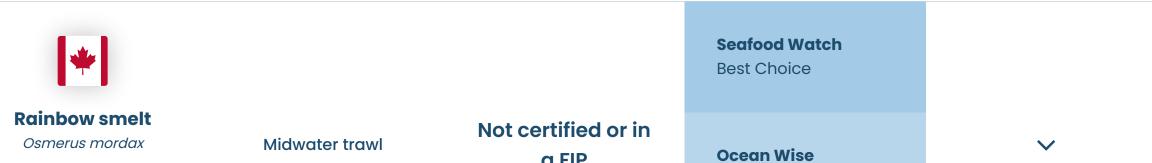


### **Environmental Notes**

- This fishery is unlikely to impact PET 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



a FIP

Recommended

Lake Erie

**Fishery countries:** 

Canada

### **Environmental Notes**

- There is a lack of information on interactions with PET species in this fishery.
- Bycatch is a risk for this fishery, but there is insufficient data available to assess significance.
- Profile not yet complete.

### **General Notes**

No additional notes



### Rainbow trout, Steelhead trout

Oncorhynchus mykiss

Chile

#### **Fishery countries:**

Chile

### **Environmental Notes**

- Fishmeal and fish oil inclusion levels in Chilean trout feeds are estimated to be 12% and 5.7%, respectively. A feed footprint consisting of both total land and ocean area of 7.56 ha was calculated to be required to produce the feed ingredients necessary for 1 t of farmed fish.
- More than 500,000 farmed trout have escaped each year since the early 1990s, and the total number of escapes is potentially much higher due to undetected or unreported losses. Even though rainbow trout are established in the wild due to historical stocking, the escaped trout have contributed to the creation of feral populations that impact native fish through predation and resource competition. There's also some concern about the potential for the spread of disease from farmed trout to wild, native fish.
- Because of the open nature of net pen systems, virtually all waste discharges directly to the surrounding environment with little or no intervention. Monitoring day-to-day effluent discharges is not required in Chile, so availability of reliable data is limited. Literature suggests impacts beyond the immediate vicinity of farms are unlikely, but there is growing concern over the potential cumulative impacts in relation to the carrying capacity of the surrounding environment. Antibiotics are estimated to be used more than once per production cycle.

### **General Notes**

#### References

Seafood Watch, Chile Rainbow Trout Report



### **Environmental Notes**

• Data on the feed ingredients and sources are limited. Typical feed conversion ratios (FCR) of 1.35 for trout in raceways and 1.50 for net pens are used. Average fishmeal and fish oil inclusion levels in trout feeds are estimated to be 20.0% and 6.3% respectively. Information regarding

the sustainability of the fishery sources of marine ingredients is very limited.

- The risk of escapes from raceway systems in Colombia is considered low and net pen is considered moderate. Regulations in Colombia regarding interactions with wildlife at aquaculture facilities are minimal, and there is no clear enforcement. There is limited disease reporting in Colombia; raceways and net pens are open systems that have an inherent risk of disease transmission and amplification.
- There is a lack of data on water quality, use of chemicals and effluent monitoring. While chemical use appears to be low, the legal system doesn't adequately manage its use. Due to the openness of the net pens, there is a greater risk of affecting non‐ target organisms.

### **General Notes**

#### References

Seafood Watch, Farmed Trout Columbia Report



- Rainbow trout is fed a high energy diet with moderate amounts of fishmeal and fish oil (approximately 20% and 6%, respectively).
- Potential escapes pose no significant risk of additional ecological impacts.
- Regulatory oversight of effluent and chemical use in U.S. ponds and outdoor flowthrough raceways are strong, and the industry follows best practices to minimize disease.

### **General Notes**

#### References

Seafood Watch, U.S. Farmed (Net Pens) Rainbow Trout Report

Seafood Watch, U.S. Farmed (Raceways and Ponds) Rainbow Trout Report



### **Environmental Notes**

- Rainbow trout is fed a high energy diet with moderate amounts of fishmeal and fish oil (approximately 20% and 6%, respectively).
- Potential escapes pose no significant risk of additional ecological impacts.
- Regulatory oversight of effluent and chemical use in U.S. ponds and outdoor flowthrough raceways are strong, and the industry follows best practices to minimize disease.

### **General Notes**

#### References

Seafood Watch, U.S. Farmed (Net Pens) Rainbow Trout Report

Seafood Watch, U.S. Farmed (Raceways and Ponds) Rainbow Trout Report

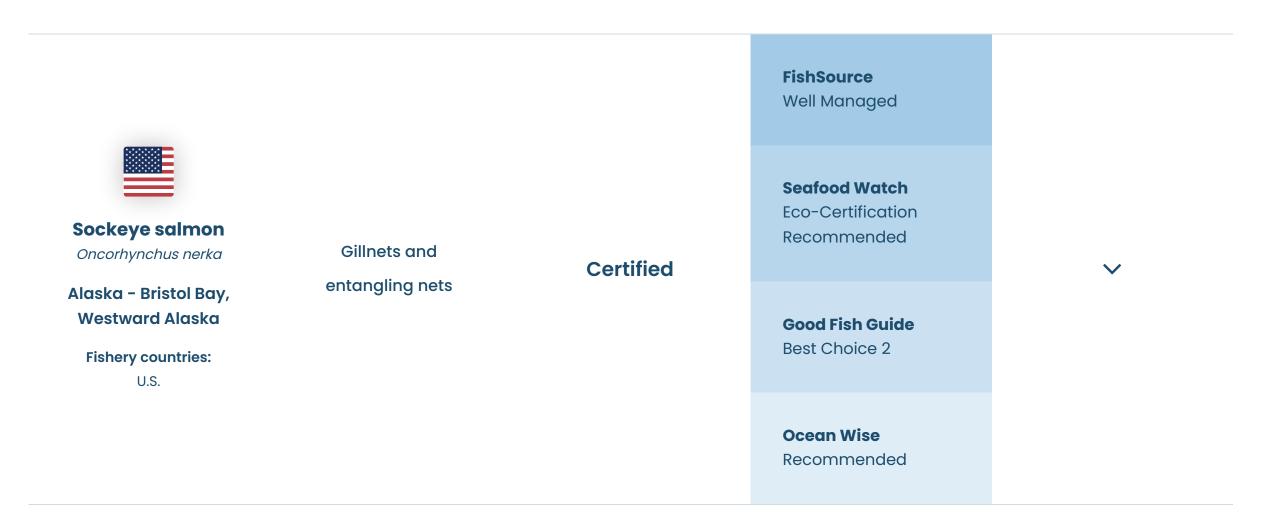


### **Environmental Notes**

- This fishery is unlikely to have a significant impact on the sea bed.
- Profile not yet complete.

### **General Notes**

Fishery Progress, Indonesian Longline Demersal Fish



### **Environmental Notes**

- This fishery is unlikely to impact PET species.
- Bycatch for this fishery is considered low.
- This fishery is unlikely to have a significant impact on the benthic habitat.

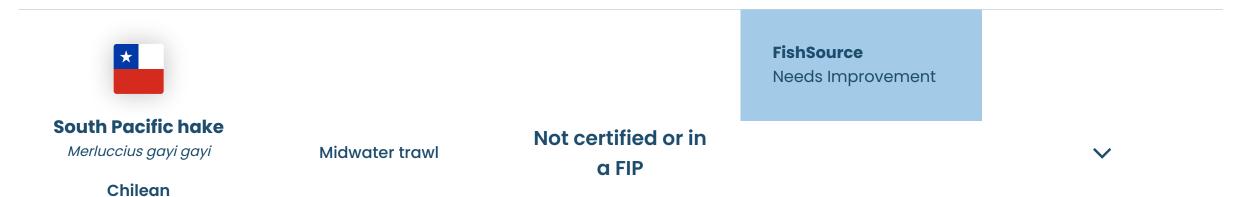
### **General Notes**

#### Caveat

The environmental notes for this fishery are based on a provisional assessment and are not derived from the FishSource profile.

#### References

Intertek Moody Marine, 2013, MSC Public Certification Report for the Alaska Salmon Fishery



### Fishery countries:

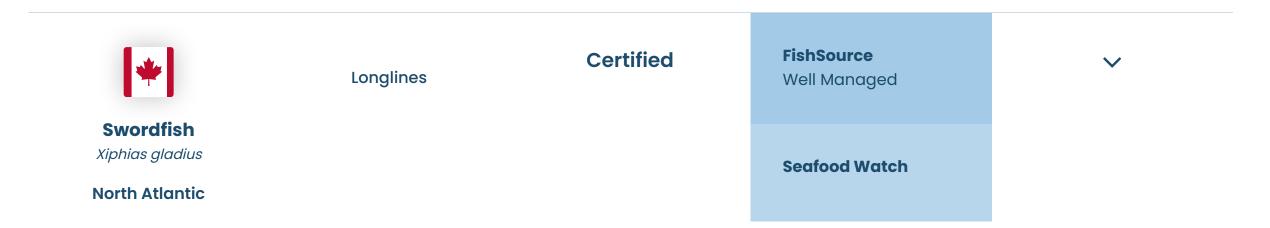
Chile

### **Environmental Notes**

- There are risks to seabirds and marine mammals with this fishery, but there are mitigation measures in place.
- Bycatch is a risk in this fishery.
- This fishery is unlikely to have a significant impact on the benthic habitat.

### **General Notes**

• No additional notes



Eco-Certification Recommended

**Good Fish Guide** Best Choice 2

Ocean Wise Recommended

### **Environmental Notes**

• Profile not yet complete.

### **General Notes**

• No additional notes



### **Environmental Notes**

- There are risks to sea turtles 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.



- There are risks to sea turtles 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



### **Environmental Notes**

- There are risks to sea birds, sea turtles and sharks with this fishery.
- Bycatch is a significant risk for this fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

### **General Notes**

#### References

Seafood Watch, 2016, Atlantic Ocean Swordfish, Albacore, Bigeye and Yellowfin Tuna (Longline) Seafood Watch Report

**FishSource** Managed



#### **Environmental Notes**

- There is a risks to seabirds and sea turtles with this fishery.
- Bycatch for this fishery includes tuna, billfish and sharks.
- This fishery is unlikely to have a significant impact on the sea bed.

### **General Notes**

• No additional notes.

			<b>Seafood Watch</b> Avoid	
Tanner crab				
Chionoecetes bairdi	Pots and traps	FIP	Ocean Wise	$\checkmark$
W Bering Sea			Not recommended	
Fishery countries:				
U.S.				

### **Environmental Notes**

• Profile not yet complete.

### **General Notes**

#### References

Crab Catchers Association, Russian Far East Crab FIP



### **Environmental Notes**

- Tilapia require relatively low inputs of fishmeal and fishoil from marine feed sources in their diet. However, there are significant concerns about the sustainability of feed inputs from domestic sources, which are produced from fisheries that are fully exploited overexploited, or depleted.
- There is little infomation available regarding impacts of Chinese tilapia production on wild species, includings impacts from escapes, disease outbreaks, and interactions with predators and other wildlife. Nile tilapia are considered highly invasive and there are documented examples of tilapia populations outcompeting local fish species for resources in Chinese waterways. Despite this, there is no information on tilapia escapes at a farm level. In addition, there is little information about on-farm diseases in Chinese tilapia production and disease outbreaks pose a risk to wild fish populations. There is no information regarding interactions with wildlife which may include migrating birds.
- Pollution from nutrients and organic matter, as well as chemical inputs, may affect local water quality. There is limited information
  regarding on-farm chemical use and the impact of effluent released by tilapia pond‐based farms in China. But there is evidence of
  the use of illegal chemicals and of antibiotics important to human health in Chinese tilapia production.

### **General Notes**

Area-based approaches to aquaculture are included in the national and provincial legislation, but it is unclear whether zonal approaches to siting and production are used.

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

#### **References:**

#### <u>FishSource - Tilapia, China</u>

<u>Seafood Watch, Global Aquaculture Alliance BAP Benchmarking Report (2-, 3-, 4-star Tilapia Farms BAP Standards)</u>

Seafood Watch report for farmed tilapia, China



Certified

FishSource

	Gillnets and	Well	Managed	~
<b>Walleye</b> Sander vitreus	entangling nets			
Lake Erie western and central Fishery countries:		Eco-	food Watch Certification ommended	
Canada			<b>an Wise</b> recommended	

- There are risks to PET species with this fishery, but there is insufficient data available to assess significance.
- There is a lack of information on bycatch in this fishery.
- 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

White bass				
Morone chrysops	Gillnets and	Not certified or in	Sustainability	$\checkmark$
Lake Erie, Lake Winnipeg	entangling nets	a FIP	not rated	~
Fishery countries:				
Canada				

• Profile not yet complete.

### **General Notes**

• No additional notes

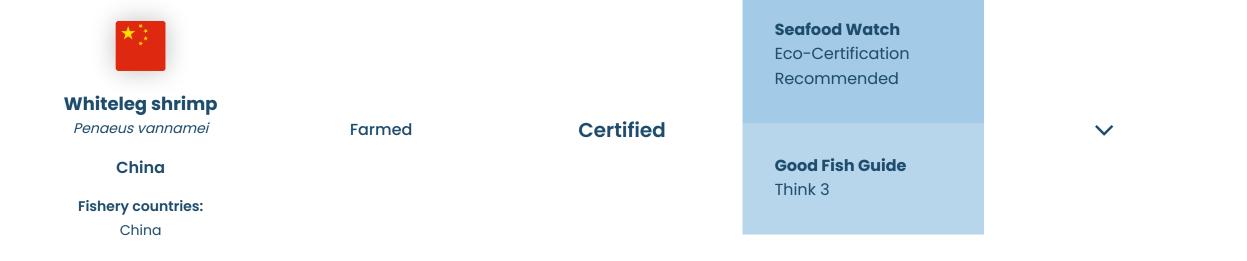


### **Environmental Notes**

- There are risks to PET species with this fishery, but there is insufficient data available to assess significance.
- Bycatch is a risk for this fishery, but there is insufficient data available to assess significance.
- Profile not yet complete.

#### **General Notes**

• No additional notes



### **Environmental Notes**

- Fishmeal and fish oil from marine feed sources are used. At least 50% of the feed used in certified production is required to be responsibly or sustainably sourced.
- Biosecurity measures minimise disease outbreaks and escapes.
- Chemical usage and effluent are monitored and limited.

### **General Notes**

The government has adopted a farm-based approach to aquaculture regulations and licensing.

#### References

Good Fish Guide, Prawn, King (whiteleg), prawns, GAA BAP certification (2 and 3\*)

FishSource - Shrimp, China



### **Environmental Notes**

- Fishmeal and fish oil from marine feed sources are used. At least 50% of the feed used in certified production is required to be responsibly or sustainably sourced.
- 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.
- 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.

### **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:**

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

<u>Good Fish Guide - Prawn, King (whiteleg), prawns, Global, GAA BAP certification (4\*)</u>

<u>Good Fish Guide - Prawn, King (whiteleg), prawns, Global, GAA BAP certification (2 and 3\*)</u>

Seafood Watch, India Farmed Giant Tiger Prawn and Whiteleg Shrimp Report

Seafood Watch, Recommended Eco-Certifications for Whiteleg shrimp, Farmed



### **Environmental Notes**

- Fishmeal and fish oil from marine feed sources are used. Certification criteria encourage the use of responsibly sourced marine products in feed.
- 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.

• Pollution from nutrients and organic matter, as well as chemical inputs, may affect local water quality and cumulative impacts across a region may occur.

### **General Notes**

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

Legislation on zonal planning that is relevant to aquaculture does exist. A zonal approach to aquaculture is being introduced via an Aquaculture Improvement Project (AIP) in Muncar, Banyuwangi district, East Java.

#### References

Good Fish Guide - Prawn, King (whiteleg), prawns, Global, GAA BAP certification (4\*)

Seafood Watch, Indonesian Giant Tiger Prawn and Whiteleg Shrimp Report

Seafood Watch, Recommended Eco-Certifications for Whiteleg shrimp, Farmed



### **Environmental Notes**

- There are risks to seabirds, sea turtles and marine mammals with this fishery.
- Bycatch is a risk for this fishery, but there are mitigation measures in place.
- Bottom trawls will directly impact on the sea bed.

### **General Notes**

• No additional notes

**Seafood Watch** Eco-Certification Recommended



### **Environmental Notes**

- Fishmeal and fish oil from marine feed sources are used. At least 50% of the feed used in certified production is required to be responsibly or sustainably sourced.
- 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.
- 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.

### **General Notes**

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

Public information on zonal approaches to planning and production of shrimp farming in Thailand is limited.

#### **References:**

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

<u>Good Fish Guide - Prawn, King (whiteleg), prawns, Global, GAA BAP 4\*</u>

<u>Good Fish Guide - Prawn, King (whiteleg), prawns, Global, GAA BAP 2 and 3\*</u>

Seafood Watch, Recommended Eco-Certifications for Whiteleg shrimp, Farmed

Seafood Watch, Thailand Farmed Whiteleg Shrimp Report



### **Environmental Notes**

- Fishmeal and fish oil from marine feed sources are used. At least 50% of the feed used in certified production is required to be responsibly or sustainably sourced.
- Disease outbreaks are uncommon in U.S. shrimp aquaculture and as such the need for chemical use is demonstrably low. Risk of escape is considered low-moderate. Juvenile shrimp for stocking are sourced exclusively from domestic hatcheries in the U.S.
- There is no concern regarding pollution from nutrients or organic matter.

### **General Notes**

The government has adopted a farm-based approach to aquaculture regulations and licensing.

#### References

Seafood Watch, U.S. Farmed Whiteleg Shrimp Report



**Seafood Watch** Eco-Certification Recommended

Penaeus vannamei	Farmed	Certified		$\checkmark$
Vietnam			Good Fish Guide	
Fishery countries:			Think 3	
Vietnam				

### **Environmental Notes**

- Fishmeal and fishoil from marine feed sources are used. Certification criteria encourage the use of responsibly sourced marine products in feed.
- 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 escapes.
- 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, moderating the impact of effluents on water quality. There is a lack of data on the quantity of chemical inputs, but evidence suggests that illegal antibiotics are sometimes used on Vietnamese shrimp farms.

### **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:**

<u>Good Fish Guide - Prawn, King (whiteleg), prawns, Global, ASC</u>

Good Fish Guide - Prawn, King (whiteleg), prawns, Global, GAA BAP certification (2 and 3\*)

<u>Good Fish Guide - Prawn, King (whiteleg), prawns, Global, GAA BAP (4\*)</u>

FishSource - Shrimp, Vietnam

			<b>Seafood Watch</b> Avoid	
Whiteleg shrimp Penaeus vannamei Vietnam	Farmed	Not certified or in an AIP	<b>Good Fish Guide</b> Avoid 5	$\checkmark$
<b>Fishery countries:</b> Vietnam			<b>Ocean Wise</b> Not recommended	

### **Environmental Notes**

- Fishmeal and fishoil from marine feed sources are used.
- 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 escapes.
- 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, moderating the impact of effluents on water quality. There is a lack of data on the quantity of chemical inputs, but evidence suggests that illegal antibiotics are sometimes used on Vietnamese shrimp farms. Environmental issues are mitigated by the certification standards.

#### **General Notes**

The aquaculture industry is currently managed under a farm-based approach.

#### **References:**

<u>Good Fish Guide - Prawn, King (whiteleg), prawns</u>

Seafood Watch, Vietnam Giant Tiger Prawn and Whiteleg Shrimp Report

FishSource - Shrimp, Vietnam

Yellowfin sole Limanda aspera	Bottom trawl	Certified	Well Managed	
			<b>Seafood Watch</b> Best Choice	~
Bering Sea and	Bottom trawn	Certined		<b>↓</b>
Aleutian Islands			Ocean Wise Recommended	
Fishery countries:			Reconniciended	
U.S.				
			<b>NOAA FSSI</b> 4	

**FishSource** 

#### **Environmental Notes**

- This fishery is unlikely to impact PET species.
- Bycatch for this fishery is considered low.
- Bottom trawls will directly impact on the sea bed.

### **General Notes**

#### References

MRAG Americas, 2015, MSC Public Certification Report for Bering Sea-Aleutian Islands Alaska Flatfish Fishery

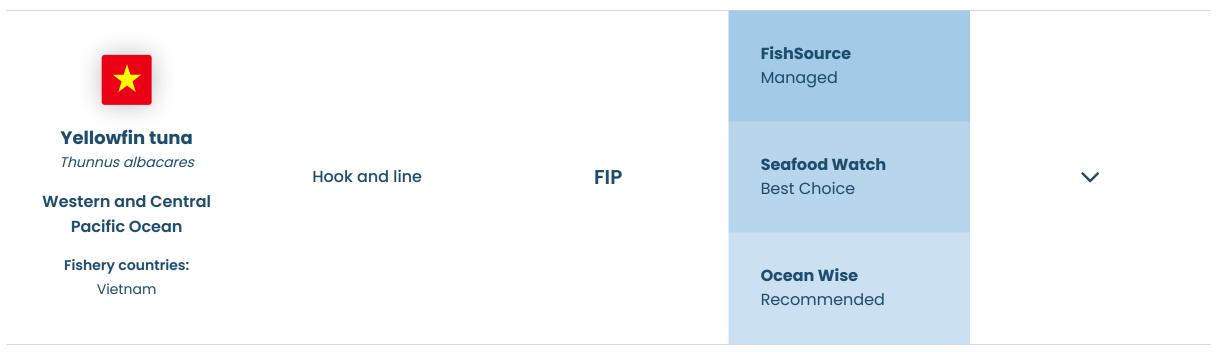


### **Environmental Notes**

- There is a risk to PET species with this fishery. Longlines present a hazard to turtles, seabirds and sharks but these risks can be reduced through proper management of fishing gear.
- There is bycatch for this fishery but the scale of the issue is not established.
- This fishery is unlikely to have a significant impact on the sea bed.

#### **General Notes**

• No additional notes.



### **Environmental Notes**

- There are risks to turtles, seabirds and sharks, but these risks can be reduced through proper management of fishing gear.
- There is bycatch for this fishery but the scale of the issue is not established.
- This fishery is unlikely to have a significant impact on the sea bed.

#### **General Notes**

#### References

Fishery Progress, Vietnam yellowfin tuna - longline/handline FIP



### **Ocean Wise**

Not recommended

### **Environmental Notes**

- There is a risk to PET species with this fishery. Longlines present a hazard to turtles, seabirds and sharks, but these risks can be reduced through proper management of fishing gear.
- There is bycatch for this fishery but the scale of the issue is not established.
- This fishery is unlikely to have a significant impact on the sea bed.

### **General Notes**

No additional notes.



### **Environmental Notes**

- This fishery is unlikely to impact protected, endangered and threatened (PET) species.
- Bycatch is considered low for this fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

### **General Notes**

#### References

Fishery Progress, Indonesia Western and Central Pacific Ocean yellowfin tuna - handline (AP2HI, IPNLF, MDPI)



### **Environmental Notes**

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

### **General Notes**

• No additional notes.

			<b>FishSource</b> Well Managed	
Yellowfin tuna Thunnus albacares Western and Central Pacific Ocean - WCPFC	Longlines	Certified	<b>Seafood Watch</b> Eco-Certification Recommended	$\checkmark$
<b>Fishery countries:</b> Marshall Islands			<b>Ocean Wise</b> Recommended	

### **Environmental Notes**

- There are risks to seabirds, sea turtles and marine mammals with this fishery, but there are mitigation measures in place.
- Bycatch is a risk for this fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

### **General Notes**

• The <u>Marshall Islands bigeye & yellowfin tuna - pelagic longline FIP</u> entered MSC full assessment in December 2018 and achieved MSC certification in October 2019.

*		FIP	<b>FishSource</b> Managed	
<b>Yellowfin tuna</b> Thunnus albacares	Longlines		<b>Seafood Watch</b> Avoid	
Western and Central Pacific Ocean - WCPFC Fishery countries:			<b>Good Fish Guide</b> Think 3	~
Micronesia				

### **Environmental Notes**

- There is a risk to PET species with this fishery. Longlines present a hazard to turtles, seabirds and sharks, but these risks can be reduced through proper management of fishing gear.
- Bycatch for this fishery includes billfish and other tuna species, and sharks.
- This fishery is unlikely to have a significant impact on the sea bed.

### **General Notes**

#### References

Fishery Progress, Federated States of Micronesia yellowfin and bigeye tuna - longline



Thunnus albacares

Western and Central Pacific Ocean -WCPFC

> Fishery countries: U.S.

Seafood Watch Good Alternative

**Good Fish Guide** Think 3

Ocean Wise Recommended

### **Environmental Notes**

- There are risks to seabirds, sea turtles and 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



### **Environmental Notes**

- This fishery is unlikely to impact PET species.
- Bycatch for this fishery is considered low.
- Bottom trawls will directly impact on the sea bed.

### **General Notes**

• No additional notes



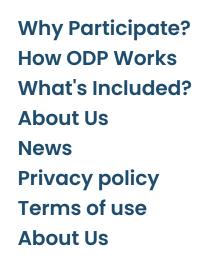
## **Profile Download**

ODP profiles from previous years are available to download as PDFs below.

2018

2019









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