

Thai Union

Thai Union Group PCL is the world's seafood leader bringing high quality, healthy, tasty and innovative seafood products to customers across the world for more than 40 years. Today, Thai Union is regarded as one of the world's leading seafood producers and is one of the largest producers of shelf-stable tuna products with annual sales exceeding THB 126.3 billion (US\$ 4.1 billion) and a global workforce of over 44,000 people who are dedicated to pioneering sustainable, innovative seafood products. As well as its commercial offices, the company owns and maintains production facilities in locations such as the Thailand, Seychelles, Ghana, France, Portugal, Poland, Germany and the U.S. The company's global brand portfolio includes market-leading international brands such as Chicken of the Sea, John West, Petit Navire, Parmentier, Mareblu, King Oscar, and Rügen Fisch and Thai-leading brands SEALECT, Fisho, Qfresh, Monori, Bellotta and Marvo.

Number of fisheries used	Number of certified fisheries	Number of fisheries in a FIP	Number of farmed sources used	2021 Number of certified farmed sources
167	36	49	44	21
		Production Methods Used	1	
Midwater trawl	Purse seine	 Hook and line 	• Rake / hand gathered	• Farmed



- Bottom trawl
- Purse seine
- Associated purse seine
- FAD-free
- (unassociated) purse
- seine
- Seine nets
- Gillnets and entangling

nets

Summary

Thai Union (TU) is committed to "Healthy Living, Healthy Oceans" as our company's strategic focus. TU understands that the oceans are the foundation of our business and that healthy oceans are critical for the future of our planet, particularly in combating climate change. The company's mission is to be the seafood industry's leading agent of change, making a real positive difference for seafood consumers, our customers, and the entire seafood industry.

• Longlines

lines

· Handlines and pole-

In 2016, Thai Union introduced its SeaChange® sustainability strategy. SeaChange® is conceived as a journey that covers every aspect of the TU's business: from stewardship of the oceans to managing waste; from responsible treatment of workers to building brighter futures for our surrounding communities. The backbone of SeaChange[®] is the ability to fully trace our products – from catch to consumption. With full traceability

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

in place, TU is able to identify, investigate and improve performance on key issues in the four work programs of SeaChange®: Safe and Legal Labor, Responsible Sourcing, Responsible Operations and People and Communities.

This can only be achieved through collaboration and shared goals, as highlighted by UN SDG 17 – Partnerships for the Goals. TU is an active member in many pre-competitive collaborative initiatives and has a multitude of relationships and projects underway with NGOs, governments and associations. TU is proud to be a member of the United Nations Global Compact, and a founding member of the International Seafood Sustainability Foundation (ISSF). TU engages with our suppliers on many pilot projects as well as Fishery and Aquaculture Improvement Projects to drive continuous improvement through all levels of the supply chain. TU's ongoing work on sustainability led to the company being listed on the Dow Jones Sustainability Indices for the seventh consecutive year in 2020, and ranked number two in the world on the Food Products Industry Index. TU was also named to the FTSE4Good Emerging Index for the fifth straight year in 2020.

The scope of the profile includes wild-caught and farmed seafood sourced for Thai Union's branded and private labelled products in 2020.

- 🔇 <u>www.seachangesustainability.org</u>
- https://www.thaiunion.com/en/sustainability/report
- https://www.thaiunion.com/en/sustainability/code-of-conduct

Associated Fisheries



ap data ©2023

Species and
Location

Production Methods Certification or Improvement Project

Sustainability Ratings

Region of Sale

Notes

Alaska pollock

Theragra chalcogramma

Gulf of Alaska

Fishery countries: United States

Midwater

trawl

Certified

Good Fish Guide Best Choice 1

FishSource

Well Managed

Seafood Watch Eco-Certification Recommended

Europe

 \checkmark

Ocean Wise



Environmental Notes

- This fishery is unlikely to have direct impacts on 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.

References

MSC: Alaska pollock - Gulf of Alaska

Good Fish Guide - Pollock, Alaska, Walleye, Pelagic trawl, North East Pacific (FAO 67), Gulf of Alaska, Marine Stewardship Council (MSC).

<u>Seafood Watch Recommendation for Walleye pollock, Northeast Pacific Ocean, Midwater trawls, Marine Stewardship Council Certified Alaska</u> <u>pollock - Gulf of Alaska Fishery</u>



Environmental Notes

- This fishery is unlikely to have direct impacts on 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.

References

MSC: Russia Sea of Okhotsk pollock

Good Fish Guide - Pollock, Alaska, Walleye, Pelagic trawl, North West Pacific (FAO 61), Sea of Okhotsk, Marine Stewardship Council (MSC).

<u>Seafood Watch Recommendation for Walleye pollock, Northeast Pacific Ocean, Midwater trawls, Marine Stewardship Council Certified Alaska</u> <u>pollock - Gulf of Alaska Fishery</u>

Albacore Thunnus alalunga

Indian Ocean

Fishery countries:

Indonesia

FishSource Needs Improvement

Seafood Watch Avoid

U.S.

 \checkmark

Good Fish Guide Think 4

Ocean Wise



Environmental Notes

- There are risks to seabirds, sea turtles, marine mammals and sharks with 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.

FIP

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

Longlines

General Notes

• Part of this fishery is in the Indonesia Indian Ocean and Western Central Pacific Ocean tuna and large pelagics - longline FIP.

References



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

General Notes

• This fishery is part of the Indian Ocean tuna - Iongline (Thai Union) FIP.

References

<u>Good Fish Guide - Tuna, albacore, Indian Ocean, Longline</u>



Taiwan

Seafood Watch Avoid

Good Fish Guide Think 4

Ocean Wise Not

recommended

Environmental Notes

- There are risks to seabirds, sea turtles, marine mammals and sharks with 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

• Part of this fishery is in the Indian Ocean albacore tuna - Iongline (Bumble Bee/FCF) FIP.

References

<u>Good Fish Guide - Tuna, albacore, Indian Ocean, Longline</u>

Seafood Watch Recommendation for Albacore, Longline (deepset), Indian Ocean

purse seine or in a FIP not rated Indian Ocean Fishery countries: Seychelles
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• Profile not yet complete.

General Notes

• All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.



Environmental Notes

- This fishery is unlikely to impact ETP species; incidental capture by troll and pole-and-line gear is uncommon.
- Bycatch for this fishery is considered low.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

MSC: North Atlantic albacore artisanal fishery

Bureau Veritas Iberia, June 2016, MSC Public Certification Report for North Atlantic albacore artisanal fishery



Albacore Thunnus alalunga

North Atlantic

Fishery countries: Portugal, Spain Handlines

and pole-

lines

Not certified or in a FIP

Good Fish Guide Best Choice 2 Europe 🗸 🗸

Ocean Wise

FishSource Managed

Seafood Watch

Best Choice



Environmental Notes

- This fishery is unlikely to impact ETP species; incidental capture by pole-and-line gear is uncommon.
- Bycatch for this fishery is considered low.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Seafood Watch Recommendation for Albacore, North Atlantic, Handlines and hand-operated pole-and-lines





- This fishery is unlikely to impact ETP species; incidental capture by pole-and-line gear is uncommon.
- Bycatch for this fishery is considered low, but there are concerns about unknown impacts on bait fish used in the fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Seafood Watch Recommendation for Albacore, South Atlantic, Handlines and hand-operated pole-and-lines





- This fishery is unlikely to impact ETP species; incidental capture by troll gear is uncommon.
- Bycatch for this fishery is considered low.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Good Fish Guide - Tuna, albacore, Troll, North Pacific

Seafood Watch Recommendation for Albacore, Trolling lines, Marine Stewardship Council Certified AAFA and WFOA North Pacific albacore tuna Fishery



Environmental Notes

- There are risks to sharks, sea turtles and seabirds with 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

• This fishery is part of the Pacific Ocean tuna - longline (Liancheng) FIP.

References





- There are risks to sharks, sea turtles and seabirds with 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

• This fishery is part of the Pacific Ocean tuna - longline (Thai Union) FIP.

References

<u>Good Fish Guide - Tuna, albacore, Longline, North Pacific</u>



Good Fish Guide Best Choice 2

Ocean Wise Recommended

Environmental Notes

- This fishery is unlikely to impact ETP species.
- Bycatch for this fishery is considered low but the fishery may have impacts on fish populations used for bait.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

<u>Good Fish Guide - Tuna, albacore, Pole & Line, North Pacific</u>

Seafood Watch Recommendation for Albacore, Japan - North Pacific, Handlines and hand-operated pole-and-lines

AlbacoreThunnus alalungaNorth PacificFishery countries:United States	Handlines and pole- lines	Not certified or in a FIP	FishSource Managed	Asia	
			Seafood Watch Best Choice		

Good Fish Guide Best Choice 2

Ocean Wise Recommended

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

References

Seafood Watch Recommendation for Albacore, Handlines and hand-operated pole-and-lines, United States - North Pacific





Environmental Notes

- There are risks to sharks, sea turtles and seabirds with 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

References

Good Fish Guide - Tuna, albacore, Longline, North Pacific

Albacore Thunnus alalunga

South Pacific

Fishery countries: New Zealand

FishSource Well Managed

Seafood Watch **Eco-Certification** Recommended

Good Fish Guide

Europe

Best Choice 2

 \checkmark

Ocean Wise



Environmental Notes

- This fishery is unlikely to impact ETP species; incidental capture by troll gear is uncommon.
- Bycatch for this fishery is considered low.
- This fishery is unlikely to have a significant impact on the sea bed.

Hook and

line

Certified

General Notes

References

MSC: New Zealand albacore tuna troll



- There are risks to seabirds, sea turtles and marine mammals with 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

References

MSC: Australian Eastern Tuna and Billfish Fishery (albacore tuna, yellowfin tuna, bigeye tuna and swordfish)

- MSC: Fiji Albacore, Yellowfin and Bigeye Tuna longline
- MSC: Solomon Islands longline albacore and yellowfin tuna fishery

MSC: <u>SZLC, CSFC & FZLC Cook Islands EEZ South Pacific albacore, yellowfin and bigeye longline</u>

Good Fish Guide - Tuna, albacore, Longline, South Pacific

Seafood Watch Recommendations for Albacore, Longlines, MSC Certified

			FishSource Managed		
Albacore					
Thunnus alalunga	Longlines	FIP	Good Fish Guide	Asia	\checkmark
South Pacific			Think 3		
Fishery countries: Cook Islands, Fiji, Micronesia, Vanuatu					

- There are risks to sharks, sea turtles and seabirds with 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

• This fishery is part of the Pacific Ocean tuna - longline (Liancheng) FIP.

References

Good Fish Guide - Tuna, albacore, Longline, South Pacific



FishSource Managed

U.S.

 \checkmark

Albacore Thunnus alalunga

South Pacific

Fishery countries:

Vanuatu

Good Fish Guide Think 3

- There are risks to sharks, sea turtles and seabirds with 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

• This fishery is part of the Pacific Ocean tuna - longline (Thai Union) FIP.

References

Good Fish Guide - Tuna, albacore, Longline, South Pacific



Environmental Notes

- There are risks to seabirds, sea turtles, marine mammals, and sharks with 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

• Part of this fishery is in the Indonesia Indian Ocean and Western Central Pacific Ocean tuna and large pelagics - longline FIP.

References

<u>Good Fish Guide - Tuna, albacore, South Pacific, Longline</u>



South Pacific

Fishery countries: Australia, Micronesia, Nauru, South Korea, Taiwan, Vanuatu

Good Fish Guide Think 3

Environmental Notes

- There are risks to sharks, sea turtles and seabirds with 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

References

Good Fish Guide - Tuna, albacore, Longline, South Pacific

 FishSource

 Managed



Thunnus alalunga	Longlines	Not certified or in a FIP	Good Fish Guide Think 3	U.S.	\checkmark
South Pacific		of in a Fir			
Fishery countries:					
Fiji					

Environmental Notes

- There are risks to sharks, sea turtles and seabirds with 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

References

Good Fish Guide - Tuna, albacore, Longline, South Pacific

Image: big time is the second sec	Not certified or in a FIP	Sustainability not rated	Asia, U.S.	
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Environmental Notes

- The main risk to ETP species from this fishery is from entanglement of marine mammals, especially the critically endangered North Atlantic Right whale, in lobster gear. Management measures are in place in the Canadian lobster fisheries to reduce the likelihood of interactions occurring.
- Bycatch for this fishery is likely to be low.
- Lobster traps are unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes



Industrial		
Fishery countries:		
Peru		

Environmental Notes

- This fishery may impact food availability to ETP species. The FIP aims to better understand the impacts of the fishery on ETP species.
- Bycatch for this fishery is considered low. However, anomalous environmental conditions observed since 2013 have been associated with an increased catch of non-target species.
- This fishery is unlikely to have a significant impact on the sea bed. The FIP aims to better understand the impacts of the fishery on habitats.

General Notes

- This fishery is part of the <u>Peru anchovy industrial purse-seine FIP</u>.
- This fish plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.

References



- There is a lack of public information on interactions with ETP for this fishery.
- There is limited information on bycatch in this fishery but bycatch of hake is a risk.
- Bottom trawls will directly impact on the sea bed.

General Notes

• This fishery is part of the Argentina onshore red shrimp - bottom trawl FIP.

References

Seafood Watch Recommendation for Argentine red shrimp, Argentina, Southwest Atlantic Ocean, Bottom trawls, Coastal Fleet



Fishery countries:

Argentina

Seafood Watch Avoid

Ocean Wise Not recommended

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

• This fishery is part of the <u>Argentina offshore red shrimp - bottom trawl FIP</u>.

References

Seafood Watch Recommendation for Argentine red shrimp, Argentina, Southwest Atlantic Ocean, Bottom trawls



Atlantic chub mackerel Scomber colias	Purse seine	Not certified or in a FIP	Sustainability not rated	Europe	\checkmark
NE Atlantic					
Fishery countries: Spain, Portugal					

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Atlantic chub

mackerel

Scomber colias

Eastern Central

Atlantic

Fishery countries:

Morocco

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.

	FishSource Well Managed			
	Seafood Watch Eco-Certification Recommended			
Bottom trawl Certified		Europe	~	



Atlantic cod Gadus morhua

B

Fishery countries: Russia

Barents Sea

Good Fish Guide Best Choice 2

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.
- Bottom trawls will directly impact on the sea bed. MSC conditions and recommendations are in place to strengthen understanding of fishery interactions with sensitive habitat.

General Notes

• No additional notes.



Environmental Notes

- This fishery is unlikely to impact ETP species.
- There is bycatch for this fishery but bycatch is considered low and the fishery is unlikely to pose a serious risk to bycatch species.
- Longline gear is unlikely to have a significant impact on the sea bed.

General Notes

References

MSC: FIUN Barents & Norwegian Seas cod and haddock

Acoura Marine, August 2018, MSC Public Certification Report for FIUN Barents & Norwegian Seas Cod and Haddock Fishery



- There may be risks to ETP species with this fishery, but there is insufficient data available to assess significance.
- 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.



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Baltic Sea Gulf of Bothnia

Fishery countries:

Finland

Seafood Watch Eco-Certification Recommended

Ocean Wise Not recommended

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

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

References

MSC: Finland Baltic herring & sprat



Environmental Notes

- There may be risks to ETP species with this fishery, but there is insufficient data available to assess significance.
- 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.





- 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

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

References

MSC: SPSG, DPPO, PFA, SPFPO & KFO Atlanto-Scandian purse seine and pelagic trawl herring



Ocean Wise

recommended

Not

Clupea harengus

Purse seine

NE Atlantic Spring spawners

Fishery countries:

Norway

Certified

Europe

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- 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

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

References

MSC: SPSG, DPPO, PFA, SPFPO & KFO Atlanto-Scandian purse seine and pelagic trawl herring



Ocean Wise Recommended

- 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

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

References

MSC: Norway North Sea herring

	Midwater	Certified	FishSource Well Managed	Europe	\checkmark
Atlantic herring	trawl				
Clupea harengus North Sea					
Autumn spawners					
Fishery countries: United Kingdom					
			Seafood Watch Eco-Certification Recommended		

Good Fish Guide Think 3

Ocean Wise Recommended

- 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

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

References

MSC: Northern Ireland Pelagic Sustainability Group(NIPSG) Irish Sea-Atlantic mackerel & North Sea herring



Environmental Notes

- There may be risks to ETP species with this fishery, but there is insufficient data available to assess significance.
- 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.



FishSource Managed



Atlantic herring Clupea harengus

Skagerrak, **Kattegat and** western Baltic

Fishery countries: Denmark, Sweden **Midwater**

trawl

Not certified or in a FIP

Europe

Good Fish Guide Avoid 5

- 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

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

References

<u>Good Fish Guide - Herring or sild, Pelagic trawl, Purse seine, North East Atlantic (FAO 27), Baltic Sea (West), Skagerrak and Kattegat: Western</u> <u>Baltic Spring Spawners, 3a-d (subdivisions 20-24)</u>



Environmental Notes

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

General Notes

 In response to the suspension of the MSC certified fishery, a supply chain-led initiative called the North Atlantic Pelagic Advocacy (NAPA) Group was formed by retailers and processors in the UK, and has since expanded to include European retailers and processors. Thai Union has been a formal member of the group since April 2021. NAPA aims to develop a shared solution to sustainability issues in the North East Atlantic fisheries for mackerel, herring and blue whiting, and is seeking a formal agreement on catch limits for North East Atlantic Pelagic fisheries that reflects the scientific advice.





- Salmon rely on wild capture fisheries for feed.
- Atlantic salmon are not native to Australia. Farmed salmon escapes and disease outbreaks may impact on wild salmonids. In addition, impacts on water quality from salmon farms pose a threat to the endangered Maugean skate, found only in Macquarie Harbour on the west coast of Tasmania.
- Impacts on water quality are localized, but there is potential for cumulative impacts in densely farmed areas. Waste from high salmon production has been linked to low oxygen levels and pollution of the seabed in Macquarie Harbour, a sensitive waterway adjacent to a World Heritage Area.

General Notes

References

Seafood Watch, Recommended Eco-Certifications for Atlantic salmon, Aquaculture Stewardship Council (ASC) Certified

GoodFish Australia - Atlantic Salmon



Atlantic						
salmon			Sustainability			
Salmo salar	Farmed	Certified	not rated	Asia	\checkmark	
Australia						
Fishery countries:						
Australia						

Environmental Notes

- Salmon rely on wild capture fisheries for feed.
- Atlantic salmon are not native to Australia. Farmed salmon escapes and disease outbreaks may impact on wild salmonids. In addition, impacts on water quality from salmon farms pose a threat to the endangered Maugean skate, found only in Macquarie Harbour on the west coast of Tasmania.
- Impacts on water quality are localized, but there is potential for cumulative impacts in densely farmed areas. Waste from high salmon production has been linked to low oxygen levels and pollution of the seabed in Macquarie Harbour, a sensitive waterway adjacent to a World Heritage Area.

General Notes

References



- 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

Good Fish Guide, Salmon, Atlantic (Farmed), Chile

Seafood Watch Recommendation for farmed Atlantic Salmon, Chile



- 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

Good Fish Guide, Salmon, Atlantic (Farmed), Chile

Seafood Watch, Recommended Eco-Certifications for Atlantic salmon, Aquaculture Stewardship Council (ASC) Certified



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

Good Fish Guide, Salmon, Atlantic (Farmed), Chile

Seafood Watch report for farmed Atlantic Salmon, Chile



Environmental Notes

- Salmon rely on wild capture fisheries for feed.
- Farmed salmon escapes and disease outbreaks may impact on wild salmonids.
- Impacts on water quality are localized, but there is potential for cumulative impacts in densely farmed areas.

General Notes

• No additional notes.

Seafood Watch Eco-Certification Recommended



Atlantic salmon Salmo salar

Iceland

Fishery countries:

Iceland

Cert

Farmed

Certified

Ocean Wise Not recommended U.S.

 \checkmark
- Salmon rely on wild capture fisheries for feed, but responsible sourcing of inputs is encouraged for certified salmon.
- 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 salmon.

General Notes

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

References

<u>Seafood Watch, Recommended Eco-Certifications for Atlantic salmon, Aquaculture Stewardship Council (ASC) Certified</u>



Environmental Notes

- Salmon rely on wild capture fisheries for feed.
- Farmed salmon escapes and disease outbreaks may impact on wild salmonids.
- Impacts on water quality are localized, but there is potential for cumulative impacts in densely farmed areas.

General Notes

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

References

<u>Good Fish Guide - Salmon, Atlantic (Farmed), Europe, Organic certification</u>

	Farmed	Certified
Atlantic salmon Salmo salar		
Ireland		
Fishery countries: Ireland		

Seafood Watch Eco-Certification Recommended

Ocean Wise

recommended

Not

Europe

 \checkmark

- Salmon rely on wild capture fisheries for feed.
- Farmed salmon escapes and disease outbreaks may impact on wild salmonids.
- Impacts on water quality are localized, but there is potential for cumulative impacts in densely farmed areas.

General Notes

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

References

Seafood Watch, Recommended Eco-Certifications for Atlantic salmon, Aquaculture Stewardship Council (ASC) Certified



Norway

Fishery countries:

Norway

Ocean Wise Not recommended

- Salmon rely on wild capture fisheries for feed, but responsible sourcing of inputs is encouraged for certified salmon.
- 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 Norwegian salmon, but the use of non-chemical treatments for sea lice is increasing.

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.

References:

FishSource - salmon, Norway

<u>Good Fish Guide - Salmon, Atlantic (Farmed), Scotland and Norway, Aquaculture Stewardship Council (ASC) certification</u>

Seafood Watch, Recommended Eco-Certifications for Atlantic salmon, Aquaculture Stewardship Council (ASC) Certified

Seafood Watch report for farmed salmon, Norway



Environmental Notes

- Salmon rely on wild capture fisheries for feed. At least 50% of the feed used in certified production is required to be responsibly or sustainably sourced.
- 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 Norwegian salmon, but the use of non-chemical treatments for sea lice is increasing.

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.

References:

<u>FishSource - salmon, Norway</u>

<u>Good Fish Guide - Salmon, Atlantic (Farmed), Scotland and Norway, Global Aquaculture Alliance Best Aquaculture Practices (GAA BAP) 3* & 4*</u> <u>certified</u>

Seafood Watch report for farmed salmon, Norway



U.S.

- Salmon rely on wild capture fisheries for feed, but responsible sourcing of inputs is encouraged for certified salmon.
- 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 Norwegian salmon, but the use of non-chemical treatments for sea lice is increasing.

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.

References:

FishSource - salmon, Norway

Good Fish Guide - Salmon, Atlantic (Farmed), Scotland, Norway and Faroe Islands, GlobalG.A.P. certification

Seafood Watch report for farmed salmon, Norway



Environmental Notes

- Salmon rely on wild capture fisheries for feed.
- Farmed salmon escapes and disease outbreaks may impact on wild salmonids.
- Impacts on water quality are localized, but there is potential for cumulative impacts in densely farmed areas.

General Notes

• No additional notes.

	Farmed	Certified	Good Fish Guide Think 3	Europe	\checkmark
Atlantic salmon Salmo salar					
Scotland					
Fishery countries:					

- Salmon rely on wild capture fisheries for feed, but responsible sourcing of inputs is encouraged for certified salmon.
- 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.

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 operation.

References:

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

Good Fish Guide - Salmon, Atlantic (Farmed), Scotland, Norway and Faroe Islands, GLOBALG.A.P. certification

Good Fish Guide - Salmon, Atlantic (Farmed), Europe, Organic certification

Seafood Watch report for farmed salmon, Scotland





Avoi

Atlantic seabob

Xiphopenaeus kroyeri

Guyanese

Fishery countries:

Guyana

Bottom trawl

Not certified or in a FIP

> **Ocean Wise** Not recommended

U.S.

 \checkmark

- There is a risk to ETP species with this fishery.
- Bycatch is a risk for 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.



Environmental Notes

- Pangasius feed includes low levels of fishmeal and fish oil from marine feed sources but the feed used may not be responsibly sourced.
- A lack of data from uncertified production of pangasius means the extent of environmental impacts are unknown but concerns include a reliance on wild caught broodstock, disease transfer, escapes, and predator control methods.
- Pangasius farming in Vietnam is linked to unregulated disposal of waste into adjoining waterways with cumulative impacts that contribute to water pollution. Other concerns include chemical and antibiotic use, and freshwater depletion.

General Notes

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

References:

<u>Good Fish Guide - Basa, Tra, Catfish or Vietnamese River Cobbler (Farmed), Vietnam</u>

Farmed



Not certified or in an AIP Seafood Watch





Bay scallop Argopecten irradians

Worldwide

Fishery countries: China, Peru, United

States

Best Choice

Ocean Wise

Recommended

U.S.

- Farmed scallops are not provided external feed.
- The risk of escapes and spread of disease is considered to be low. The majority of the source of stock for farmed scallops comes from natural or passive settlement.
- Little to no chemicals are used in the culture of scallops and effluents do not present a risk.

General Notes

References

Seafood Watch Recommendations for farmed Bay Scallop



Ocean Wise Not recommended

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

• This fishery is part of the <u>Ghana tuna - pole & line</u> FIP.



- 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

• This fishery is part of the Eastern Atlantic Ocean tuna - pole & line FIP.



Ocean Wise Not recommended

Environmental Notes

- Catch of the 'vulnerable' blue marlin and sharks is a risk for this fishery.
- There is a higher risk of bycatch in the associated purse seine fishery. Bycatch includes tuna and billfishes.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery is part of the <u>Eastern Atlantic tuna purse seine</u> FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

Seafood Watch Recommendation for Bigeye tuna, Atlantic Ocean, Floating object purse seine (FAD)

	Purse seine	FIP	FishSource Managed	Europe	\checkmark
Bigeye tuna					
Thunnus obesus					
Indian Ocean					

Fishery countries:

Seychelles

Seafood Watch Avoid

Ocean Wise Not

recommended



- Catch of sharks is a risk for this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery. Unassociated purse seine fisheries typically have less bycatch. Bycatch includes billfishes, fin fishes, and sharks and rays.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery is part of the Indian Ocean tuna purse seine (SIOTI) FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

			FishSource Managed		
Bigeye tuna					
Thunnus obesus					
Eastern Pacific	Purse seine	FIP		U.S.	\checkmark
Ocean					
Fishery countries:					
Ecuador, El					
Salvador, Panama					
·					

Environmental Notes

- Catch of sharks and marine mammals is a risk for the purse seine fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery. Unassociated purse seine fisheries typically have less bycatch. Bycatch includes billfishes, fin fishes, and sharks and rays.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery was part of the Eastern Pacific Ocean tropical tuna purse seine (OPAGAC) FIP.
- The FIP entered MSC full assessment in 2020.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

<u>Seafood Watch Recommendation for Bigeye tuna, Eastern Central Pacific Ocean, Floating object purse seine (FAD)</u>



Fishery countries:

Kiribati, Marshall
Islands, Micronesia,
Nauru, Palau,
Papua New Guinea,
Solomon Islands,
Tokelau, Tuvalu

- Catch of sharks is a risk for this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery. Unassociated purse seine fisheries typically have less bycatch. Bycatch includes billfishes, fin fishes, and sharks and rays.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

MSC: PNA Western and Central Pacific skipjack, yellowfin and bigeye tuna purse seine fishery (FAD and non-FAD sets)



Fishery countries:

Indonesia

Ocean Wise Not recommended

Environmental Notes

- Catch of sharks is a risk for this fishery.
- There is a higher risk of bycatch in the associated purse seine fishery. Bycatch includes billfishes, fin fishes, and sharks and rays.

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

General Notes

- This fishery is part of the Indonesia Southeast Sulawesi yellowfin tuna and skipjack tuna purse seine FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

Seafood Watch Recommendation for Bigeye tuna, Western and Central Pacific Ocean (WCPO), Floating object purse seine (FAD)

Bigeye tuna Thunnus obesus Western and Central Pacific Fishery countries: Indonesia	Handlines and pole- lines	Not certified or in a FIP	FishSource Managed	Asia	~	
Western and Central Pacific Fishery countries:	-			Asia		~

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.



Eastern Pacific Ocean Fishery countries: Kiribati, Micronesia, Nauru, Papua New Guinea, South Korea, Taiwan, United States

Seafood Watch

Avoid

Ocean Wise Not recommended

- Catch of sharks is a risk for this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery. Unassociated purse seine fisheries typically have less bycatch. Bycatch includes billfishes, fin fishes, and sharks and rays.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery is part of the Western and Central Pacific Ocean tuna purse seine (Thai Union) FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

<u>Seafood Watch Recommendation for Bigeye tuna, Western and Central Pacific Ocean (WCPO), Floating object purse seine (FAD)</u>

<u>Seafood Watch Recommendation for Bigeye tuna, Eastern Central Pacific Ocean, Floating object purse seine (FAD)</u>



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.

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Blue	Gillnets and				
swimming	entangling				
crab	nets	Not certified	Sustainability	U.S.	\checkmark
Portunus pelagicus	Pots and	or in a FIP	not rated		
China	traps				
Fishery countries:					
China					

Environmental Notes

• Profile not yet complete.

General Notes



- This fishery is unlikely to impact ETP species.
- Bycatch is a risk for this fishery.
- There is a lack of information on habitat impacts in this fishery.

General Notes

• This fishery is part of the Indonesia blue swimming crab - trap & gillnet FIP.

References

Seafood Watch Recommendation, Blue swimming crab, Indonesia

Blue swimming	Gillnets and entangling nets	Some product from FIP fisheries	Seafood Watch Avoid	U.S.	~
crab	Pots and				
Portunus pelagicus	traps				
India					
Fishery countries:					

Ocean Wise Not recommended

Environmental Notes

- There is a lack of information on interactions with ETP species in this fishery.
- There is some bycatch of other crabs with this fishery.
- There is a lack of information on habitat impacts in this fishery.

General Notes

• This fishery is part of the India Palk Bay blue swimming crab - gillnet FIP.

References

Seafood Watch Recommendation, Blue swimming crab, set gillnets, India

EiseBlueswimmingcrabPortunus pelagicusFisinery countries:Philippines	Gillnets and entangling nets Pots and traps	FIP	FishSource Needs Improvement	U.S.	
			Seafood Watch		

Seafood Watch Avoid

Ocean Wise Not recommended

- There are risks to marine mammals and turtles with this fishery.
- Bycatch varies for this fishery depending on gear type and fishing location. Gillnets are associated with the highest risk of bycatch.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• This fishery is part of the Philippines blue swimming crab - bottom-set gillnet & pot/trap (PACPI) FIP.

References

Seafood Watch Recommendations, Blue swimming crab, Philippines



Ocean Wise Not recommended

Environmental Notes

- There is a lack of information on interactions with ETP species in this fishery.
- Bycatch is a risk for this fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• This fishery is part of the Sri Lanka blue swimming crab - bottom gillnet FIP.

References

Seafood Watch Recommendation, Blue swimming crab, Gillnets and entangling nets, Sri Lanka



Environmental Notes

- There are risks to sea turtles, marine mammals, sharks and rays 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

• This fishery is part of the <u>Thailand blue swimming crab - bottom gillnet/trap FIP</u>.

References

Seafood Watch Recommendations, Blue swimming crab, Thailand



Gillnets and

entangling

nets

Not certified or in a FIP FishSource Needs Improvement

Asia, U.S.

 \checkmark

Vietnam



- The risks to sharks and sea turtles with this fishery is considered low.
- There is bycatch for this fishery but non-target species are retained.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• This fishery was part of the now inactive <u>Vietnam blue swimming crab - bottom gillnet/pot/trap FIP</u>.

Certified

References

Seafood Watch Recommendations, Blue swimming crab, Vietnam



Midwater

Capelin Mallotus villosus

Icelandic

Fishery countries:

Iceland

trawl

Seine nets

FishSource Well Managed

Asia

Seafood Watch **Eco-Certification** Recommended



- This fishery is unlikely to have direct impacts on 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.

References

MSC: ISF Iceland capelin



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Ocean Wise Not recommended

Environmental Notes

- There is a lack of information on interactions with ETP species in this fishery.
- Bycatch for this fishery is likely to be low.
- Divers are unlikely to have a significant impact on the sea bed.

General Notes

• No additional notes.



Good Fish Guide Best Choice 1

Ocean Wise Recommended

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

<u>Good Fish Guide - Mussel, Chilean (Farmed)</u>

Seafood Watch Recommendations for Chilean mussels

	Purse seine	Certified	FishSource Well Managed	Europe	\checkmark
Chum salmon					
Oncorhynchus keta					
Alaska					
Fishery countries:					
United States					
			Seafood Watch		
			Eco-Certification		
			Recommended		

Good Fish Guide Best Choice 2

Ocean Wise Recommended

Environmental Notes

- This fishery is unlikely to impact ETP species.
- Management measures are in place to minimise bycatch of non-target salmon stocks.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

MSC: Alaska salmon

Good Fish Guide - Salmon, Chum, Keta, Calico or Dog salmon, Purse seine, Alaska

Seafood Watch Recommendation for Chum salmon, Marine Stewardship Council Certified Alaska salmon Fishery, Purse seine



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.





- No feed inputs are used to support farmed clams.
- Direct escapes of farmed clams are low but eggs may be released into surrounding waters during spawning events in the growout phase. However, the risk of impacts on wild populations and ecosystems is considered low.
- There is no concern regarding pollution from nutrients or organic matter. No feed or nutrient fertilization inputs are used to support farmed clams, and water quality has been shown to improve near farm sites. However, there is some evidence of chemical use in China.

General Notes

References

Seafood Watch Recommendations for Clams, Worldwide Bottom and Off-Bottom Culture

	Bottom trawl	Not certified or in a FIP	Seafood Watch Avoid	U.S.	\checkmark
Common					
octopus					
Octopus vulgaris					
East Atlantic					
Ocean					
Fishery countries:					
Spain					
			Good Fish Guide		

Think 4

Ocean Wise Not recommended

- There are risks to sea turtles, marine mammals, and sharks with this fishery.
- Bycatch is a risk for this fishery.
- Bottom trawls will directly impact on the sea bed.

General Notes

References

<u>Good Fish Guide - Octopus, Common, Demersal otter trawl, North East Atlantic (FAO 27), Cantabrian Sea and Atlantic Iberian waters, Demersal otter trawl</u>

<u>Good Fish Guide - Octopus, Common, Demersal otter trawl, North East Atlantic (FAO 27), Cantabrian Sea and Atlantic Iberian waters, Beam</u> <u>trawl</u>

Seafood Watch Recommendation for Common octopus, Northeast Atlantic Ocean, Bottom trawls



Ocean Wise Recommended

Environmental Notes

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

General Notes

References

Seafood Watch Recommendations for Dungeness crab, Northeast Pacific Ocean, Pots



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

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

References

MSC: Cornwall sardine, UK



Seas and **English Channel**

Fishery countries:

France, Spain



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

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

FishSource



 \checkmark



Purse seine

or in a FIP

Needs Improvement

European pilchard

Sardina pilchardus

Iberian

Fishery countries:

Portugal

Good Fish Guide Think 4

- This fishery is unlikely to have direct impacts on 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.

References

Good Fish Guide - Sardine, European pilchard, sardines, Purse seine, Cantabrian Sea and Atlantic Iberian waters

★ European pilchard Sardina pilchardus NW Africa central Fishery countries:	Purse seine	FIP	FishSource Managed	Europe	×
Morocco					

Environmental Notes

- Available data is still limited, but work is underway in the Moroccan FIP to determine fishery interactions with PET species.
- Bycatch in this fishery is considered low, but available data is still limited. Work is in progress in the Moroccan FIP to identify and quantify discards.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery is covered by the Morocco sardine pelagic trawl and seine FIP.
- 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 is still limited, but work is underway in the Moroccan FIP to determine fishery interactions with PET species.
- Bycatch in this fishery is considered low, but available data is still limited. Work is in progress in the Moroccan FIP to identify and quantify discards.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery is covered by the Morocco sardine pelagic trawl and seine FIP.
- This fish plays an important role in the marine food web and so potential impacts on the wider marine ecosystem must be monitored.

FishSource Suropean pilchard Sardina pilchardus NWA frica southern Fishery countries: Mauritania, Netherlands	Europe	
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- Available data on fishery interactions with ETP species is still limited.
- Bycatch in this fishery is considered low, but available data is still limited.
- 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.



Fishery countries: Estonia, Latvia, Poland, Sweden

Environmental Notes

- There has been no reported bycatch of ETP species in recent years.
- Bycatch of Baltic herring is a risk for this fishery but management measures are in place.
- 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

European sprat Sprattus sprattus North Sea, Skagerrak and Kattegat	Purse seine	Certified	FishSource Well Managed	Europe	~
Fishery countries: Norway					

- This fishery may have indirect impacts on food availability to ETP species.
- Bycatch of herring 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

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

References

MSC: Norway sandeel, pout and North Sea sprat

Image: constraint of the constra	Purse seine	Not certified or in a FIP	FishSource Managed	Europe	
Norway					

Environmental Notes

- This fishery may have indirect impacts on food availability to ETP species.
- Bycatch of herring 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

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



Kattegat

Fishery countries:

Faroe Islands,

Ireland,

Netherlands,

Norway, Sweden,

United Kingdom

Good Fish Guide Think 4

Environmental Notes

- This fishery may have indirect impacts on food availability to ETP species.
- Bycatch of herring 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

• 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 - Sprat, whitebait, Pelagic trawl, North East Atlantic (FAO 27), North Sea, Skagerrak and Kattegat, 4, 3a

	Farmed	Not certified or in an AIP	Seafood Watch Good Alternative	U.S.	\checkmark
Giant river					
prawn					
Macrobrachium					
rosenbergii					
Bangladesh					
Fishery countries:					
Banaladesh					

bullgiudesii

Good Fish Guide Think 3

Ocean Wise



- Production of farmed giant river prawns requires little to no feed inputs of wild fish for feed.
- Production relies heavily on wild-caught juveniles, including in the hatchery production stage, which mainly uses wild-caught broodstock.
- Chemical inputs are low and there is little risk from effluent discharge.

General Notes

References

<u>Good Fish Guide - Prawn, Giant River, prawns (Farmed), Bangladesh</u>

Seafood Watch Recommendation for farmed Giant freshwater prawn, Bangladesh



Penaeus monodon

or in an AIP

India

Fishery countries:

India

Ocean Wise Not recommended

- Fishmeal and fishoil from marine feed sources are used. The sustainability of feed inputs is unknown.
- Frequent water exchange increases the likelihood of escapes, but the risk from escapes is low as Giant tiger prawn are native to India. Disease transfer between farmed and wild prawns is a concern. Production is reliant on wild-caught broodstock.
- Pollution from nutrients and organic matter, as well as chemical inputs, may affect local water quality. There is a lack of data on the quantity of chemical inputs, but evidence suggests that illegal antibiotics are sometimes used on shrimp farms in India.

General Notes

The Coastal Aquaculture Act 2005 regulates shrimp farm planning and production. The Act adopts a zonal approach to aquaculture.

References:

FishSource - shrimp, India

Good Fish Guide - Prawn, Tiger Prawn (Farmed), India, Vietnam and Indonesia, Semi-intensive and improved extensive

Seafood Watch Recommendation for farmed Giant Tiger Prawn, India





Environmental Notes

- Fishmeal and fishoil from marine feed sources are used. The sustainability of feed inputs is unknown.
- Disease transfer between farmed and wild prawns is a concern.

• Pollution from nutrients and organic matter, as well as chemical inputs, may affect local water quality.

General Notes

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:

FishSource - shrimp, Indonesia

Good Fish Guide - Prawn, Tiger Prawn (Farmed), India, Vietnam and Indonesia, Semi-intensive and improved extensive

Seafood Watch Recommendation for farmed Giant Tiger Prawn, Indonesia



Environmental Notes

- No feed inputs are required in extensive production systems used in Myanmar.
- The likelihood of escapes is high due to frequent flooding, but the risk from escapes is low as Giant tiger prawns are native to the region. Disease transfer between farmed and wild prawns is a concern.
- No feed inputs and minimal chemical and fertilizer inputs are used so the risk of impacts on water quality are low.

General Notes

References:

Seafood Watch Recommendation for farmed Giant Tiger Prawn, Myanmar



Environmental Notes

- Fishmeal and fishoil from marine feed sources are used. The sustainability of feed inputs is unknown..
- Escape and disease transfer between farmed and wild prawns is a high concern.
- Pollution from nutrients and organic matter, as well as chemical inputs, may affect local water quality.

General Notes

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

References

FishSource - shrimp, Thailand



Environmental Notes

- No feed inputs are required in extensive production systems used in Vietnam.
- Frequent water exchange increases the likelihood of escapes, but the risk from escapes is low as Giant tiger prawn are native to the region. Disease transfer between farmed and wild prawns is a concern.
- No feed inputs and minimal fertilizer inputs are used so effluent is not a concern. 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 aquaculture industry is currently managed under a farm-based approach.

References

FishSource - shrimp, Vietnam

Good Fish Guide - Prawn, Tiger Prawn (Farmed), India, Vietnam and Indonesia, Semi-intensive and improved extensive

Seafood Watch Recommendation for farmed Giant Tiger Prawn, Vietnam

Goatfish spp					
Upeneus Spp	Midwater	Not certified	Sustainability	Asia	\checkmark
Western Indian	trawl	or in a FIP	not rated	ASIG	•
Ocean					
Fishery countries:					
Indonesia					

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.

Greasyback shrimp Catapenaeus ensis Mestern and Central Pacific Ocean Fishery countries: Indonesia	Not certified or in a FIP	Sustainability not rated	U.S.	
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Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.





- Gear specific information on interactions with ETP species is limited, but an MSC condition is in place to address this.
- MSC conditions are in place to assess the impact of the fishery on bycatch species.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

MSC: Norway North East Arctic haddock offshore (>12nm)

MSC: Norway North Sea demersal

Good Fish Guide - Haddock, Longline, North East Atlantic (FAO 27), Northeast Arctic, Marine Stewardship Council (MSC)

Seafood Watch Recommendations for Haddock, Northeast Atlantic Ocean, Norway


• Profile not yet complete.

General Notes

• No additional notes.

Indian oil sardine Sardinella Jongiceps Western Indian Ocean	Midwater trawl	Not certified or in a FIP	Sustainability not rated	Asia	~
Fishery countries: Oman, Pakistan					

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Environmental Notes

- The impact of the squid fishery on ETP species is unknown.
- There is a lack of information about impacts on bycatch species.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

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



Central Pacific Ocean

Fishery countries: Thailand

Environmental Notes

- The impact of the squid fishery on ETP species is unknown.
- There is a lack of information about impacts on bycatch species.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

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



Environmental Notes

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

General Notes

• No additional notes

Donah crab Cancer borealis US Atlantic Fishery countries: United States	Pots and traps	Not certified or in a FIP	Seafood Watch Good Alternative	Asia, U.S.	•
			Ocean Wise Not		

recommended

 \checkmark

- There is a risk to marine mammals of entanglement in the fishing gear.
- There is a lack of information about bycatch in this fishery, but it is likely to be low.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Seafood Watch Recommendations for Jonah crab, Northwest Atlantic Ocean, U.S., Pots



- There is a risk to marine mammals of entanglement in the fishing gear.
- There is a lack of information about bycatch in this fishery, but it is likely to be low.
- 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 Recommendations for Jonah crab, Northwest Atlantic Ocean, Canada, Pots





- This fishery is unlikely to impact 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 Recommendation for Jumbo flying squid, Southeast Pacific Ocean, Chile, Jig



Jumbo flying squid Dosidicus gigas

SE Pacific

Fishery countries:

Peru

Hook and line Handlines

and pole-

lines

Not certified or in a FIP **FishSource** Managed

Europe

Seafood Watch Good Alternative

Ocean Wise Recommended

Environmental Notes

- This fishery is unlikely to impact 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 Recommendation for Jumbo flying squid, Southeast Pacific Ocean, Peru, Jig



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.

Examplish Cyclopterus Jumpus Greenland waters Fishery countries: Greenland	Gillnets and entangling nets	Certified	FishSource Well Managed	Europe	
			Ocean Wise Not recommended		



- This fishery is unlikely to impact ETP species.
- Other species caught in the fishery include wolffishes and Atlantic halibut. All fish must be landed, except Atlantic halibut, which must be discarded alive where possible.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

MSC: Greenland lumpfish

DNV GL, February 2021, MSC Public Certification Report for the Reassessment of the Greenland lumpfish fishery



Fishery countries:

Norway

Ocean Wise Not recommended

Environmental Notes

- This fishery is unlikely to impact 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

MSC: NFA Norway ling & tusk and NFA Norway lumpfish

DNV GL, February 2021, MSC Public Certification Report for NFA Norwegian Ling & Tusk fishery and NFA Norwegian Lumpfish fishery



Environmental Notes

- There are risks to sea turtles, sharks and seabirds with this fishery.
- The fishery also catches swordfish, tuna, and sharks.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• This fishery is part of the Costa Rica large pelagics - longline and green stick FIP.

References

Seafood Watch Recommendation for Dolphinfish, Eastern Central Pacific Ocean, Costa Rica, Drifting Longlines.



- There are risks to sea turtles, sharks and seabirds with this fishery.
- The fishery also catches swordfish, tuna, and sharks.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• This fishery was part of the now completed Ecuador mahi-mahi - longline FIP.

References

Seafood Watch Recommendation for Dolphinfish, Southeast Pacific Ocean, Ecuador, Drifting Longlines.



Environmental Notes

- There are risks to sea 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

This fishery is part of the <u>Peru mahi-mahi - longline (WWF) FIP.</u>

References

Seafood Watch Recommendation for Dolphinfish, Southeast Pacific Ocean, Peru, Drifting Longlines.



- There are risks to sea 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

Seafood Watch Recommendation for Dolphinfish, Eastern Central Pacific Ocean, Southeast Pacific Ocean, Drifting Longlines.

Seafood Watch Avoid



Indian Ocean and Western and Central Pacific Ocean

Fishery countries: Indonesia Longlines

Not certified or in a FIP

> Ocean Wise Not recommended

U.S.

 \checkmark

- There are risks to sea 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

Seafood Watch Recommendation for Dolphinfish, Eastern Indian Ocean, Indonesia, Drifting Longlines

Seafood Watch Recommendation for Dolphinfish, Western Central Pacific Ocean, Indonesia, Drifting Longlines

Mahi-mahi (Common dolphinfish) Coryphaena hippurus	Longlines	Not certified or in a FIP	Sustainability not rated	U.S.	\checkmark
Western and Central Pacific					
Ocean					
Fishery countries: Vietnam					

Environmental Notes

- There are risks to sea 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.

Farmed

General Notes

• No additional notes.



Not certified or in an AIP **Seafood Watch** Best Choice

Asia, U.S.

 \checkmark

New Zealand

Green Mussel

Perna canaliculus

New Zealand

Fishery countries:

New Zealand

Ocean Wise Recommended

- No feed inputs are used to support farmed mussels.
- As a native species found across New Zealand, the transportation of mussels away from farm sites is not likely to be 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

Seafood Watch Recommendation for farmed mussels, worldwide



Environmental Notes

• Profile not yet complete

General Notes

• No additional notes.



macrocephalus

Gulf of Alaska

Fishery countries:

United States

Seafood Watch Best Choice

Good Fish Guide Think 4

Ocean Wise Recommended

NOAA FSSI

3

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.
- Bottom trawls will directly impact on the sea bed. However, management measures are in place.

General Notes

• Concerns about low stock led to the closure of the Alaskan Pacific cod fishery for 2020 (after the reporting period).

References

<u>Good Fish Guide - Cod, Pacific Cod, Demersal otter trawl, North East Pacific (FAO 67), Gulf of Alaska, Marine Stewardship Council (MSC) -</u> <u>Suspended</u>

Seafood Watch Recommendation for Pacific cod, Gulf of Alaska, Bottom trawls





- No feed inputs are used to support farmed oysters.
- As a native species, the risk to wild populations is low.
- There is no concern regarding pollution from nutrients or organic matter. Typically, no feed or chemical inputs are used to support farmed oysters.

General Notes

References:

Seafood Watch Recommendations for Oysters, Crassostrea spp., Ostrea spp., Saccostrea spp., Worldwide, Bottom culture

Seafood Watch Recommendations for Oysters, Crassostrea spp., Ostrea spp., Saccostrea spp., Worldwide, Off-Bottom culture



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.

	Farmed	Not certified or in an AIP	Seafood Watch Avoid	Asia	\checkmark
Pangasius					
Pangasius					
hypophthalmus					
Vietnam					
Fishery countries:					
Vietnam					



- 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.
- Pangasius 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.

General Notes

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

References:

FishSource - Pangasius, Vietnam

Good Fish Guide - Basa, Tra, Catfish or Vietnamese River Cobbler (Farmed), Vietnam

Seafood Watch Recommendation for Sutchi Catfish (Pangasius), Vietnam



Ocean Wise Not recommended

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 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

References

Seafood Watch Recommendation for Patagonian toothfish, Southeast Pacific Ocean, Longline (deepset)

	Purse seine	Certified	FishSource Well Managed	Europe, U.S.	\checkmark
Pink salmon	Gillnets and				
Oncorhynchus	entangling				
gorbuscha	nets				
Alaska					

Fishery countries:

United States

Seafood Watch Eco-Certification Recommended

Good Fish Guide Best Choice 2



- While encounters with marine mammals and birds have been documented in this fishery, the impact on PET species is not thought to be significant.
- There is no risk of bycatch for this fishery. Catches of other salmon species are accounted for in the pink salmon management.
- This fishery is unlikely to have a significant impact on the benthic habitat.

General Notes

References

MRAG Americas, April 2019, MSC 3rd Reassessment Report for Alaska Salmon Fishery.

FishSource Well Managed



Pink salmon

Oncorhynchus gorbuscha

Russia

Fishery countries:

Russia

Seine nets

Gillnets and

entangling

nets

Certified

Seafood Watch Eco-Certification Recommended

Europe

 \checkmark

Environmental Notes

• Profile not yet complete.

General Notes

References

MSC: Narody Severa Bolsheretsk salmon

MSC: Olyutorskiy Bay salmon

MSC: Tymlat Karaginsky Bay salmon fishery

Seafood Watch Recommendations for Pink salmon, Russia, Certified

FishSource Well Managed	Europe	~
d	Well Managed	Well Managed

Environmental Notes

• Profile not yet complete.

General Notes

References

MSC: Kolkhoz im. Bekereva-Ukinskij Liman & Belorechensk-Vyvenskoe Karaginsky Bay salmon fisheries

MSC: Ozernovsky RKZ No 55 West Kamchatka salmon fishery

MSC: Vostochny Bereg-Maksimovsky, Koryakmoreprodukt-Nachikinskoe & Severo-Vostochnaya Company Karaginsky Bay salmon fisheries

MSC: Zarya-Kolpakovsky Sobolevo Salmon Fisheries



Pink salmon Oncorhynchus

Gillnets and

FishSource Managed

Oncorhynchus gorbuscha	entangling	Not certified or in a FIP	Europe	\checkmark
Russia	nets			
Fishery countries:				
Russia				

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Russia

Fishery countries: Russia

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



- This fishery is unlikely to impact ETP species.
- Bycatch is not a risk for this fishery.
- This fishery is conducted by divers. Direct impacts on the sea bed are unlikely boat anchors may have indirect impacts.

General Notes

References

Seafood Watch Recommendation, Queen conch, Honduras, Diving





- This fishery is unlikely to impact ETP species.
- Spiny lobster is caught with queen conch in Nicaragua.
- This fishery is conducted by divers. Direct impacts on the sea bed are unlikely boat anchors may have indirect impacts.

General Notes

References

Seafood Watch Recommendation, Queen conch, Nicaragua, Diving



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Ocean Wise Not recommended

Environmental Notes

- Trout have a high requirement for fish in their diet.
- Rainbow trout are not native to Chile but have 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. Available data indicates that large numbers of farmed trout have escaped each year since the early 1990s.
- Production using open net cages and ponds results in the discharge of waste and nutrients directly into the surrounding water.

General Notes

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

References

FishSource - salmon, Chile

Seafood Watch, Recommended Eco-Certifications for Rainbow trout, Aquaculture Stewardship Council (ASC) Certified

Seafood Watch report for farmed Rainbow trout, Chile

Rainbow trout,					
Steelhead					
trout	Former e el		Sustainability		
Oncorhynchus	Farmed	Certified	not rated	Asia	\checkmark
mykiss					
Chile					
Fishery countries:					
Chile					
Fishery countries:					

Environmental Notes

- Trout have a high requirement for fish in their diet.
- Rainbow trout are not native to Chile but have 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. Available data indicates that large numbers of farmed trout have escaped each year since the early 1990s.
- Production using open net cages and ponds results in the discharge of waste and nutrients directly into the surrounding water.

General Notes

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

References

FishSource - salmon, Chile

Seafood Watch report for farmed Rainbow trout, Chile



- Trout have a high requirement for fish in their diet.
- Rainbow trout are not native to Norway. There are concerns about the impact of farmed salmonid escapes and disease outbreaks on wild fish populations. On average, 44,000 rainbow trout were registered escaped from Norwegian fish farms per year from 2010 to 2018. The most common cause of escapes are holes in the net. Fish farmers in Norway are legally obliged to report escapes.
- Impacts on water quality depend on the farming method used. Production using open net cages and ponds results in the discharge of waste and nutrients directly into the surrounding water.

General Notes

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

References

<u>FishSource - salmon, Norway</u>

Føre, H.M. and Thorvaldsen, T., 2021, Causal analysis of escape of Atlantic salmon and rainbow trout from Norwegian fish farms during 2010-<u>2018 - Aquaculture, Vol. 532, https://doi.org/10.1016/j.aquaculture.2020.736002</u>

Seafood Watch, Recommended Eco-Certifications for Rainbow trout, Aquaculture Stewardship Council (ASC) Certified



Environmental Notes

- Trout have a high requirement for fish in their diet.
- Rainbow trout are not native to Norway. There are concerns about the impact of farmed salmonid escapes and disease outbreaks on wild fish populations. On average, 44,000 rainbow trout were registered escaped from Norwegian fish farms per year from 2010 to 2018. The most common cause of escapes are holes in the net. Fish farmers in Norway are legally obliged to report escapes.
- Impacts on water quality depend on the farming method used. Production using open net cages and ponds results in the discharge of waste and nutrients directly into the surrounding water.

General Notes

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

References

FishSource - salmon, Norway

<u>Føre, H.M. and Thorvaldsen, T., 2021, Causal analysis of escape of Atlantic salmon and rainbow trout from Norwegian fish farms during 2010–</u> 2018 – Aquaculture, Vol. 532, https://doi.org/10.1016/j.aquaculture.2020.736002



Environmental Notes

• Profile not yet complete

General Notes

• No additional notes.



Red swamp crawfish Gillnets and

entangling

Procambarus	nets	or in a FIP	not rated	U.S.	\checkmark	
clarkii	Pots and	of in d rip	notrated			
Egypt	traps					
Fishery countries:						
Egypt						

Environmental Notes

• Profile not yet complete.

General Notes

• The red swamp crawfish was introduced to Egypt in the 1980s and is considered an invasive species.

RedRedswimmingcrab (Wartyswimmingcrab)rorb)Portunus haaniiChinaFishery countries:China	Seafood Watch Avoid	U.S.	
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- There is a lack of information on interactions with ETP species in this fishery.
- Bycatch is likely to be low for the pot fishery.
- Pots are unlikely to have a significant impact on the sea bed.

General Notes

• This fishery is part of the China Fujian Zhangzhou red swimming crab - bottom trawl & pot/trap FIP.

References

Seafood Watch Recommendation, Warty swimming crab, China, Northwest Pacific Ocean, Pots



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Ocean

Fishery countries: Indonesia

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.

	Associated	FIP	FishSource Managed	Asia, Europe	\checkmark
Skipjack tuna	purse seine				
Katsuwonus					
pelamis					

Eastern Atlantic

Ocean

Fishery countries:

Ghana, Ivory Coast

Seafood Watch Avoid

Good Fish Guide



- There are risks to sea turtles, sharks, and marine mammals with this fishery.
- There is a higher risk of bycatch in the associated purse seine fishery. Bycatch for this fishery includes other tuna and sharks.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery is part of the Eastern Atlantic tuna purse seine FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

<u>Good Fish Guide - Tuna, skipjack, Purse seine (FAD & Free School), East Atlantic</u>

Seafood Watch Recommendation for Skipjack tuna, Eastern Atlantic, Floating object purse seine (FAD)

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FishSource





Skipjack tuna

Katsuwonus pelamis

Eastern Atlantic

Ocean

Fishery countries: Ghana, Senegal Handlines

and pole-

lines

product from FIP fisheries Managed

Seafood Watch Good Alternative Asia, Europe

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- This fishery is unlikely to impact ETP species; incidental capture by pole-and-line gear is uncommon.
- Bycatch for this fishery is considered low, but there are concerns about unknown impacts on bait fish used in the fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• This fishery is part of the Eastern Atlantic Ocean tuna - pole & line FIP and the Ghana tuna - pole & line FIP.

References

<u>Good Fish Guide - Tuna, skipjack, Pole & line; Troll, East Atlantic</u>

Seafood Watch Recommendation for Skipjack tuna, Eastern Atlantic, Handlines and hand-operated pole-and-lines



Skipjack tuna Katsuwonus pelamis

Eastern Atlantic Ocean

Fishery countries:

Cape Verde,

Portugal, Spain

Handlines

and pole-

lines

Not certified or in a FIP FishSource Managed

Europe

 \checkmark

Seafood Watch Good Alternative



- This fishery is unlikely to impact RTP species; incidental capture by pole-and-line gear is uncommon.
- Bycatch for this fishery is considered low, but there are concerns about unknown impacts on bait fish used in the fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

Good Fish Guide - Tuna, skipjack, Pole & line; Troll, East Atlantic

Seafood Watch Recommendation for Skipjack tuna, Eastern Atlantic, Handlines and hand-operated pole-and-lines





- There are risks to sea turtles, sharks, and marine mammals with this fishery.
- There is a higher risk of bycatch in the associated purse seine fishery. Bycatch for this fishery includes other tuna and sharks.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

<u>Good Fish Guide - Tuna, skipjack, Purse seine (FAD & Free School), East Atlantic</u>

Seafood Watch Recommendation for Skipjack tuna, Eastern Atlantic, Floating object purse seine (FAD)





- 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

References

MSC: Maldives pole & line skipjack tuna

Seafood Watch Recommendation for Skipjack tuna, Western Indian Ocean, Marine Stewardship Council Certified Maldives pole & line skipjack tuna Fishery



FishSource



Skipjack tuna

Katsuwonus pelamis

Indian Ocean

Fishery countries:

Seychelles

FAD-free

(unassociated)

purse seine

Managed

Asia, Europe

Seafood Watch Avoid



- There are risks to sea turtles, sharks, and marine mammals with this fishery.
- Bycatch varies by gear type. Unassociated purse seine fisheries typically have less bycatch. Bycatch for this fishery includes other tuna, fin fishes, sharks and rays.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery is part of the Indian Ocean tuna purse seine (SIOTI) FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

Good Fish Guide - Tuna, skipjack, Purse seine (FAD & Free School), Indian Ocean: Western (FAO 51), Eastern (FAO 57).

Seafood Watch Recommendation for Skipjack tuna, Indian Ocean, Unassociated purse seine (non-FAD)





- There are risks to sea turtles, sharks, and marine mammals with this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery. Bycatch for this fishery includes other tuna, fin fishes, sharks and rays.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery is part of the Indian Ocean tuna purse seine (SIOTI) FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

<u>Good Fish Guide - Tuna, skipjack, Purse seine (FAD & Free School), Indian Ocean: Western (FAO 51), Eastern (FAO 57)</u>

Seafood Watch Recommendation for Skipjack tuna, Indian Ocean, Floating object purse seine (FAD)



Seafood Watch Eco-Certification Recommended

Environmental Notes

- There are risks to sea turtles, sharks, and marine mammals with this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery. Unassociated purse seine fisheries typically have less bycatch. Bycatch for this fishery includes other tuna, fin fishes, sharks and rays.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

MSC: Echebastar Indian Ocean purse seine skipjack tuna

<u>Seafood Watch Recommendation for Skipjack tuna, Western Indian Ocean, Eastern Indian Ocean, Marine Stewardship Council Certified</u> <u>Echebastar Indian Ocean purse seine skipjack tuna Fishery</u>



Seafood Watch Avoid

Good Fish Guide Best Choice 2



- This fishery is unlikely to impact PET species.
- Bycatch in pole and line fisheries is generally considered low. However, catch of overfished yellowfin tuna is a concern for this fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

References

<u>Good Fish Guide - Tuna, skipjack, Pole & line, Indian Ocean</u>

Seafood Watch Recommendation for Skipjack tuna, Indian Ocean, Handlines and hand-operated pole-and-lines



Ecuador

Seafood Watch Good Alternative

Good Fish Guide Think 4



- There are risks to sea turtles, sharks and rays, and marine mammals with this fishery.
- Bycatch varies by gear type. Unassociated purse seine fisheries typically have less bycatch.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery was part of the now completed Eastern Pacific Ocean tropical tuna purse seine (TUNACONS) FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

Good Fish Guide - Tuna, skipjack, Purse seine (FAD & Free School), Eastern Pacific

Seafood Watch Recommendations for Skipjack tuna, Eastern Central Pacific Ocean, Unassociated purse seine (non-FAD)

	Associated	FIP	FishSource Managed	Europe, U.S.	\checkmark
Skipjack tuna	purse seine				
Katsuwonus pelamis					

Eastern Pacific

Ocean

Fishery countries:

Ecuador

Seafood Watch Avoid

Good Fish Guide



- There are risks to sea turtles, sharks and rays, and marine mammals with this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery was part of the now completed Eastern Pacific Ocean tropical tuna purse seine (TUNACONS) FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s ProActive Vessel Register (PVR) and are audited against ISSF conservation measures.

References

Good Fish Guide - Tuna, skipjack, Purse seine (FAD & Free School), Eastern Pacific

Seafood Watch Recommendations for Skipjack tuna, Eastern Central Pacific Ocean, Floating object purse seine (FAD)





Skipjack tuna Katsuwonus pelamis

Eastern Pacific Ocean

Fishery countries:

Ecuador, El

Salvador, Panama

FAD-free (unassociated)

purse seine

FIP

Managed

U.S.

Seafood Watch

Good Alternative



- There are risks to sea turtles, sharks and rays, and marine mammals with this fishery.
- Bycatch varies by gear type. Unassociated purse seine fisheries typically have less bycatch.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery was part of the now completed Eastern Pacific Ocean tropical tuna purse seine (OPAGAC) FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

Good Fish Guide - Tuna, skipjack, Purse seine (FAD & Free School), Eastern Pacific

Seafood Watch Recommendations for Skipiack tuna, Fastern Central Pacific Ocean, Unassociated purse seine (non-FAD)

<u>eduloda Water Recentionalitatione for exiplace tana, Educer i dente decan, enacedente parce come (non i rec)</u>




- There are risks to sea turtles, sharks and rays, and marine mammals with this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery was part of the now completed Eastern Pacific Ocean tropical tuna purse seine (OPAGAC) FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s ProActive Vessel Register (PVR) and are audited against ISSF conservation measures.

References

Good Fish Guide - Tuna, skipjack, Purse seine (FAD & Free School), Eastern Pacific

Seafood Watch Recommendations for Skipjack tuna, Eastern Central Pacific Ocean, Floating object purse seine (FAD)



Ocean	Eco-Certification
Fishery countries:	Recommended
China, Micronesia,	
Kiribati, Marshall	
Islands, Nauru,	
Palau, Papua New	
Guinea, Solomon	
Islands, Taiwan,	
Tuvalu, United	
States	

- There are risks to sea turtles, sharks, and marine mammals with this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

MSC: PNA Western and Central Pacific skipjack, yellowfin and bigeye tuna purse seine fishery (FAD and non-FAD sets)

MSC: Tri Marine Western and Central Pacific Skipjack and Yellowfin Tuna

MSC: WPSTA Western and Central Pacific skipjack and yellowfin free school purse seine

Seafood Watch Recommendation for Skipjack tuna, Western Central Pacific Ocean, Certified

FishSource Well Managed



Katsuwonus pelamis	Purse seine Handlines		Seafood Watch	Acia	
Western and	and pole-	Certified	Eco-Certification	Asia	\checkmark
Central Pacific Ocean	lines		Recommended		
Fishery countries:					
Solomon Islands					

Environmental Notes

- There are risks to sea turtles, sharks, and marine mammals with this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch with purse seine gear.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

MSC: Solomon Islands skipjack and yellowfin tuna purse seine and pole and line

Seafood Watch Recommendation for Skipjack tuna, Western Central Pacific Ocean, Certified

Image: Non-WeightImage: Non-WeightSkipjack tunaKatsuwonuspelamis			FishSource Well Managed		
Western and Central Pacific Ocean	Purse seine	Certified		Asia, Europe	\checkmark
Fishery countries:					
New Zealand,					
Papua New Guinea,					
South Korea					

Environmental Notes

- There are risks to sea turtles, sharks, and marine mammals with this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

MSC: PNG Fishing Industry Association's purse seine Skipjack & Yellowfin Tuna Fishery

- MSC: Talleys New Zealand Skipjack Tuna Purse Seine
- MSC: Tropical Pacific yellowfin and skipjack free-school purse seine fishery

Purse seine



Skipjack tuna

Katsuwonus pelamis

Western and Central Pacific Ocean

Fishery countries:

Indonesia, Kiribati,

Micronesia, Nauru,

Papua New Guinea,

South Korea,

Taiwan, United

States

FIP

FishSource Managed

Asia, U.S.

Seafood Watch Avoid



- There are risks to sea turtles, sharks, and marine mammals with this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery is part of the Indonesia Southeast Sulawesi yellowfin tuna and skipjack tuna purse seine FIP and the Western and Central Pacific Ocean tuna purse seine (Thai Union) FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

Good Fish Guide - Tuna, skipjack, Purse seine (FAD & Free School), Western and Central Pacific

Seafood Watch Recommendation for Skipjack tuna, Western Central Pacific Ocean, Floating object purse seine (FAD)





- 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

References

Good Fish Guide - Tuna, skipjack, Pole & line, Western and Central Pacific

<image/>	Purse seine	Not certified or in a FIP	FishSource Managed	Asia, Europe	
Katsuwonus					
pelamis			Seafood Watch		
Western and			Avoid		
Central Pacific					
Ocean					
Fishery countries:					
China, Kiribati,					

Marshall Islands, Micronesia, Nauru, New Zealand, Papua New Guinea, South Korea, Taiwan, Tuvalu, United States, Vanuatu, Vietnam



- There are risks to sea turtles, sharks, and marine mammals with this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

Good Fish Guide - Tuna, skipjack, Purse seine (FAD & Free School), Western and Central Pacific

Seafood Watch Recommendation for Skipjack tuna, Western Central Pacific Ocean, Floating object purse seine (FAD)

	Pots and traps	Not certified or in a FIP	FishSource Managed	U.S.	\checkmark
Snow crab					
(Queen crab)					
Chionoecetes					
opilio					
Alaska - Eastern					
Bering Sea					
Fishery countries:					
United States					
			Seafood Watch		

Best Choice

Ocean Wise Recommended



- 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

References

Seafood Watch Recommendation for Snow crab, United States (Alaska), Bering Sea, Pots



Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.

Snow crab (Queen crab) Chionoecetes opilio Russia (regions unspecified)	Pots and traps	Not certified or in a FIP	Sustainability not rated	U.S.	~
Fishery countries: Russia					

• Profile not yet complete.

General Notes

• The Seafood Watch Recommendation for snow crab fisheries operating in the Russian Far East (Bering Sea, Sea of Japan, and Sea of Okhotsk) is 'Avoid'.

References

Seafood Watch Recommendations for Snow crab, Russia, Pots



Ocean Wise Recommended

- 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 benthic habitat.

General Notes

References

MSC: <u>Alaska salmon</u>

MRAG Americas, April 2019, MSC Public Certification Report for the Alaska Salmon Fishery





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 benthic habitat.

General Notes

References

MSC: Kolkhoz im. Bekereva-Ukinskij Liman & Belorechensk-Vyvenskoe Karaginsky Bay salmon fisheries

MSC: <u>Olyutorskiy Bay salmon</u>

MSC: Ozernovsky RKZ No 55 West Kamchatka salmon fishery

MRAG Americas, June 2018, MSC Public Certification Report for Olyutorskiy Bay Salmon Fisheries

MRAG Americas, October 2020, MSC Public Certification Report for Karaginsky Bay Salmon Fisheries Kolkhoz im Bekereva, Ukinskij Liman, Belorechensk & Vyvenskoe

MRAG Americas, July 2020, MSC Public Certification Report for West Kamchatka Salmon Fishery Ozernovsky RKZ No 55

Exercise Swimming crab (multispecies) Scylla serrata, Scylla olivacea	Pots and traps	Not certified or in a FIP	Sustainability not rated	U.S.	~
Eastern Indian Ocean					
Fishery countries: Myanmar					

Environmental Notes

• Profile not yet complete.

General Notes

• No additional notes.

	Longlines	FIP	FishSource Managed	U.S.	\checkmark
Swordfish					
Xiphias gladius					
North Atlantic					
Fishery countries:					
Spain					
			Seafood Watch		

Avoid

Environmental Notes

- There are risks to sharks, sea turtles, and seabirds with this fishery.
- 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

• This fishery is part of the <u>Atlantic Ocean blue shark and swordfish - surface longline (FIP-BLUES)</u> FIP.

References

<u>Good Fish Guide - Swordfish, Longline, North Atlantic</u>

Seafood Watch Recommendation, Swordfish, North Atlantic, Drifting Longlines

1	Longlines	FIP	FishSource Managed	U.S.	\checkmark
Swordfish Xiphias gladius					
South Atlantic					
Fishery countries: Spain					

Seafood Watch Avoid



- There are risks to sharks, sea turtles, and seabirds with this fishery.
- 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

• This fishery is part of the <u>Atlantic Ocean blue shark and swordfish - surface longline (FIP-BLUES)</u> FIP.

References

<u>Good Fish Guide - Swordfish, Longline, South Atlantic</u>

Seafood Watch Recommendation, Swordfish, South Atlantic, Drifting Longlines

*	Longlines	Not certified or in a FIP	FishSource Managed	U.S.	\checkmark
Swordfish					
Xiphias gladius					
Southeast					

Pacific

Fishery countries:

Chile

Seafood Watch Avoid

Environmental Notes

- There are risks to sharks, sea turtles, and seabirds with this fishery.
- 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

References

Good Fish Guide - Swordfish, Longline, Pacific: North East (FAO 67), Eastern Central (FAO 77), South East (FAO 87)

Seafood Watch Recommendation, Swordfish, Southeastern Pacific Ocean (SEPO), Drifting Longlines



Farmed

Not certified or in an AIP **Seafood Watch** Avoid

U.S.

 $\mathbf{\vee}$

Tilapia Oreochromis spp

China

Fishery countries:

China



- 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 information available regarding impacts of Chinese tilapia production on wild species, including 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.

References:

FishSource - tilapia, China

Seafood Watch recommendations for farmed tilapia, China



Farmed

Certified

Seafood Watch Eco-Certification Recommended

U.S.

 \checkmark

Whiteleg shrimp

Penaeus vannamei

Ecuador

Fishery countries:

Ecuador

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. Information on escapes is limited. Shrimp farmed in Ecuador are raised from hatchery-raised native broodstock, therefore lowering the risk to wild shrimp populations if interbreeding does occur, however, interbreeding may still result in reduced genetic fitness.
- Pollution from nutrients and organic matter, as well as chemical inputs, may affect local water quality. Impacts on water quality vary depending on farm practices including the frequency of waste discharge from ponds.

General Notes

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

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

References:

FishSource - shrimp, Ecuador

Good Fish Guide - Prawns, King (whiteleg), prawns, Global Aquaculture Alliance Best Aquaculture Practices (GAA BAP) 2 & 3* certified

<u>Good Fish Guide - Prawn, King (whiteleg), prawns, Global Aquaculture Alliance Best Aquaculture Practices (GAA BAP) 4* certified</u>

Certified

Seafood Watch Recommended Eco-Certifications for Whiteleg shrimp



Seafood Watch Eco-Certification Recommended

U.S.

 \checkmark

shrimp Penaeus vannamei

India

Fishery countries:

India

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:

FishSource - shrimp, India

Good Fish Guide - Prawns, King (whiteleg), prawns, Global Aquaculture Alliance Best Aquaculture Practices (GAA BAP) 2 & 3* certified

<u>Good Fish Guide - Prawn, King (whiteleg), prawns, Global Aquaculture Alliance Best Aquaculture Practices (GAA BAP) 4* certified</u>

Seafood Watch Recommended Eco-Certifications for Whiteleg shrimp



Whiteleg

Certified

Seafood Watch Eco-Certification Recommended

U.S.

 \checkmark

shrimp Penaeus vannamei

Indonesia

Fishery countries:

Indonesia

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. 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:

FishSource - shrimp, Indonesia

Good Fish Guide - Prawns, King (whiteleg), prawns, Global Aquaculture Alliance Best Aquaculture Practices (GAA BAP) 2 & 3* certified

Good Fish Guide - Prawn, King (whiteleg), prawns, Global Aquaculture Alliance Best Aquaculture Practices (GAA BAP) 4* certified

<u>Seafood Watch Recommended Eco-Certification, Whiteleg shrimp, Global Aquaculture Alliance Certified BAP Standard: Finfish and Crustacean</u> <u>Farms (2, 3, 4-star)</u>

Seafood Watch report for farmed shrimp, Indonesia

itopeneaus vannamei Kalaysia Fishery countries:	Farmed	Not certified or in an AIP	Seafood Watch Avoid	U.S.	
			Ocean Wise Not recommended		

- Fishmeal and fish oil 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 the risk.
- 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. There is limited information regarding on-farm chemical use or shrimp farm effluent in Malaysia. But evidence suggests that antimicrobials important to human health are used in production.

General Notes

References

Seafood Watch Report for farmed Whiteleg shrimp, Malaysia



Environmental Notes

- Fishmeal and fish oil 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 the risk.
- 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. There is limited information regarding on-farm chemical use or shrimp farm effluent, but evidence suggests that antibiotics important to human health are used in production.

General Notes

References

Seafood Watch Report for farmed Whiteleg shrimp, Mexico



Whiteleg

shrimp

Litopeneaus vannamei

Sri Lanka

Fishery countries:

Sri Lanka

Environmental Notes

- Fishmeal and fish oil 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 the risk.
- 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

• No additional notes.





shrimp Litopeneaus vannamei

Farmed

Thailand

Fishery countries:

Thailand

Ocean Wise Recommended

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 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:

FishSource - Shrimp, Thailand

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

Seafood Watch Recommended Eco-Certifications for Whiteleg shrimp, Farmed



Fishery countries:

Thailand

Ocean Wise Not 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:

FishSource - Shrimp, Thailand

Good Fish Guide - Prawns, King (whiteleg), prawns, Global Aquaculture Alliance Best Aquaculture Practices (GAA BAP) 2 & 3* certified

<u>Good Fish Guide - Prawn, King (whiteleg), prawns, Global Aquaculture Alliance Best Aquaculture Practices (GAA BAP) 4* certified</u>

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

Seafood Watch report for farmed Whiteleg shrimp, Thailand



Environmental Notes

- Fishmeal and fish oil 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 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

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

References:

FishSource - Shrimp, Thailand

Seafood Watch report for farmed Whiteleg shrimp, Thailand

- Fishmeal and fish oil 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 the risk.
- 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

No additional notes.



Vietnam

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 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:

FishSource - shrimp, Vietnam

Good Fish Guide - Prawns, King (whiteleg), prawns, Global Aquaculture Alliance Best Aquaculture Practices (GAA BAP) 2 & 3* certified

Good Fish Guide - Prawn, King (whiteleg), prawns, Global Aquaculture Alliance Best Aquaculture Practices (GAA BAP) 4* certified

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

Seafood Watch report for farmed shrimp, Vietnam

	Bottom trawl	Certified	FishSource Well Managed	U.S.	\checkmark
Yellowfin sole Limanda aspera					
Bering Sea and Aleutian Islands					
Fishery countries: United States					
			Seafood Watch		
			Eco-Certification Recommended		

Ocean Wise Recommended

NOAA FSSI

4

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

General Notes

References

MSC: <u>Alaska flatfish - Bering Sea and Aleutian Islands</u>

MRAG Americas, 2020, BSAI and GOA flatfish MSC Re-assessment

<section-header></section-header>	Associated purse seine	FIP	FishSource Managed	Asia	~
			Seafood Watch Avoid		
			Good Fish Guida		

Good Fish Guide Think 3

Ocean Wise Not recommended

- There are risks to sea turtles, sharks, and marine mammals with this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery is part of the Eastern Atlantic tuna purse seine FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

Good Fish Guide - Tuna, yellowfin, Purse seine (FAD & Free School), Atlantic

Seafood Watch Recommendation for Yellowfin tuna, Eastern Atlantic, Floating object purse seine (FAD)



Good Fish Guide Think 3

Ocean Wise

- There are risks to sea turtles, sharks, and marine mammals with this fishery.
- Bycatch varies by gear type. Unassociated purse seine fisheries typically have less bycatch.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery is part of the Eastern Atlantic tuna purse seine FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

<u>Good Fish Guide - Tuna, yellowfin, Purse seine (FAD & Free School), Atlantic</u>

Seafood Watch Recommendation for Yellowfin tuna, Eastern Atlantic, Unassociated purse seine (non-FAD)

Image: A constraint of the const	Handlines and pole- lines	Some product from FIP fisheries	FishSource Managed	Asia	
			Seafood Watch Good Alternative		

Good Fish Guide Best Choice 2



- This fishery is unlikely to impact ETP species; incidental capture by pole-and-line gear is uncommon.
- Bycatch for this fishery is considered low, but there are concerns about unknown impacts on bait fish used in the fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• This fishery is part of the Eastern Atlantic Ocean tuna - pole & line FIP and the Ghana tuna - pole & line FIP.

References

Good Fish Guide - Tuna, yellowfin, Pole & line; troll; handline, Atlantic

Seafood Watch Recommendation for Yellowfin tuna, Eastern Atlantic, Handlines and hand-operated pole-and-lines

Seafood Watch Recommendation for Yellowfin tuna, Western Atlantic, Handlines and hand-operated pole-and-lines

	Associated	FIP	FishSource Managed	U.S.	\checkmark
Yellowfin tuna	purse seine				
Thunnus albacares					
Eastern Pacific					
Ocean					
Fishery countries:					
Ecuador, El					
Salvador, Panama					

Seafood Watch Avoid

Environmental Notes

- There are risks to sea turtles, sharks and rays, and marine mammals with this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery was part of the now completed Eastern Pacific Ocean tropical tuna purse seine (OPAGAC) FIP and the Eastern Pacific Ocean tropical tuna - purse seine (TUNACONS) FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s ProActive Vessel Register (PVR) and are audited against ISSF conservation measures.

References

<u>Good Fish Guide - Tuna, yellowfin, Purse seine (FAD & Free School), Eastern Pacific</u>

Seafood Watch Recommendations for Yellowfin tuna, Eastern Central Pacific Ocean, Floating object purse seine (FAD)

	FAD-free	FIP	FishSource Managed	U.S.	\checkmark
Yellowfin tuna	(unassociated)				
Thunnus albacares	purse seine				

Eastern Pacific

Ocean

Fishery countries:

Ecuador, El

Salvador, Panama

Seafood Watch Good Alternative

Good Fish Guide



Think 3

Environmental Notes

- There are risks to sea turtles, sharks and rays, and marine mammals with this fishery.
- Bycatch varies by gear type. Unassociated purse seine fisheries typically have less bycatch.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery was part of the now completed <u>Eastern Pacific Ocean tropical tuna purse seine (OPAGAC) FIP</u> and the <u>Eastern Pacific Ocean</u> <u>tropical tuna purse seine (TUNACONS) FIP</u>.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

Good Fish Guide - Tuna, yellowfin, Purse seine (FAD & Free School), Eastern Pacific

Associated

purse seine

Seafood Watch Recommendations for Yellowfin tuna, Eastern Central Pacific Ocean, Unassociated purse seine (non-FAD)



Yellowfin tuna *Thunnus albacares*

Eastern Pacific

Ocean

Fishery countries: Kiribati, Marshall Islands, Micronesia, Nauru, Papua New Guinea, Solomon

Islands, Tuvalu,

Vanuatu

Not certified or in a FIP FishSource Managed

Seafood Watch

Avoid

Asia



- There are risks to sea turtles, sharks and rays, and marine mammals with this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s ProActive Vessel Register (PVR) and are audited against ISSF conservation measures.

References

Good Fish Guide - Tuna, yellowfin, Purse seine (FAD & Free School), Eastern Pacific

Seafood Watch Recommendations for Yellowfin tuna, Eastern Central Pacific Ocean, Floating object purse seine (FAD)





- There are risks to sea turtles, sharks and rays, and marine mammals with this fishery.
- Bycatch varies by gear type. Unassociated purse seine fisheries typically have less bycatch.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

Good Fish Guide - Tuna, yellowfin, Purse seine (FAD & Free School), Eastern Pacific

Seafood Watch Recommendations for Yellowfin tuna, Eastern Central Pacific Ocean, Unassociated purse seine (non-FAD).



Seafood Watch

Avoid

Good Fish Guide Improver 5

Ocean Wise Not

recommended

- There are risks to sea turtles, sharks, and marine mammals with this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery is part of the Indian Ocean tuna purse seine (SIOTI) FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s ProActive Vessel Register (PVR) and are audited against ISSF conservation measures.

References

Good Fish Guide - Tuna, yellowfin, Purse seine (FAD & Free School), Indian Ocean

Seafood Watch Recommendation for Yellowfin tuna, Indian Ocean, Floating object purse seine (FAD)

Seafood Watch Recommendation for Yellowfin tuna, Indian Ocean, Unassociated purse seine (non-FAD)

Yellowfin tuna *Thunnus albacares*

Indian Ocean

Fishery countries: Maldives

Handlines

and pole-

lines

Not certified or in a FIP

Good Fi

Good Fish Guide Think 4

FishSource

Improvement

Seafood Watch

Avoid

Needs

Asia

 \checkmark

Ocean Wise

Not recommended

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

References

<u>Good Fish Guide - Tuna, yellowfin, Pole & line, Indian Ocean</u>



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

Purse seine

General Notes

References

MSC: Australian Eastern Tuna and Billfish Fishery (albacore tuna, yellowfin tuna, bigeye tuna and swordfish)

Good Fish Guide - Tuna, yellowfin, Longline, Western and Central Pacific, Marine Stewardship Council (MSC)



Yellowfin tuna

Katsuwonus pelamis

Western and Central Pacific Ocean

Fishery countries: Cook Islands, Fiji,

Kiribati, Marshall

Islands, Micronesia,

Nauru, Palau,

Papua New Guinea,

Solomon Islands,

Certified

FishSource Well Managed

Asia, U.S.

Seafood Watch Eco-Certification Recommended



- There are risks to sea turtles, sharks, and marine mammals with this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

• All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

- MSC: PNA Western and Central Pacific skipjack, yellowfin and bigeye tuna purse seine fishery (FAD and non-FAD sets)
- MSC: <u>PNG Fishing Industry Association's purse seine Skipjack & Yellowfin Tuna Fishery</u>
- MSC: Solomon Islands skipjack and yellowfin tuna purse seine and pole and line
- MSC: Tri Marine Western and Central Pacific Skipjack and Yellowfin Tuna
- MSC: <u>Tropical Pacific yellowfin and skipjack free-school purse seine fishery</u>
- MSC: WPSTA Western and Central Pacific skipjack and yellowfin free school purse seine
- <u>Good Fish Guide Tuna, yellowfin, Purse seine (FAD & Free School), Western and Central Pacific</u>
- Seafood Watch Recommendation for Yellowfin tuna, Western Central Pacific Ocean, Certified



Central Pacific Ocean

Fishery countries: Indonesia Handlines and pole-

lines

Some product from FIP fisheries FishSource Managed

Asia, U.S.

 \checkmark

Seafood Watch Best Choice



Ocean Wise Recommended

Environmental Notes

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

General Notes

• This fishery is part of the Indonesia Western and Central Pacific Ocean yellowfin tuna - pole & line FIP.

References

Seafood Watch Recommendation for Yellowfin tuna, Western Central Pacific Ocean, Handlines and hand-operated pole-and-lines





Katsuwonus pelamis

Western and Central Pacific Ocean

Associated

purse seine

Some product from FIP fisheries **FishSource** Managed

Asia, U.S.

 \checkmark

Seafood Watch Avoid Fishery countries: Indonesia, Kiribati, Marshall Islands, Micronesia, Nauru, Palau, Papua New Guinea, Solomon Islands, South Korea, Taiwan, Thailand, Tuvalu, United States, Vanuatu, Vietnam

Think 3

Good Fish Guide

Ocean Wise Not

recommended

Environmental Notes

- There are risks to sea turtles, sharks, and marine mammals with this fishery.
- Bycatch varies by gear type. There is a higher risk of bycatch in the associated purse seine fishery.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery is part of the Indonesia Southeast Sulawesi yellowfin tuna and skipjack tuna purse seine FIP and the Western and Central Pacific Ocean tuna purse seine (Thai Union) FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

<u>Good Fish Guide - Tuna, yellowfin, Purse seine (FAD & Free School), Western and Central Pacific</u>

Seafood Watch Recommendation for Yellowfin tuna, Western Central Pacific Ocean, Floating object purse seine (FAD)





Yellowfin tuna Katsuwonus pelamis

Western and Central Pacific Ocean

Fishery countries: Indonesia, Kiribati, Marshall Islands, Micronesia, Nauru, Palau, Papua New Guinea, Solomon Islands, South Korea, Taiwan, Thailand, Tuvalu, United States, Vanuatu, Vietnam **Seafood Watch** Good Alternative

Good Fish Guide Think 3

Ocean Wise Not

recommended

Environmental Notes

- There are risks to sea turtles, sharks, and marine mammals with this fishery.
- Bycatch varies by gear type. Unassociated purse seine fisheries typically have less bycatch.
- This fishery is unlikely to have a significant impact on the sea bed.

General Notes

- This fishery is partly sourced from the Western and Central Pacific Ocean tuna purse seine (Thai Union) FIP.
- All purse seine fishing vessels are listed on the International Seafood Sustainability Foundation (ISSF)'s <u>ProActive Vessel Register (PVR)</u> and are audited against ISSF conservation measures.

References

<u>Good Fish Guide - Tuna, yellowfin, Purse seine (FAD & Free School), Western and Central Pacific</u>

Seafood Watch Recommendation for Yellowfin tuna, Western Central Pacific Ocean, Unassociated purse seine (non-FAD)

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