



Marine Stewardship Council

SUSTAINABLE TUNA HANDBOOK

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EXECUTIVE SUMMARY

Welcome to the MSC Sustainable Tuna Handbook. This handbook aims to discuss some of the complexities of sustainable tuna fishing and increase the reader’s understanding of global tuna fisheries, with a focus on the UK supply chain. It explains how MSC certified tuna fisheries have achieved a high bar of sustainability, defined by the MSC standard.

This handbook comes at a critical time: with the global demand for tuna increasing over recent decades, the pressure on local populations and ecosystems has also intensified. At the same time, the diversity in the sector has fuelled questions related to gear type and fishing methods, species, sustainability, and environmental impact, to name a few.

For tuna populations to thrive, the sector requires robust and coordinated management, effective enforcement, elimination of forced labour and illegal fishing, reduction in mislabeling, and reductions in catches of endangered, threatened, and protected (ETP) species. These issues are prevalent in many tuna fisheries and present sourcing risks that can prove challenging. Furthermore, a lack of information available on tuna fisheries, conflicting sustainability credentials, and powerful NGO campaign messaging combine to further complicate sourcing decisions. This handbook hopes to bring clarity to these issues and demonstrate how MSC certification can help mitigate these risks, essential to fulfilling sustainable

sourcing policies. It is aimed at anyone involved with sourcing sustainable tuna as a reference guide for the various aspects of tuna sourcing.

Over 70% of consumers believe that to save the oceans we should consume seafood only from sustainable sources. The supply chain needs to respond to this demand and ensure that environmental and social threats related to tuna fishing are minimised through sourcing from verifiably sustainable fisheries.

The MSC’s ‘blue tick’ can help fulfil these commitments by ensuring sustainability against a rigorous and demanding standard and providing traceability from ocean to plate. It is an opportunity to deliver on sustainable sourcing commitments and to ensure a sustainable supply for these iconic species.

While MSC certification provides a solution to sustainable seafood sourcing requirements, we recognise that due to the complex and diverse

nature of the global tuna supply chain, coupled with an increase from pressure groups on the sourcing of both non-MSC and MSC certified tuna – further information would benefit those operating within the tuna supply chain to help provide greater clarity and knowledge on the global tuna landscape.

In addition to examining fishing gears and methods, species, impacts and issues, this handbook also profiles eight MSC certified tuna fisheries illustrating how different types of fisheries can meet the MSC standard, even with varied gear types, fishing methods, species and management approaches. It examines how these fisheries gained their sustainability credentials, including the actions they have taken over time, to achieve and maintain their certification. Common themes include:

- Improved observer coverage
- Improving management to protect tuna stocks in the long term
- Minimising fishery impacts on other species, including overfished stocks and endangered, threatened and protected species

While the MSC Standard sets the highest bar for sustainability of fisheries, it is important to recognise Fishery Improvement Projects (FIPs) as an important aspect of the path to sustainability. As such, this handbook also provides an example of a successful FIP that has progressed to become an MSC certified

fishery. However, please note that this handbook is not a guide to FIPs, nor a FIP sourcing handbook.

While it takes time to advance fisheries to the MSC standard, there is reassuringly ample variety and diversity in the commercial range of MSC certified fisheries to start to satisfy the demand for sustainable, certified tuna. But there is always room for improvement. While around 29% of all tuna fisheries are already within the MSC programme (by landed volume) and an additional 22% in a FIP (by landed volume), nearly half are left without any measure for how they are performing or verification of their sustainability.

Our vision is to see more fisheries enter MSC Assessment at a level at which they can achieve certification. Those already certified to the MSC Fisheries Standard are leading the way and have made – often considerable – changes to achieve their certification. These leaders are helping support global tuna sustainability. Your support in this movement, and action at the national and international level, is crucial to ensure these fisheries are protected for future generations. By sourcing MSC certified tuna, you are not only investing in ensuring stable supplies of fish for the future with secure supply chains, but also incentivising healthy oceans and coastal communities. This handbook will help you navigate this complex and fascinating world.

INTRODUCTION TO SUSTAINABLE TUNA SOURCING



**Jim Humphreys, MSC
Global Fisheries
Coordinator**

Tuna are some of the world's most popular fish, sold in nearly

every country in the world. From the tuna sandwiches I grew up with, to the sushi loved by my grandchildren, we see the global tuna market segmented into different areas based on species, food preferences and culture. But change is constant: one of the biggest trends in the past few years has been the growth of the fresh and frozen market in North America and in Western Europe, while canned tuna is gaining ground even in the Middle East — not exactly a traditional tuna market.

In the UK, tuna is the national supermarket favourite. In 2017, tuna were the best-selling wild-caught fish by volume and the top imported fish by weight, worth over £400 million².

Once tuna is canned or frozen, it becomes a shelf-stable and an easily traded commodity. But there are complex issues in tuna fisheries, due to the impacts of gears used to harvest tuna and their highly-migratory nature.

Over the past ten years, the MSC has built up a wealth of experience in tuna fisheries, their supply chains and their unique challenges. This handbook is a distillation of some of that experience and I hope it will help retailers and other commercial interests navigate the complex, and fascinating world of this remarkable fish.

Healthy Stocks

With increased demand for tuna comes increased pressure on tuna stocks and associated ecosystems. At the moment, most tuna stocks are at healthy levels³, but there are significant variations and stocks can change. Retailers seeking to buy from tuna with healthy stocks can rely on MSC certified tuna fisheries, which ensure that the stocks are healthy or are in a robust and demonstratively credible rebuilding plan.

Environmental Impacts

Tuna fisheries can be associated with significant bycatch problems, catching and entangling seabirds, sharks and marine mammals. Different fisheries have vastly different impacts depending on how the fishing gears are used (see page 18) and where the tuna is fished.

Retail buyers play a pivotal role in reducing these impacts by sourcing sustainable tuna. Some environmental groups have pressured buyers to source from pole and line fisheries because the bycatch of non-tuna species from this fishing gear is considered minimal. However, focussing on a single attribute, such as fishing gear, is too simplistic: tuna stocks may still be overfished or poorly-managed and particular fisheries, irrespective of gear type, may face other challenges such as the catch of juvenile tuna.

Management

Tuna are managed at international scales by Regional Fisheries Management Organisations (RFMOs) (see page 14), but management at this scale, involving as many as fifty member countries, can be slow. Retailers can support sustainable tuna by backing strong conservation measures

through the adoption of measures such as Harvest Strategies and Harvest Control Rules (HCRs), by RFMOs (see case study on page 29). Sourcing from overfished stocks, or from fisheries that have significant bycatch of non-target species or environmental impacts, creates business and supply chain risks. Businesses therefore have a vested interest in helping to ensure strong conservation measures are adopted.

Labour

In addition to these environmental issues, there are also concerns about the scale of forced labour and human rights issues in tuna supply chains. The MSC condemns forced labour and although we were built as an environmental standard, we have taken our first steps to keeping forced labour out of the MSC supply chain (see page 34).

Reducing Risk

The best way for tuna buyers to significantly reduce exposure to the above risks is to choose MSC certified tuna. A certified fishery ensures that the stocks are healthy or are in a robust and demonstratively credible rebuilding plan, the impact on the ecosystem is minimal and the fishery is well-managed. What is more, by choosing MSC, you are incentivising global fisheries to become more sustainable, thereby safeguarding livelihoods and healthy oceans for the future.



THE MSC FISHERIES STANDARD

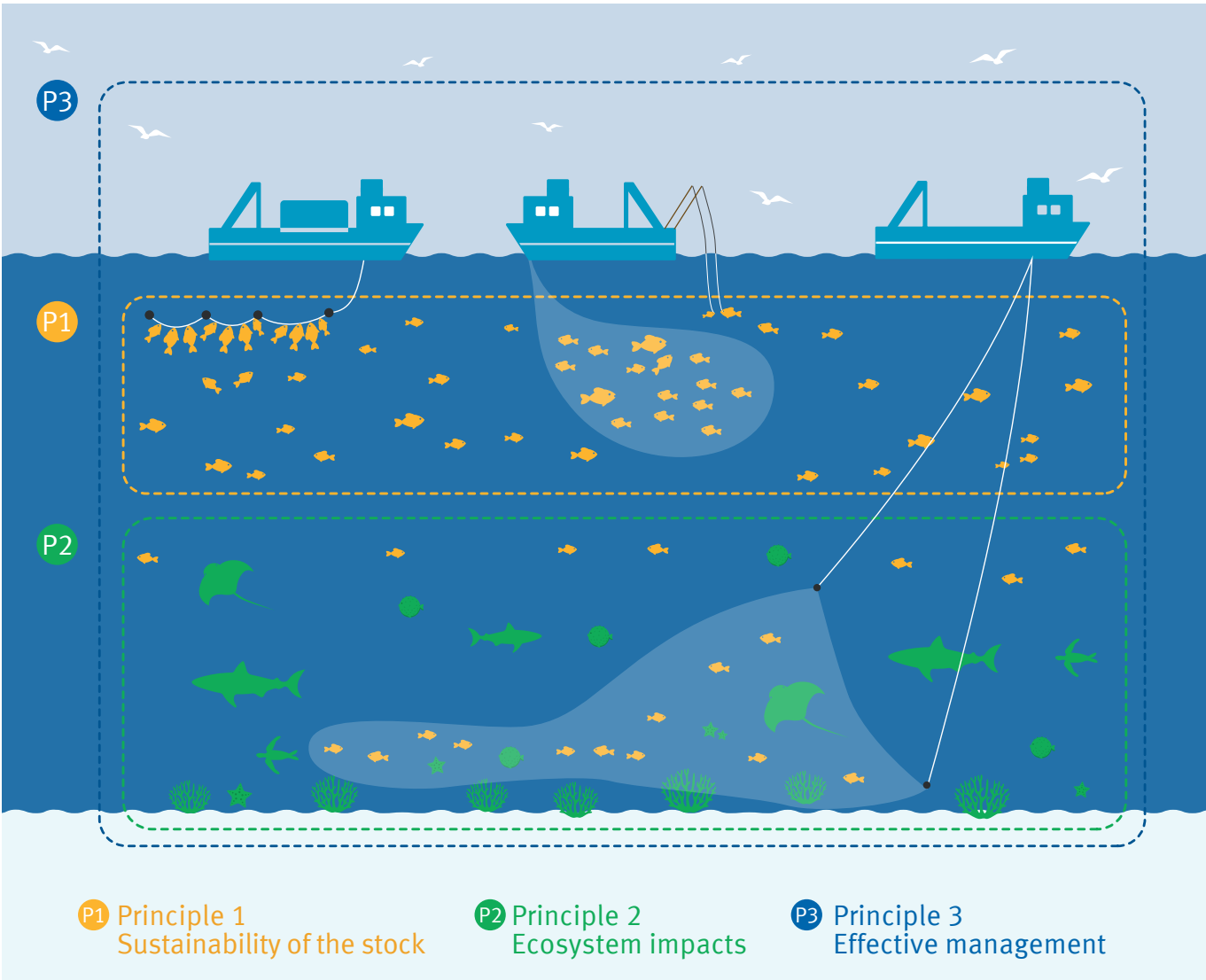
The MSC Fisheries Standard brings together over 20 years of collaboration with scientists, the fishing industry and conservation groups. It reflects internationally accepted fisheries science and best practice management.

The three principles of the MSC Fisheries Standard

Principle 1: Sustainability of the stock: Fisheries must operate in a way that allows fishing to continue indefinitely, without over exploiting the resource.

Principle 2: Ecosystem impacts: Fishing operations need to be managed to maintain the structure, productivity, function and diversity of the ecosystem upon which the fishery depends, including other species and habitats.

Principle 3: Effective management: All fisheries need to meet all local, national and international laws and have an effective management system in place.



HOW DOES THE SCORING PROCESS WORK?

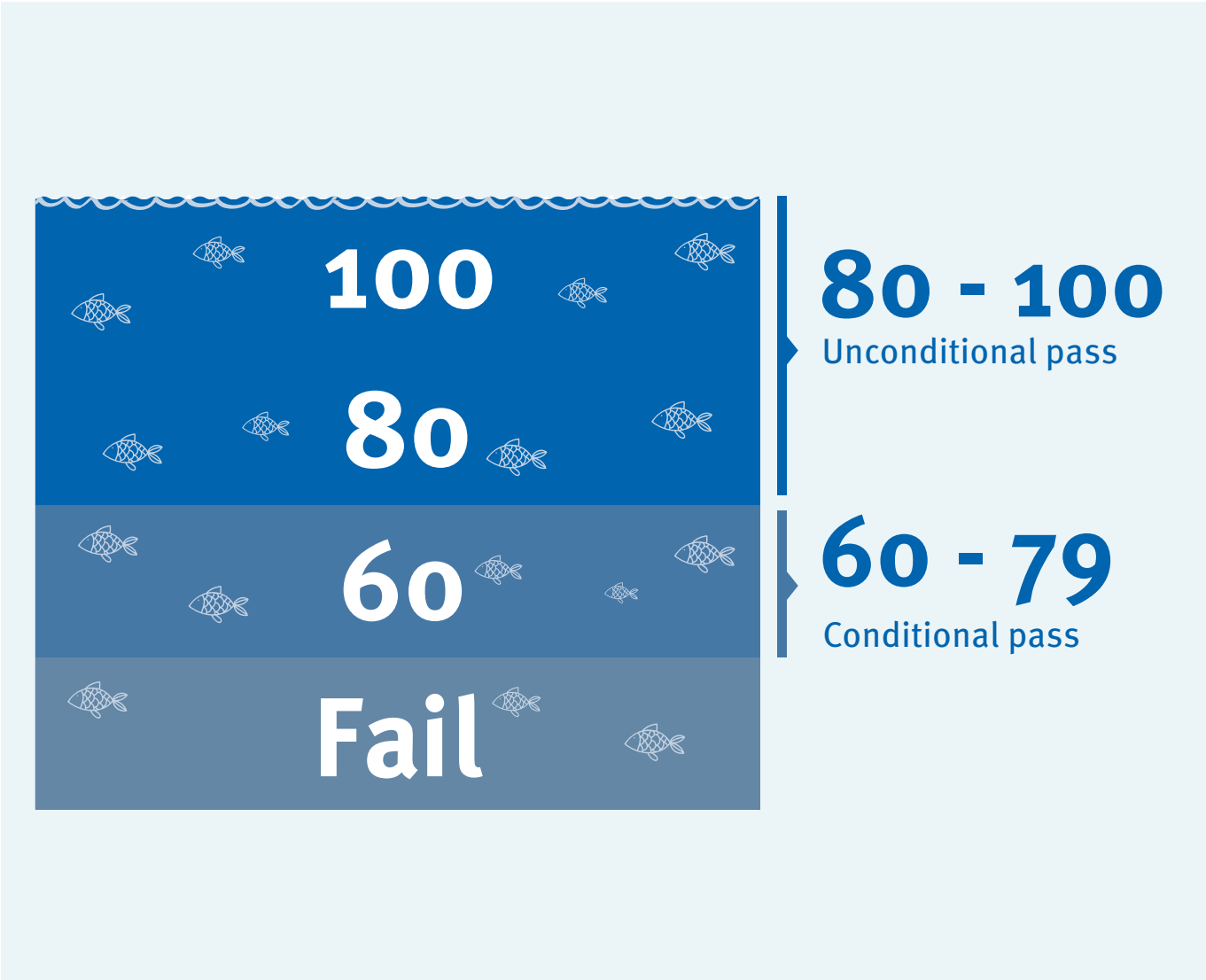
There are 28 performance indicators in the Fisheries Standard that sit under the three principles.

Your fishery is assigned a score for each performance indicator where 60 is the minimum acceptable performance, 80 is global best practice and 100 is near perfect performance.

To be certified, your fishery must score:

- **at least 60 for each of the 28 performance indicators**
- **an average score of 80 across all performance indicators under each of the three principles**

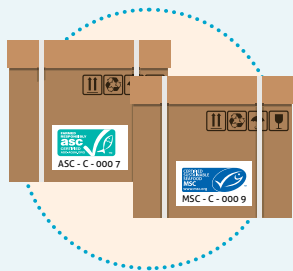
If your fishery scores between 60 and 79 for any performance indicator, you are required to improve your fishery’s performance against that indicator so that it scores 80 or above within five years. This improvement is called a condition.



THE CHAIN OF CUSTODY STANDARD: DEFAULT VERSION HAS FIVE PRINCIPLES



Principle 1:
Companies must purchase certified product from a certified supplier



Principle 2:
Certified products are clearly identifiable



Principle 3:
Certified products are separated from non-certified



Principle 4:
Certified products are traceable and volumes are recorded



Principle 5:
Your management system addresses the requirements of the Chain of Custody Standard

DO YOU NEED CERTIFICATION?

The Chain of Custody Standard is a traceability and segregation standard that is applicable to the full supply chain – from a certified fishery or farm, to final sale.

Examples of businesses eligible for Chain of Custody certification:

- A fishmonger serving final consumers and caterers
- A seafood company with a trading office, processing facility and storage unit

When Chain of Custody certification is not needed:

- Your company buys pre-packed, labelled certified products that will be sold to the end consumer without being opened, re-packed or re-labelled. Such items are known as consumer-ready tamper-proof products. Retail packages of frozen fish fingers or tins of smoked mackerel fillets are examples of consumer-ready tamper-proof products
- Your company buys certified products but does not wish to sell these on as certified. In this case the chain of custody is broken and your customers may not make any claims about the product being certified
- Your company does not take legal ownership of certified seafood. This may be the case if your company provides contracted services for certified companies and therefore can be covered by your customer's Chain of Custody certificate as a subcontractor

Businesses not eligible for Chain of Custody certification:

- A company that has been successfully prosecuted for a forced or child labour violation in the last two years
- A company whose certificate was withdrawn for a breach of Chain of Custody in the last two years
- A company whose certificate was suspended in the last six months
- Enhanced fishery or farm operations that are out of scope of the MSC Fisheries Standard or the ASC Farm Standard

TUNA SPECIES

Worldwide there are 23 stocks of the major commercial tuna species: 5 skipjack, 4 yellowfin, 4 bluefin, 6 albacore, and 4 bigeye stocks. A recent report from the International Seafood Sustainability Foundation (ISSF) showed that 65% of tuna stocks were at healthy levels, 13% were overfished and 22% were at an intermediate level⁴. This page shows important differences between the 5 major commercial tuna species (in alphabetical order). Their differences not only impact their susceptibility to overfishing, but also their taste, price and availability.

Albacore tuna



Albacore grows more slowly than other tunas such as skipjack and yellowfin and matures later at around 5 years. It is typically caught in deeper waters, around 400m deep and is found in the Pacific, Indian and Atlantic Oceans, the Mediterranean and even in UK waters⁵. Albacore represents 5% of the world's tuna catch and is also known as 'white tuna' due to its light flesh⁶. It is ideal for canning, due to its dryer texture but is also sold as fresh steak or in jars with olive oil. Albacore is significantly more expensive than skipjack⁷.

Bigeye tuna



Bigeye is a large tuna that also grows more slowly than yellowfin or skipjack, but matures relatively young, around 3 years. It is found in the Indian, Pacific and Atlantic Oceans⁸ and represents 8% of the world's tuna catch⁹. Because bigeye typically live at deeper depths, compared to yellowfin and skipjack, they have a thick layer of fat to insulate them from the colder water. This fat adds moisture, that makes bigeye attractive for sashimi markets¹⁰.

Bluefin tuna



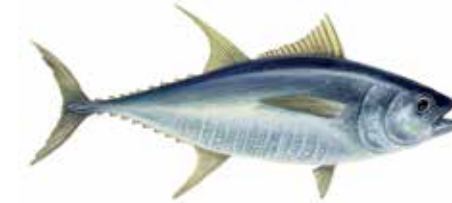
There are three bluefin species in four stocks: Western Atlantic, Eastern Atlantic and Mediterranean, Pacific, and Southern. Atlantic bluefin are the largest tuna species, which take a long time to grow and reproduce. Some can only reproduce from the age of 15¹¹, therefore their populations are slow to recover from overfishing. Bluefin represent 1% of the world's tuna catch¹². Due to their higher fat content, they are normally eaten as sashimi¹³. Known as the 'Porsche of the sea', they accelerate faster than a Porsche and can reach speeds of 60 miles per hour. Bluefin are highly-prized and regularly set new sales records in Japanese auctions — one fish sold for 333.6 million Yen (over 3 million US dollars) in Tokyo's fish market in early 2019¹⁴.

Skipjack tuna



Skipjack is the smallest and most abundant of the commercial tuna species. They reproduce quickly and are highly productive, maturing around 1-2 years of age. Skipjack are caught in the tropical waters of the Pacific, Atlantic and Indian Oceans¹⁵. It is the most popular and generally the most affordable of the tuna species, representing 58% of the world's tuna catch¹⁶. Its small size provides small loins and chunks, which make them a popular fish for canning¹⁷.

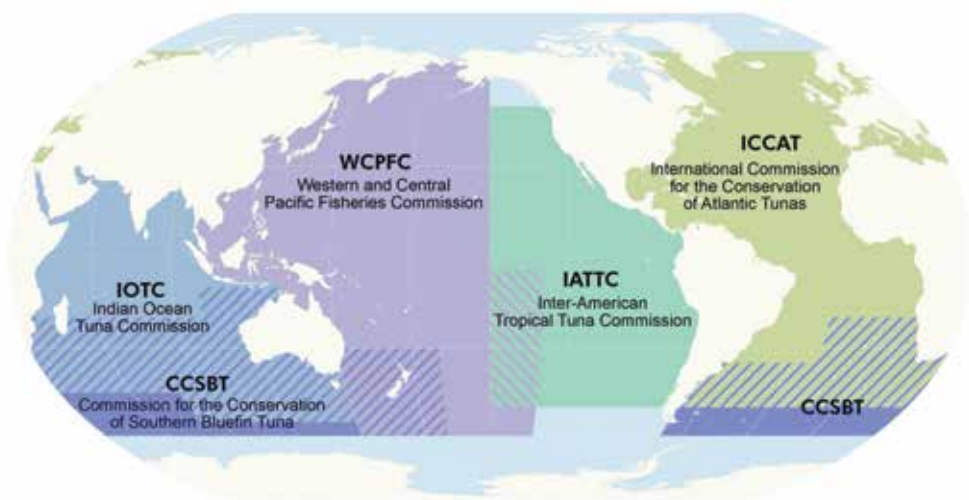
Yellowfin tuna



Yellowfin are a similar sized tuna to bigeye but mature at around 2 years old¹⁸. They reproduce throughout the year making them highly productive. They are found throughout the Pacific, Indian and Atlantic Oceans¹⁹ and represents 28% of the world's tuna catch²⁰. Yellowfin meat is firm with a mild taste and can be canned or sold as fresh or frozen fillets²¹.

THE TUNA CHALLENGE: INTERNATIONAL TUNA GOVERNANCE AND MANAGEMENT

Tuna are highly-migratory fish and swim thousands of miles each year between multiple jurisdictions. Their culinary popularity, and decades of exploitation by multiple nationalities, have created high pressure on these valuable stocks and – despite their overall healthy status – caused some tuna populations to decline.



Source: Pew Charitable Trusts

In an effort to bring coordinated international management to tuna stocks and ensure sustainable fisheries, five tuna Regional Fisheries Management Organisations (RFMOs)²² were established around the world in the 1990's and 2000's. These organisations each comprise between 21 and 50 member countries, which are the countries historically involved in catching the tuna and those in whose waters the tuna live.

While RFMOs were designed so that member states could jointly develop and set sustainable management measures to prevent overfishing of tuna, in many cases these bodies have struggled to deliver on their sustainability commitments. A key reason is that most decisions in RFMOs require consensus. Finding agreement amongst as many as 50 member states – with conflicting priorities and interests – is incredibly challenging.

The need for consensus makes decision-making slow and tends to lower the bar to the lowest level of management accepted by all members²³. This can be especially problematic when there is an urgent need to reduce fishing pressure on a tuna stock that is being overexploited. Management by consensus can, at times, provide a veto to any individual member state.

One way to ensure an appropriate response to declining tuna stocks is the agreement, implementation and enforcement of robust Harvest Control Rules (HCRs). HCRs are pre-agreed actions in response to changes of stock status. Agreeing HCRs is politically challenging given the varied perspectives and priorities of the participating coastal states. However, consensus can be achieved more readily when stocks are healthy, so it is important to have HCRs in place

even when stocks are perceived as healthy, so any management action can be applied quickly when needed. For example, if a stock falls below a certain level, the total allowable catch can be reduced by a pre-defined amount to ensure future harvests are set at sustainable limits.

To date, four of the five tuna RFMOs have agreed HCRs for particular tuna stocks:

- In 2016, the IOTC agreed a landmark HCR for skipjack (see case study)
- The IATTC has agreed on an HCR for yellowfin and bigeye in the Eastern Pacific Ocean
- The CCSBT agreed an HCR for southern bluefin
- In 2018, ICCAT adopted an HCR for North Atlantic albacore. Movement towards HCRs on other stocks remains slow, but most RFMOs have plans to deliver these important management measures within the next five years.

Along with our partners, the MSC is pushing for stronger action from RFMOs including coordinating timelines for certification conditions. The adoption of robust, well defined HCRs is a requirement for the ongoing certification of MSC certified tuna fisheries. Therefore, as more fisheries have become MSC certified, increasingly, RFMOs are being encouraged to adopt and implement HCRs. Retailers can help RFMOs to adopt HCRs by encouraging the member delegations to support their adoption in RFMO meetings.

MSC requires the adoption of HCRs to move from 'generally understood' HCRs to 'well defined' HCRs.

HARVEST CONTROL RULES

To prevent overfishing, the MSC programme requires the adoption of Harvest Control Rules (HCRs), moving from 'generally understood' HCRs to 'well defined' HCRs, within an agreed timeframe. HCRs are a set of pre-agreed, well-defined actions used to determine how much fishing can occur, based on the health of a tuna stock. When stock levels reach certain thresholds, the HCR would inform the RFMO response to prevent overfishing, before the population declines further. Agreeing 'well defined' HCRs in advance is considered best practice as it allows the management bodies to avoid overfishing by acting in a timely and agreed way. In early 2019, the HCR conditions for all MSC certified tuna fisheries were aligned, so that multiple certified fisheries in the same region can work to the same timeframes and can coordinate their efforts for the adoption of robust harvest strategies supported by well-defined HCRs.

See page 28 and 29 on Harvest Control Rules and to read about how the Indian Ocean Tuna Commission agreed to implement HCRs.



© Anthony J Rayburn

TUNA FISHING GEARS

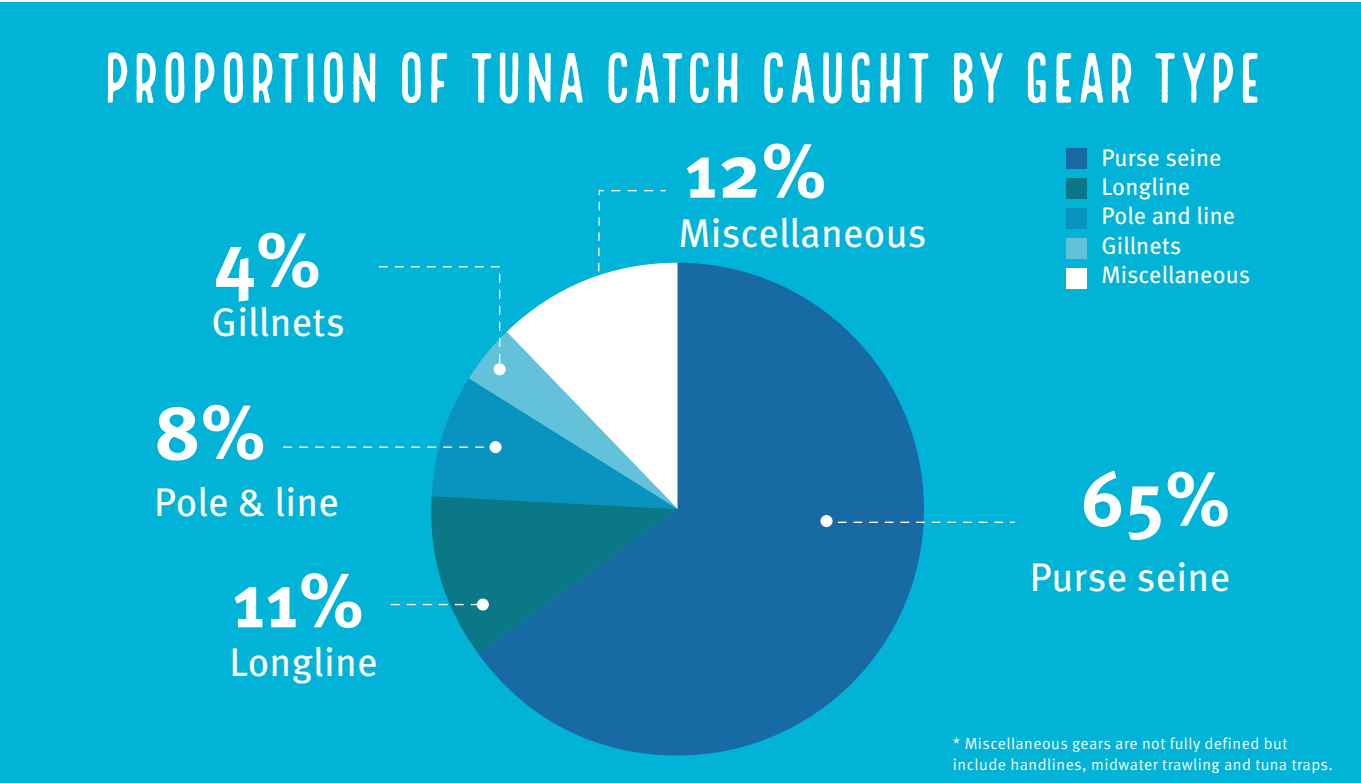
The various gear types used to catch tuna have different impacts and impacts are also specific to individual regions. The impacts depend on the species, habitats and the natural environment of a given area and how the fishing gears and fishing operations are modified to reduce their impacts. Even gear types that are seemingly benign can have negative impacts on the environment.

Due to the varied nature of tuna fisheries, every fishery needs to be individually assessed, taking into account fishing gear impacts on the ecosystem, stock status and management practices. The MSC Fisheries Standard requires rigorous monitoring and management programmes for certified fisheries, to ensure both the target stock and the ecosystem remain healthy.

In line with United Nations Food and Agriculture Organization (UNFAO) guidelines, the MSC programme is open to all types of wild-capture fisheries regardless of their size, fishing technique

or location. The impact of a fishing gear should be based on evidence for that specific fishery, rather than its perceived challenges or benefits. The only exceptions are fishing with explosives or poisons, which are excluded from the MSC programme.

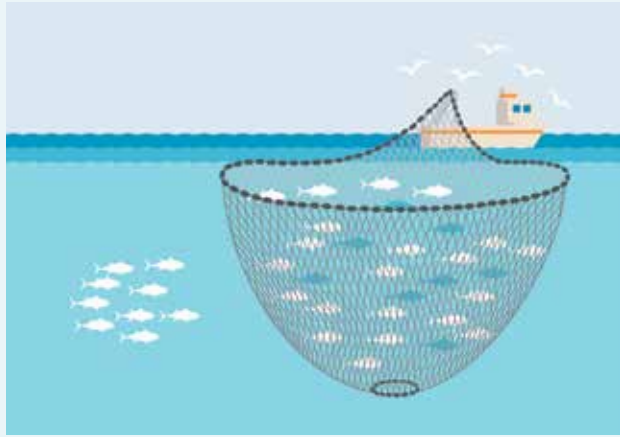
Tuna are caught by a variety of gear types and fishing methods (see page 18). Purse seine, gillnet, and pole and line are used to catch tuna near the surface e.g. skipjack and small yellowfin, albacore and bluefin. Deep-set longlines are used to catch tuna in deeper waters e.g. larger bluefin, bigeye, yellowfin and albacore²⁵.



Source: 24

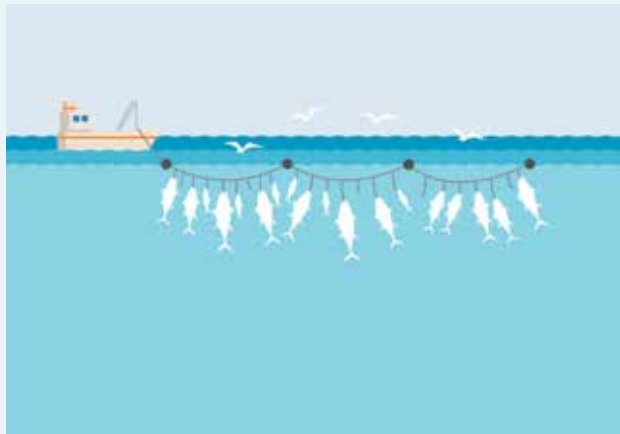


PURSE SEINE



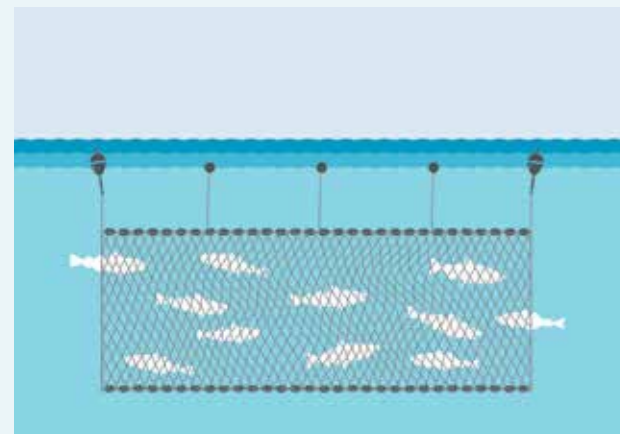
Fishermen locate a school of tuna and set a net around it in a circle. The bottom of the net is pulled closed – like a purse – and the fish are brought on board. Purse seines can be used to catch fish congregating around fish aggregating devices (FADs)²⁶ or on ‘free schools’ of tuna (see page 20-25). Purse seine fishing represents 65% of global tuna catches but they are used for catching 61% of Eastern Pacific yellowfin and 80% of Western & Central Pacific skipjack.

LOGLINE



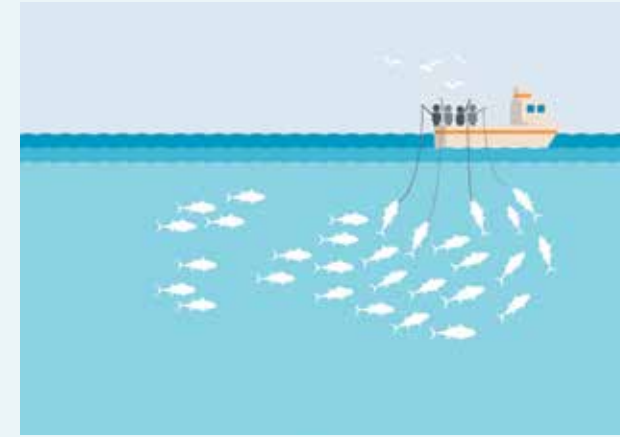
Longline fisheries trail a main line behind a boat. Baited hooks are attached at regular intervals to attract the target species²⁷. The line can be between 1 and 30 miles long, with up to 3,000 hooks per line²⁸. Longline fishing represents 11% of global tuna catches but they are used for catching 38% of Eastern Pacific Ocean bigeye and 96% of South Pacific Ocean albacore.

GILLNETS



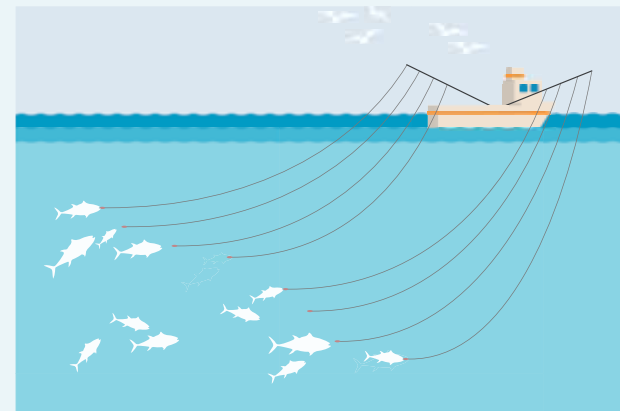
A gillnet is a ‘curtain’ of netting that hangs in the water³⁰. Fish swim into the net and get caught by their gills. Gillnets represent 4% of global tuna catches but they are used for catching 22% of Indian Ocean skipjack and 19% of Western Central and Pacific Ocean yellowfin³¹.

POLE & LINE



In pole and line fishing, fishermen locate a school of tuna, then may scatter small live bait fish and spray water onto the sea surface. This creates the illusion of an active school of prey, sending the tuna into a feeding frenzy, where they will bite anything they see. Fishermen then line up, equipped with hand-held poles with barbless hooks. Once a tuna bites, the fisherman flicks it up over their head and onto the deck²⁹. Like in purse seine fishing, pole and line fishing can also be used to catch fish that congregate around FADs, or on ‘free schools’ of tuna (see page 20-25). Pole and line fishing represents 8% of global tuna catches but they are used for catching 32% of North Pacific albacore and 21% of Indian Ocean skipjack.

TROLLING



Trolling is a type of handline fishing. A slow-moving boat tows multiple (10 to 20) fishing lines that are baited with hooks used to lure in the fish. The lines can be hauled in by hand or mechanically. Whilst trolling represents less than 12% of tuna catches worldwide, it is used to catch 19% of Northern Atlantic Ocean albacore and 21% of Northern Pacific Ocean albacore³².

“Different fisheries have vastly different impacts depending on how the fishing gears are used and where the tuna is fished.”

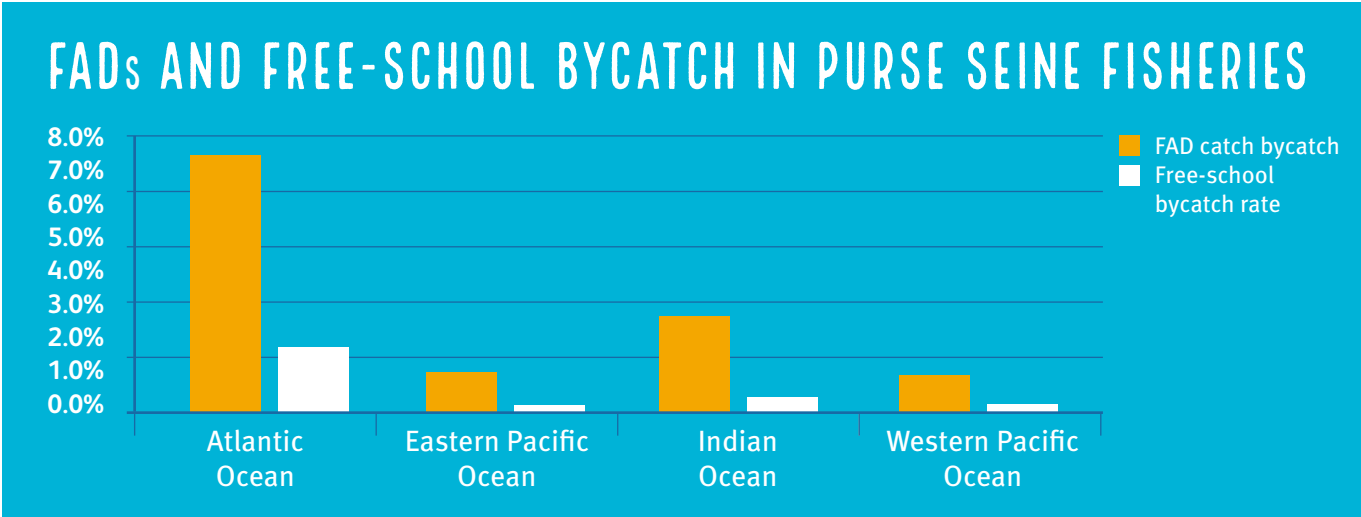
Jim Humphreys, MSC Global Fisheries Coordinator

FISHING METHODS: FISH AGGREGATING DEVICES AND FREE-SCHOOL FISHING

Tuna are highly migratory, ranging over thousands of miles. Some fishermen track tuna or follow these migrations to catch the tuna schools, this is called ‘free school’ fishing. Other fishermen use objects to help them locate and catch the tuna more easily, called Fish Aggregating Devices (FADs). This section discusses both of these methods and any associated environmental impacts.

Purse seine nets and poles and lines are set and deployed on free-swimming schools of tuna, which are not associated with floating objects or other marine life. This can result in lower bycatch, but also smaller catches, compared to nets or lines that are set on schools of tuna associated with FADs³³.

The following table shows differences in average bycatch rates found between the FAD and free-school tuna fisheries. Data is not available on the differences in bycatch rates for specific gear types.



Source: 34

Various environmental NGOs, including Greenpeace, have campaigned to support free-school fishing because of the lower levels of bycatch. While free-school sets do have a range of benefits, there are also some drawbacks, including:

- Given the time needed to find the tuna schools, it is expensive, so fishing boats typically also fish using FADs on the same trip.
- There is no internationally-accepted distance that a fishing boat has to be from a

FAD to count as ‘free-school’ fishing, but distances can range from 1 to 5 nautical miles. This could result in fishing being conducted on a FAD-associated school of tuna even though the fishery purports to be fishing using free-school methods. Under the current MSC Standard, fishing activities are assessed using definitions from the Regional Fisheries Management Organisation, i.e. by fishing practice. This is currently under review (see page 39 Compartmentalisation and Unit of Assessment).



FISH AGGREGATING DEVICES (FADs)

Due to their highly-migratory nature, it can be extremely difficult for fishermen to locate a tuna school.

Many fish species including tuna, are attracted to, and aggregate around, floating objects in the ocean. Firstly, small fish are attracted to the structure of the FAD, and in turn, this attracts bigger pelagic fish such as tuna. As a result of this natural behaviour, the fishing industry developed Fish Aggregating Devices (FADs) to make finding and fishing tuna easier.

FADs are modified natural or man-made floating objects, often floating wooden structures with hanging nets, used to attract fish³⁵. Once the fish are aggregated, the fishermen deploy nets or cast fishing lines close to FADs to catch the tuna. FADs can be drifting or anchored, entangling or non-entangling, and can be made from biodegradable materials (still in the experimental-development phase). All have different impacts on the environment depending on where and how they are used. FADs are used in 65% of purse seine sets³⁶ and in 40% of the world's skipjack catch³⁷.

Impacts of FAD Use

FADs, particularly those that are left to drift on the high seas, are highly controversial because of their potential impact on the marine environment. This poses a risk to the sustainability of tuna fisheries because marine life can become entangled in the nets that are attached to some designs of FADs. The aggregation of species other than tuna beneath FADs also makes them more likely to be caught as bycatch in the same nets or lines used to catch tuna. This causes concern among NGOs and creates apprehension about sourcing from fisheries that use FADs.

Other issues with drifting FADs include their potential effects on tuna migration and the materials they are made from: if a FAD becomes lost or derelict, it can damage corals or contribute to ocean plastic. This is problematic because there are an estimated 90,000–120,000 FADs worldwide³⁸ so their cumulative impact can be damaging if not managed effectively.

FAD Improvements

Some segments of the tuna fishing industry – in partnership with research institutions – are developing measures to reduce the impact of FADs through technological improvements in FAD design, which have advanced considerably over recent years. For example, some fisheries are trying to adopt the use of biodegradable and non-entangling drifting FADs to reduce their persistence in the marine environment and reduce the entanglement of non-target species. These efforts, combined with improved tracking and data collection, licensing and registration of FADs, monitoring and retrieval of old FADs, and purse seine gear modifications, have enabled fisheries using FADs to reduce their non-target bycatch to levels at which MSC certification is a possibility.

These improvements led to the first tuna fishery using drifting FADs to achieve MSC certification in 2018. Working with the Indian Ocean Tuna Commission and Seychelles authorities, the Echebastar purse seine tuna fishery has actively sought to reduce bycatch of non-target species by reducing numbers of FADs, deploying only non-entangling FADs and ensuring the rapid release of non-target species. These efforts demonstrate leadership within the tuna fishing industry. Now certified, this fishery will also be required as a condition of its certification, to invest in research and practices to further reduce the potential impacts of FADs and better understand their impacts.

40% of the world's skipjack is caught using FADs

There are an estimated **90,000–120,000** FADs in the oceans today

FADs EXPLAINED

MSC certification is based on comprehensive assessment of the impacts of a fishery and the environment within which it operates. Following FAO guidelines any fishing gear, except explosives and poisons, is eligible to be assessed under the MSC programme. Therefore, the MSC does not explicitly exclude fishing vessels that set on FADs from being certified. However, any fishery with high non-target bycatch or impacts from lost FADs will need to make improvements to meet the MSC Standard's minimum criteria for environmental impact (Principle 2) and achieve certification.

Natural FADs

Some tuna fisheries target natural structures or floating objects, including free-floating logs (tree trunks) and large marine animals, such as whale sharks, around which fish congregate. This is referred to as 'natural-associated' or 'object-associated' fishing³⁹.

Risks: Because gear set on natural FADs may be close to large marine animals, it can result in their bycatch.

Mitigation: Due to the impact on whale sharks in the Parties to the Nauru Agreement tuna fishery (see case study in page 56), the fishery banned setting purse seine nets on whale sharks in 2012⁴⁰. Other fisheries require a set distance between the natural FAD and where fishing gear can be deployed.

Used In: No MSC certified fisheries set on logs or whale sharks.

Anchored FADs

The FAD is a raft – often made of bamboo – fixed to an anchored buoy, usually in coastal waters. Anchored FADs can be either non-entangling or entangling. They are used by both commercial and subsistence fisheries and are most commonly associated with pole and line fishing. The FAD stays in the same position and doesn't drift, reducing the risk of it getting lost or damaging reefs.

Risks: These FADs can be anchored in vulnerable habitats, such as corals and can be associated with catching juvenile yellowfin. Some anchored FADs also include entangling nets which can result in non-target species being caught in the FAD nets.

Mitigation: Anchoring in vulnerable habitats can be avoided. Fishermen can relocate their fishing if too many juveniles are being caught in a particular area.

Used in: MSC certified Maldives pole and line skipjack fishery, MSC certified Solomon Islands skipjack and yellowfin purse seine and pole and line fishery, PT Citraraja Ampat, Sorong, skipjack and yellowfin.

Biodegradable FADs

Several companies are currently researching non-entangling, biodegradable FADs to reduce the impact of discarded FADs on coral reefs and to reduce the rate of plastics entering the ocean. These are currently at the experimental stage.

DRIFTING FADs (dFADs)

Non-entangling FADs

Non-entangling dFADs drift with ocean currents and winds. Non-entangling dFADs use ropes or rolled up nets to avoid entangling marine creatures. Each dFAD has a buoy with a reference number and a GPS unit so the fishermen can find them⁴¹.

Risks: Evidence is still needed to fully determine the impact of lost dFADs.

Mitigation: Non-entangling dFADs can be designed to reduce the risk of entangling animals⁴². The first certified fishery to use dFADs in 2018 uses 100% non-entangling dFADs.

Used in: MSC certified Echebatar purse seine skipjack fishery.

Entangling FADs

Entangling FADs have nets that hang in the water column from a floating structure. They can be anchored to the seabed or drift on the high seas.

Risks: The nets serve to attract a greater variety of animals and can result in them being caught. The FADs can be constructed using a variety of materials. The ones that have open nets hanging from the raft tend to have the highest rates of entanglement⁴⁴.

Mitigation: Entangling FADs can be modified e.g. by rolling the nets up into 'sausages', to reduce the risk of entangling other animals.

Used in: No MSC certified purse seine fisheries use entangling FADs.

CONSIDERATIONS IN SOURCING TUNA

STOCK STATUS

Worldwide there are 23 stocks of the major commercial tuna species (6 albacore, 4 bigeye, 4 bluefin, 5 skipjack and 4 yellowfin stocks). A recent report from the International Seafood Sustainability Foundation (ISSF) shows that 65% of tuna stocks are at a healthy level of abundance, 13% are overfished and 22% are at an intermediate level.

How MSC certification addresses stock challenges

Principle 1 of the MSC Fisheries Standard asks: Are enough mature fish left in the ocean to breed? Fishing must be managed at a level that ensures it can continue indefinitely and the fish population can remain productive and healthy. For those stocks that are depleted, fishing must be conducted in a manner that demonstrably leads to their recovery.

One of the six questions in Principle 1 looks at the size of the total fish stock. For a fishery to be certified without conditions, the target fish stock – the amount of mature fish in the stock – must be at (or around) a level consistent with Maximum Sustainable Yield (MSY).

What is MSY?

In population ecology MSY is the largest average yield (catch) that can theoretically be taken from a species’ stock over an indefinite period under constant environmental conditions. It is usually measured in tonnes⁴⁵. To have a viable and thriving fishing sector, the size of fish stocks must be at, or above, levels where they can produce the maximum sustainable yield over an indefinite timeframe.

The state of stocks in MSC certified fisheries

Globally, stocks targeted by MSC certified fisheries are in general more abundant and harvested less intensively, than those targeted by non-certified fisheries: nearly three quarters (74%) of certified stocks are at or above the MSY level, compared with less than half (45%) of uncertified stocks included in the study.

A small group of stocks targeted by certified fisheries are below the MSY level, but above the biological limit for that particular stock. The fisheries targeting these stocks have strict plans in place to rebuild stocks back to desired and sustainable levels. For example, the North Atlantic albacore stock reduced catches by setting a conservative Total Allowable Catch to rebuild the stock back toward sustainable levels. Following the rebuilding, the stock now has a well-defined HCR in place to maintain it at a level consistent with producing MSY.

THE HEALTH OF TUNA STOCKS AROUND THE WORLD⁴⁶

Species	Indian Ocean (IOTC)	Atlantic Ocean (ICCAT)	Western-Central Pacific (WCPFC)	Eastern Pacific (IATTC)	Southern Hemisphere (CCSBT)
Skipjack		East and West			n/a
Yellowfin					n/a
Bigeye			Skipjack		n/a
Albacore		North and South Atlantic Mediterranean	Both South Pacific and North Pacific		n/a
Bluefin (three species)	n/a	Atlantic Bluefin	Pacific Bluefin	Pacific Bluefin	Southern Bluefin

Stock is at or above B_{MSY}*

Stock below B_{MSY} but it has been stable, increasing, or fluctuating around SSB_{MSY}** because the stock is being managed at F_{MSY}***. Yellow is also used in the absence of a stock assessment

According to ISSF, Skipjack stocks, which make up more than half of global catches, are generally healthy. However, all stocks of bluefin stocks are overfished with evidence of recovery existing for the southern bluefin and Western Atlantic stock of Atlantic bluefin. Of the remainder, 2 out of 6 albacore stocks are overfished and some yellowfin stocks are declining or overfished. 13% of the total tuna catch comes from stocks where fishing is not well managed.

Global catch of tuna has tended to increase consistently, from less than 0.6 million tonnes in 1950, to more than 6 million tonnes today (UN FAO). With these trends continuing there is an urgent need not only to reduce fishing pressure on those stocks already overfished, but to protect and effectively manage those currently in a healthy state.

* B_{MSY} is the biomass associated with the Maximum Sustainable Yield (MSY), where the biomass is simply the body-weight of all the fish of one specific stock in the water. Biomass is measured in tonnes. MSY is the largest yield of fish that can be caught from a specific fish stock over an indefinite period under constant environmental conditions.
** SSB_{MSY} is the Spawning Stock Biomass (SSB) associated with the MSY
*** F_{MSY} is the fishing mortality rate consistent with achieving the MSY.

HARVEST CONTROL RULES

Harvest strategies and Harvest Control Rules (HCRs) define how catches should be reduced if a fish stock declines. HCRs are recognised as best practice in fisheries management. They are tied to scientifically derived reference points and are incorporated in the MSC Fisheries Standard.

A fish stock usually declines because the number of young fish coming into the population has been low or catches have been too high. This is like a business that finds itself with lower sales than expected, or higher expenditures. Either circumstance can damage the company’s balance sheet and put it at risk. If the board of a business does not react rapidly, the business can go bankrupt. The business needs to respond quickly to save the business, and likewise, RFMOs need to respond quickly when stocks decline.

HCRs that are pre-agreed, well defined and scientifically tested can be triggered much faster, and with more reliable effect, than simply asking the management authority to consider each situation independently. This is particularly important with

tuna and other highly migratory stocks managed by RFMOs since the decision-making body is made up of many independent states, and a consensus is needed. This situation can delay decision making by many years, and when fish stocks start to drop, delays in adopting conservation measures almost always lead to further decline.

The assessments of most tuna fisheries to the MSC Fisheries Standard have identified the need for improvements to, or adoption of well-defined harvest strategies and HCRs.

Responding to the need for well-defined HCRs, and pressure from some fisheries wishing to achieve or maintain MSC certification, RFMOs are intensifying their efforts to develop HCRs for many stocks. As a result, all tuna RFMOs now have the delivery of HCRs and harvest strategies for most stocks set within their work plans by the early 2020s.

Empty cells are those stocks where there is no HCR and no fisheries are MSC certified at the time of writing.

To date, four of the five tuna RFMOs have agreed HCRs for particular tuna stocks. Other tuna fisheries in the MSC programme aligned their HCR conditions in spring 2019, accelerating some, and extending others, so that multiple certified fisheries in the same region could coordinate their efforts.

At present, the majority of MSC certified tuna fisheries have a condition to adopt well-defined

HCRs (see table page 28). Therefore, as more fisheries become MSC certified, increasingly, RFMOs are being encouraged to adopt HCRs.

Along with our partners, the MSC is pushing for stronger action from RFMOs. Retailers can encourage RFMOs to adopt harvest strategies and HCRs by encouraging the member delegations from each country to support them in RFMO meetings.

CASE STUDY: ADOPTING HCRS FOR SKIPJACK IN THE INDIAN OCEAN TUNA COMMISSION (IOTC)

The Maldives pole & line skipjack tuna fishery became MSC certified in 2012 with key conditions that the fishery would have effective HCRs by the fourth annual audit in 2016. To make this happen, the HCRs had to be developed and passed through consensus by the IOTC. To aid this process, the Maldivian Government proposed the development of interim Harvest Control Rules for adoption at the 2014 Commission meeting.

There followed months of meetings and collaboration among fishers, industry groups, NGOs and retailers to gain support for HCRs in between IOTC meetings.

The IPNLF hosted a workshop, supported by the MSC, WWF, the International Seafood Sustainability Foundation (ISSF), Sainsbury’s, Marks and Spencer and World Wise Foods, helping to build support for the Maldivian proposal. In the months before the 2016 IOTC commission meeting, retailers and brands also added their voice to calls for the HCR. Their commitment to sustainably sourced tuna provided further incentive for international agreement on the protection of tuna stocks for the future.

These actions resulted in a final resolution that was passed by all but one of the IOTC members, demonstrating their collective commitment to tuna sustainability. Adoption of the HCR is a core component of maintaining the fishery’s certificate and ensuring long-term sustainability.

Dr David Agnew, then MSC Science and Standards Director said: **“The MSC’s requirements for well-defined harvest control rules have been a catalyst for this decision. We applaud the efforts of the Maldivian fishers who, along with the IPNLF and other industry and NGO groups, have shown strong leadership in finding a consensus on this vitally important issue.”**

I Indian Ocean Tuna Commission
II International Commission for the Conservation of Atlantic Tunas
III Western Central Pacific Tuna Commission
IV Inter-American Tropical Tuna Commission
V Commission for the Conservation of Southern Bluefin Tuna

TUNA STOCKS WITH HCRS AND STOCKS WHERE MSC CERTIFIED FISHERIES HAVE COMMITTED TO DELIVERING HCRs

Species	Indian Ocean (IOTC) ^I	Atlantic Ocean (ICCAT) ^{II}	Western-Central Pacific (WCPFC) ^{III}	Eastern Pacific (IATTC) ^{IV}	Southern Hemisphere (CCSBT) ^V
Skipjack	HCR in place	2022	2021	Managed by the HCR on YFT and BET	n/a
Yellowfin		2022	2021	HCR in place	n/a
Bigeye			2021	HCR in place	n/a
Albacore		HCR in place	2021 (South Pacific stock) 2023 (North Pacific stock)	2023	n/a
Southern Bluefin					HCR in place



BYCATCH, NON-TARGET SPECIES AND ETP SPECIES

Fish live in multi-species communities, so wherever there is fishing there is always likely to be some incidental capture of non-target species (i.e. those species that the fishery did not intend to catch). It is also common for fisheries to target more than one species at a time due to market demands, profitability and the availability of different species. This is especially common in mixed fisheries, where many species are caught in one area or type of fishery (e.g. trap fisheries).

To be MSC certified, fishing activity must not have a long-term detrimental impact on the population of any marine species.

Non-target species that are caught may be considered as 'bycatch' (because they are not the main target species), but they may still be retained if they are considered valuable (either for commercial reasons, or for subsistence). Either way, it is important that all species, including non-target species, are managed effectively and there is good information about their population status and impacts.

MSC certified fisheries are required to investigate and minimise bycatch wherever possible. This is

especially true for interactions with Endangered, Threatened and Protected (ETP) species. Conditions set for MSC certified fisheries have resulted in significant reductions to the level of bycatch and interactions with ETP. For example, the Western Australian rock lobster fishery which, following improved research, reduced interactions with sea lions to zero. Also, since becoming MSC certified, the South African hake fishery has reduced interactions with albatross by 99% and the Fiji albacore tuna fishery has implemented measures to reduce bycatch of sharks.

A fishery's impact on ETP species should always be minimised. Catching these species should be avoided (by implementing measures to minimise the chance of their capture). When they are accidentally caught, handling practices should be implemented to ensure their safe release and to maximise their chance of survival.

A new requirement was added to the most recent version of the MSC Fisheries Standard (version 2.0, effective from 2015) for fisheries to regularly review alternative bycatch mitigation measures and implement them wherever appropriate.

SHARK FINNING

Some fisheries carry out ‘shark finning’, where fins (which are of high value in some markets) are removed and the dead or dying carcass of the shark is discarded at sea⁴⁷. In 2000, it was estimated that between 40-176 million sharks had entered trade after being finned (Worm et al, 2013).

In December 2011, the MSC Board of Trustees resolved that shark finning would be prohibited within MSC certified fisheries from March 2013.

The MSC therefore introduced new requirements to the MSC Fisheries Standard, so that fisheries can only be certified where it is likely that shark finning is not taking place with effective monitoring, control and

enforcement systems to address isolated incidents of shark finning. This encourages certified fisheries to eradicate shark finning and that a sustainable, law-abiding majority of fishers are not punished for the actions of a single boat.

The challenge is to ensure the MSC programme supports the eradication of shark finning, rather than simply removing the problem from the MSC programme.

Since the introduction of these requirements, the MSC has recognised a need to review the current requirements to ensure that the intent is clear and being effectively delivered in MSC certified fisheries.

This topic will be addressed through two separate reviews. In the first, the MSC is consulting on the proposal that any single business entity (e.g. a single operator) convicted of shark finning within the last two years would be ‘out of scope’ for MSC certification and therefore not eligible to sell their catch as MSC certified. This would also apply to all subsidiary businesses. If agreed, the new rules would come into effect in 2020. The consultation period for this review closed on 4th April 2019.

The topic will also be reviewed in greater depth as part of the Fishery Standard Review with updates released in 2021.
Find out more at improvements.msc.org



ILLEGAL FISHING

Illegal, unreported and unregulated (IUU) fishing is where fishing is conducted counter to the management measures in that jurisdiction. It includes vessels fishing without a licence for a particular area, vessels with a licence but fishing in excess of their established quotas or using prohibited gear types or fishing methods.

As part of the MSC's commitment to the UN Sustainable Development Goals (SDGs), MSC is committed to eliminating IUU fishing in certified fisheries to the point where: it is non-existent, or where IUU does exist, it is at such a low level that the fishery management, including assessments and the estimation of IUU impacts on harvested species and the ecosystem, can maintain affected populations at sustainable levels.

IUU fishing:

- Depletes fish stocks
- Destroys habitats
- Disadvantages honest and legitimate fishermen
- Weakens coastal communities (particularly in developing countries)
- Undermines legal markets and reinforces illegal ones (IUU is estimated to be worth US\$10-23.5 billion annually)⁵⁵

Tuna species are vulnerable to IUU fishing: tuna can be an extremely highly-prized and valuable species, caught in high seas where they are difficult to monitor. Once tuna enters international trade it is essentially a commodity, and illegally-caught fish can be easily concealed if traceability systems are not in place⁵⁶. Of course, there are huge variations in monitoring and visibility and the risk of IUU fishing varies enormously by flag state and even by fishing gear.

TRANSSHIPMENT

Transshipment is the transfer of seafood catch between a fishing vessel and a carrier vessel at sea or in port. Transshipment is an important part of fishing supply chains, enabling fishing vessels to spend their time fishing at sea, rather than transporting fish to what may be distant ports, allowing the fishing activity to be more efficient⁴⁸.

Since tuna account for around 61% of the total high seas catch (by volume)⁴⁹ and they are one of the more popular species for transshipping on the high seas⁵⁰, a considerable proportion of tuna may undergo transshipment. Longlines are one of the gear types more likely to be involved in transshipment, as they often lack the deep-freezing facilities to maintain the high-quality products⁵¹.

However, transshipment can be associated with IUU fishing, as it can be a means of concealing the true origin of catches. It is estimated that in the Western and Central Pacific Ocean alone, at least US\$142 million worth of tuna and tuna-like species are moved in illegal transshipments each year⁵². To prevent this, some RFMOs have restricted tuna transshipment to ports or have prohibited certain vessels from transshipping⁵³ and there are controls required for high seas fisheries e.g. observers on vessels, agreed transshipment locations and controls by flag states. However, to prevent illegal transshipments, the transfer of tunas needs to be documented throughout the supply chain (at-sea and in port), collecting data on the catch, the catch

method and information about the transshipment. Whilst these documents are usually found to be available when the fish are landed directly into ports, the documents are often found to be less precise or incomplete when the fish are transhipped, particularly in long supply chains. These data gaps can complicate sustainable sourcing decisions and, therefore, the MSC mandates that seafood is traceable in all steps of the supply chain⁵⁴.

The MSC's requirements for traceability both at sea and on land and in relation to IUU fishing help to mitigate these issues. MSC certified fisheries must not be involved IUU fishing, certified catch must be clearly documented and segregated from non-certified catch and certified fish must not be purchased from or carried on vessels that have been blacklisted by international fisheries management bodies for engaging in IUU fishing.

Many NGOs have also expressed concern that, by removing the need for fishing vessels to return to land, transshipment increases the risk of forced and bonded labour violations. Since 2014 any organisation prosecuted for forced labour violations in the last two years has been ineligible for MSC certification, and since 2018 all certified fisheries have been required to detail measures on their actions to mitigate the presence of forced or child labour. Further assurances are in development to ensure that the MSC supply chain is free from forced labour, (see page 36).



FORCED LABOUR

“Around the world, more than 150 million children and 25 million adults are involved in forced labour. We recognise the urgency in addressing forced and child labour violations and have put measures in place to tackle this issue in the supply chain for certified seafood.”

Dr Yemi Oloruntuyi, MSC Head of Accessibility

Labour abuse in the seafood supply chain has become an increasing area of focus with media reports exposing exploitative labour practices, including slavery and human trafficking⁵⁷. Forced labour is a particular concern in the catching sector, where vessels and their crews can spend long periods at sea, beyond the reach of enforcement agencies, without the applicable worker protection legislation and where crew members have limited access to communication methods and external support⁵⁸.

The MSC condemns the use of forced or child labour and recognises the importance of social issues when considering sustainability. As a result, the MSC is currently reviewing and improving the requirements to ensure there is no forced labour in certified fisheries. All fisheries in the programme must complete a declaration by August 2019, detailing the measures they have in place to mitigate the presence of forced or child labour.

This is the first stage of a phased approach where the MSC will introduce auditing requirements, on a risk basis, to ensure the exclusion of forced labour in MSC certified fisheries.

In September 2019, new auditing requirements will come into place for all Chain of Custody

certificate holders. All MSC Chain of Custody certificate holders will be required to undergo an independent labour audit unless they can demonstrate that they are at “lower risk” of practising forced or child labour.

To determine if a labour audit is necessary, auditors will assess supply chain companies to see what level of risk there is of labour violations occurring during processing, packing or repacking, and manual offloading in the country or countries they operate in. If a country is considered of lower risk, according to two or more of the following indicators, then the site does not require a labour audit:

- Country Risk Assessment Process for SA8000
- International Trade Union Confederation Global Rights Index
- Ratification of five or more UN conventions on forced or child labour, human trafficking or seafood/fishing
- US Department of Labor List of Goods made with incidence of forced or child labour

These indicators are globally recognised, transparent and commonly used in the seafood industry and were carefully selected through a multi-stakeholder consultation process.

Where required, labour audits must be on-site, conducted by an independent third-party social auditor and use one of three labour audit programmes recognised by the MSC: amofi BSCI audit; SEDEX - Sedex Members Ethical Trade Audit and SA8000 Certification from Social Accountability International. In the future, the MSC will also recognise labour programmes recognised by the Sustainable Supply Chain Initiative (SSCI).

Certified companies that fail to address identified labour violations within 30 days will have their MSC certificates suspended.



TRACEABILITY

Traceability goes hand-in-hand with sustainability: a traceability system is the best method to prevent fraud and illegal products from entering the supply chain as certified product⁵⁹. It helps protect consumers and the efforts of everyone working hard to keep our oceans healthy⁶⁰.

A traceable supply chain is key to delivering the MSC’s vision of healthy oceans and providing its consumers with sustainable seafood they can trust⁶¹.

The MSC programme is the only certification programme of its kind to offer ocean-to-plate traceability through supply chain certification. The MSC Chain of Custody Standard requires that MSC certified seafood is kept separate from other seafood, and can be traced through the entire supply chain, thereby ensuring its certified sustainable origin⁶².

MISLABELLING

Mislabelling is where incorrect information is applied to a product. Mislabelled seafood may involve the substitution of other species, including lower-value or even endangered species⁶³.

Higher rates of mislabelling have been identified among premium foods (where the potential gains are higher) and in restaurants or take-away outlets (where labelling on the final product may be sparse⁶⁴).

Of the tuna species, mislabelling is highest for bluefin (between 50% and 100% is mislabelled), due to its high value⁶⁵. In the UK, mislabelled skipjack has been recorded as being substituted with yellowfin and bigeye, to hide illegally-caught fish⁶⁶. DNA testing has revealed that MSC labelled seafood has almost no cases of species mislabelling⁶⁷.

COMPARTMENTALISATION AND UNIT OF ASSESSMENT

In an MSC assessment, a unit of assessment (UoA) is defined by the target stock, fishing method, vessel type or gear and fishing fleet. It defines the catch that will be assessed and that may subsequently enter the supply chain as MSC certified⁶⁹.

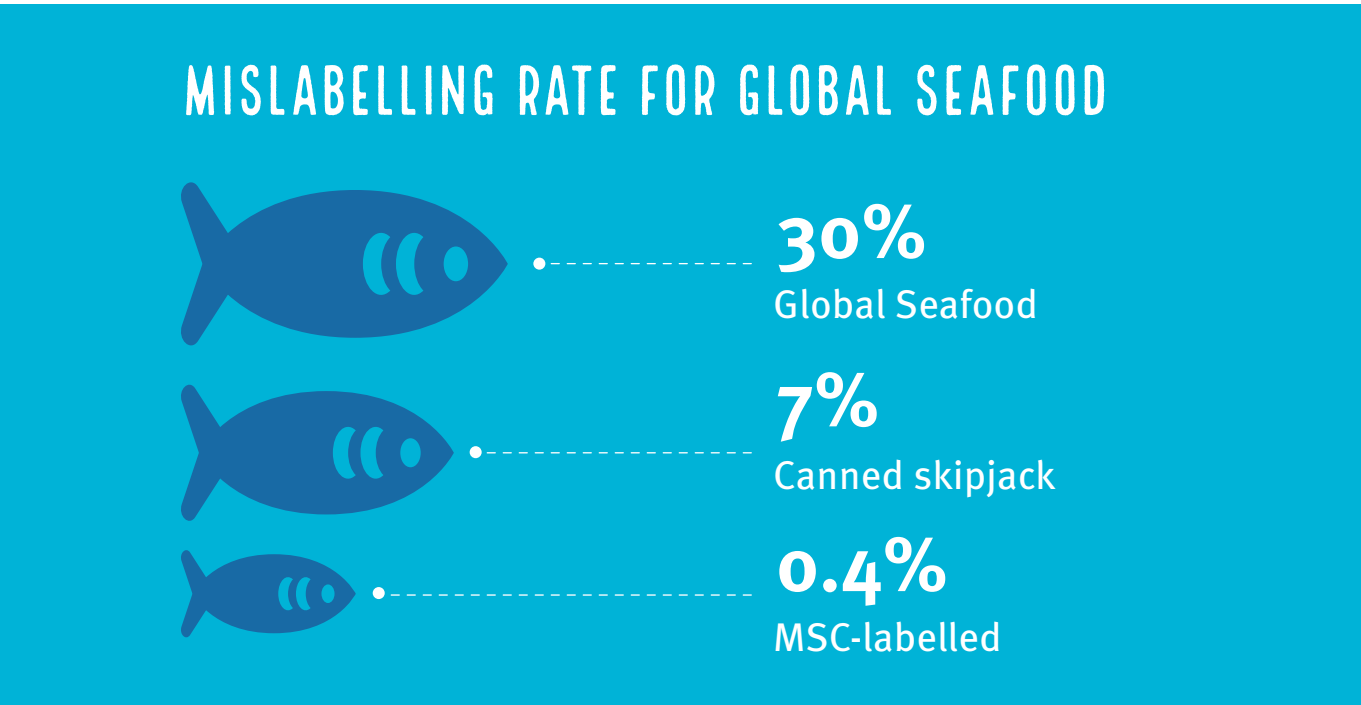
The MSC’s current requirements allow fishing vessels to catch both certified and uncertified catch of the same species during the same fishing trip, provided catches are carefully separated, documented and verified – known as ‘compartmentalisation’⁷⁰.

Most market-based programme allow compartmentalisation with the intent that over time, market demand for sustainable products will result in producers favouring certified production, making improvements to their overall operations. Soil Association certified organic farmers, for example, can grow organic and non-organic crops on the same farm as long as these crops are segregated and not mixed. However, stakeholders have raised concerns related to the overall sustainability of fishing activities which use both certified and uncertified fishing practices on the same stock, during the same fishing trip.

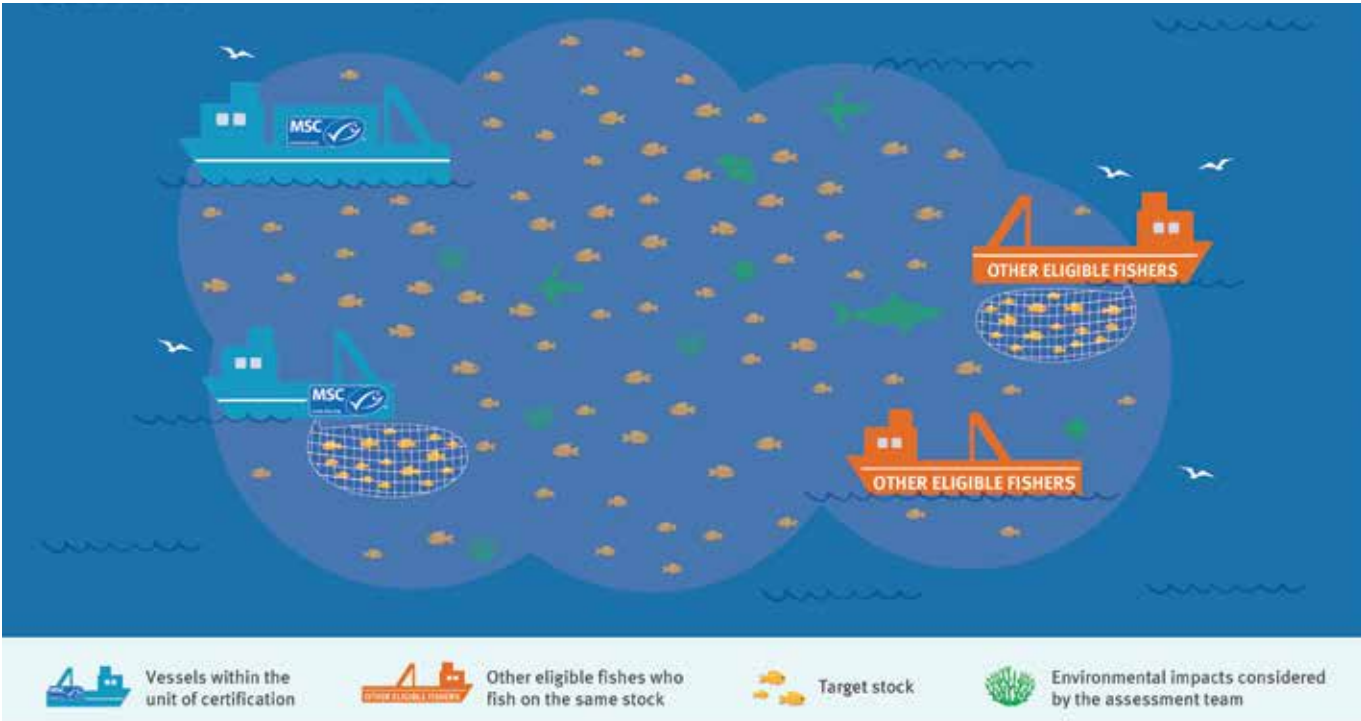
The MSC recently consulted on the following changes to the definition of unit of assessment:

- Removing the term 'fishing practice' from the definition of the unit of assessment. This means that all individual fishing practices using the same gear type (e.g. purse seine fishing on free schools and Fish Aggregating Devices) would need to be assessed as part of the UoA
- Adding a requirement to define the geographic area of the UoA to increase clarity. In practice, this would mean a tuna purse seine fishery with multiple fishing practices could no longer seek certification for the free school component of its catch alone

The MSC will also consult on the timelines, likely three or five years, for the adoption of the new definition of unit of assessment by already certified fisheries. Fisheries that are already certified would be given time to adapt to any new requirements. The consultation closed on 3rd April 2019; you can see further details at: [improvements.msc.org](https://www.msc.org/improvements).



Source: Figure produced from information found in 68.



RESPONSIBLE AND SUSTAINABLE SOURCING CLAIMS

Buyers can minimise risks in their supply chain by examining individual fisheries and choosing fisheries to source from based on a comprehensive assessment of all aspects of the sustainability, management and potential environmental impacts of the fishery. However, with the variety of challenges and complexity in fisheries, it can be difficult for the buyers to understand and investigate all potential risks. Supply chain organisations have measured 'sustainability' using different metrics, which has resulted in inconsistent consumer-facing claims. For example, terms such as 'sustainably sourced' and 'responsibly sourced' have been used with different definitions and frameworks behind them, creating an inconsistent consumer message.

To show the difference between responsible and sustainable sourcing, and to make sourcing strategies more robust, organisations such as the Sustainable Seafood Coalition (SSC) in the UK produced guidelines and codes of conduct for sourcing and labelling to align sourcing requirements and to create common definitions.

According to these codes, responsible and sustainable are not the same thing. Responsible sourcing requires assessments to be conducted by the purchaser, to trace the fish to its origins and establish the risk profile of the species including: legality of fishing operations, status of the stock, management practices and wider environmental impacts. This determines a low, medium or high-risk rating of the species and fishery. From there, sourcing and claiming decisions need to be made according to the risk rating and whether improvements are needed within the source fishery. Only when this process has been completed, can a responsible sourcing claim be made.

Sustainable sourcing claims are backed up by certification to a third-party standard, such as MSC. They do not require the same self-completed

risk assessment, as the source fishery has already demonstrated and been certified as sustainable. Providing that traceability or chain of custody is in place, then sustainably sourced claims can be made on the final product.

In the UK, the majority of the retailers are members of the SSC. Under the SSC codes of conduct, members can only claim a wild-caught product is sustainable if it meets the principles of a recognised international standard and there is an independently audited chain of custody in place. In effect that means it requires either an independent third-party audit or certification and that fully audited traceability is in place to claim a product is 'sustainable'. Most commonly this is MSC certified product.

Products without an independently audited chain of custody cannot be described as sustainable. However, the SSC code of conduct also allows for claims of responsible sourcing, which can include fishery improvement projects (FIPs), where a risk assessment has been conducted of that source fishery and it meets key criteria as laid out by SSC sourcing codes of conduct.



FISHERY IMPROVEMENT PROJECTS (FIPS)

Fishery Improvement Projects (FIPs) are a vital step towards delivering sustainable tuna fisheries. They are multi-stakeholder projects aimed at assessing and improving a fishery's sustainability. FIPs that operate transparently and that are making measurable progress are a crucial tool to help fisheries work towards becoming sustainable and achieving MSC certification, and the MSC Fisheries Standard is often used as a performance benchmark. With a growing demand for sustainable seafood and a need to ensure our oceans are healthy, the MSC recognises this important contribution and the role FIPs play in improving fisheries' health.

Many seafood companies choose to source from FIPs when buying tuna and are also directly involved, collaborating with suppliers to provide oversight and funding to help improve the sustainability of the fishery. Significant support and investment have encouraged the use of better management practices and improved the availability of data. Much of the investment has also been focused on delivering practical improvements in fisheries, such as modifications in fishing gear, operating procedures to reduce unwanted catches, and observer coverage programmes to provide reliable data.

Recognising the need for long-term sustainability in these fisheries, some retailers have now included FIPs in their tuna purchasing strategies to incentivise sustainable tuna harvesting and meet responsible sourcing commitments. The MSC welcomes these commitments and has provided tools and staff to support fisheries making real progress and improvements on their journey to MSC certification.

Comprehensive FIPs (see box) with action plans often still have significant sustainability challenges to overcome. In the best cases, FIPs have been shown to provide a route for fisheries to overcome their challenges. For example, through significant investment as part of a FIP, the Cook Islands albacore & yellowfin longline fishery subsequently became MSC certified in 2015 (see page 50).

However, the effectiveness of FIPs can vary and when sourcing from FIPs, it is important to ensure that they meet minimum criteria: that their actions

are transparent; that they clearly show improvement in fishery performance; and that these fisheries ultimately demonstrate their sustainability through a robust, independent assessment process.

TRACKING FIPS

FisheryProgress (fisheryprogress.org) is an excellent way of tracking active FIPs, rating them according to their progress and providing transparency. This can give assurances to buyers that the FIP is effective and will result in substantive change on the water.

COMPREHENSIVE FIPS

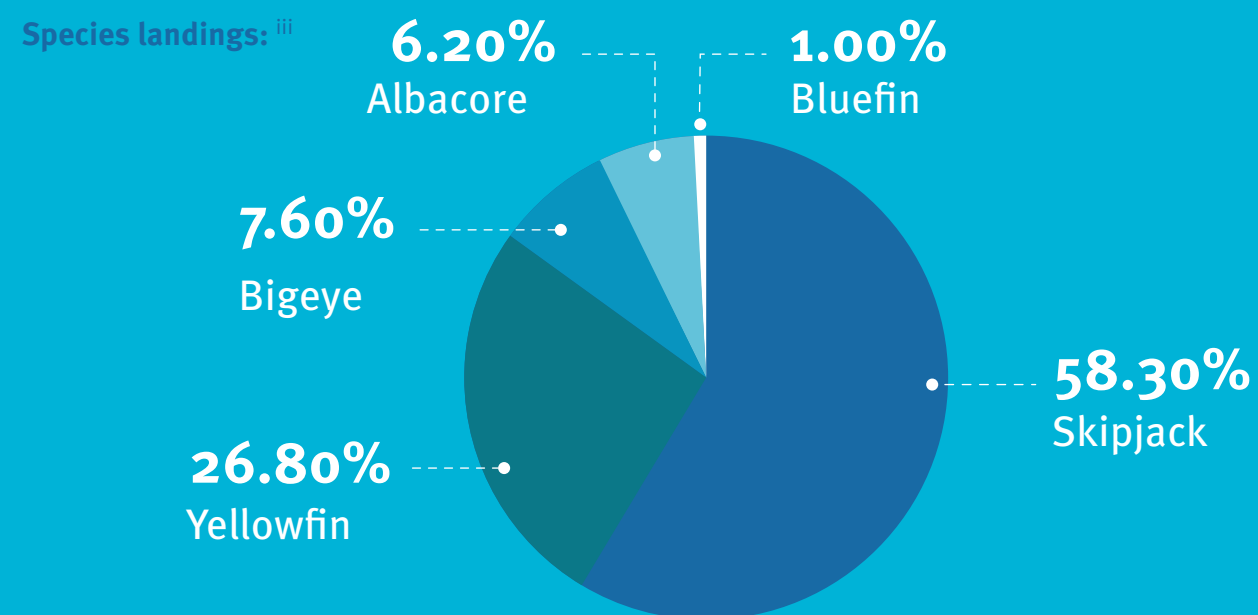
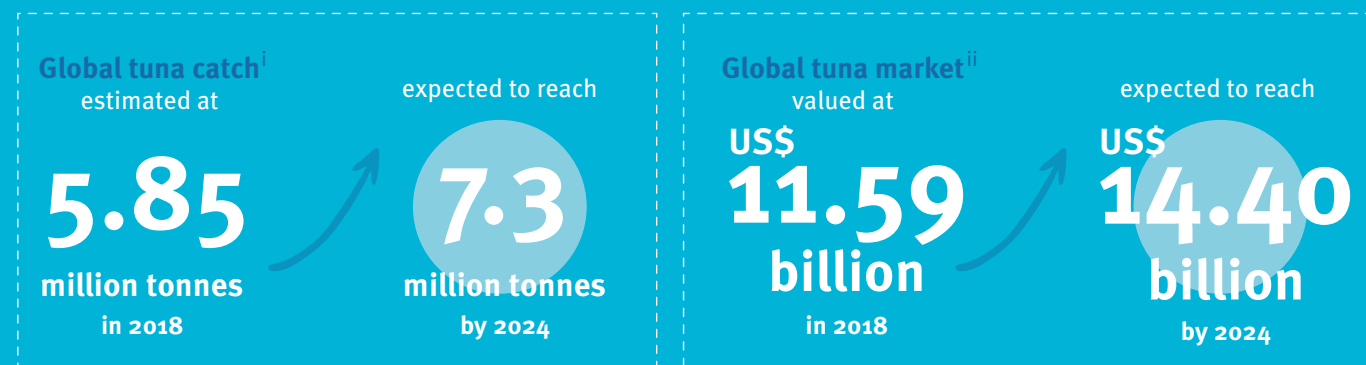
FisheryProgress defines Comprehensive FIPs as FIPs that “...aim to address all of the fishery's environmental challenges necessary to achieve a level of performance consistent with an unconditional pass of the Marine Stewardship Council Fisheries Standard. Comprehensive FIPs engage a party experienced with applying the MSC standard to complete an MSC pre-assessment to understand the challenges in the fishery and must have independent, in-person audits of progress against the MSC standard every three years.”

The MSC's Chain of Custody certification does not apply to FIPs. Therefore, any claims that tuna has been sourced from a FIP will need some form of alternative verification.

The MSC has provided a definition of a credible FIP and a toolkit for FIPs that incorporates these principles. Find out more about FIPs at msc.org/fips

TUNA MARKET DATA: GLOBAL

Some 20.49 percent of the world's tuna catch is MSC certified. This means it has been rigorously assessed against the state of the stock, environmental impacts and the management of the fishery



22.4%

of global tuna catch is MSC certified*

7.8%

of global tuna catch is currently in assessment for MSC certification**

21.9%

of global tuna catch is currently in a FIP (basic or comprehensive)***

47.9%

of global tuna catch is neither MSC certified, in assessment or in a FIP****

* 24 certified tuna fisheries

** 10 tuna fisheries in assessment

*** Based on the 26 Fishery Improvement Projects (FIPs) listed on Fishery Progress (0.3% in basic FIP)

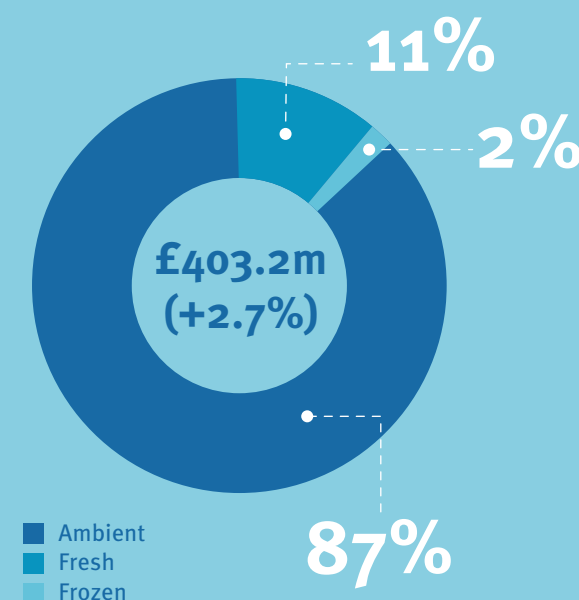
**** Data as of May 28, 2019

TUNA MARKET DATA: UK

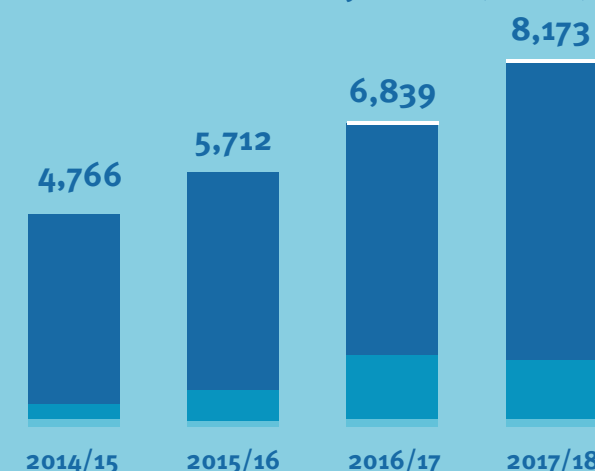
Consumers can look for the MSC's blue fish ecolabel to know that their canned tuna is sustainable. From sandwiches to salads and sushi, shoppers have a wide range of MSC labelled tuna products to choose from in the UK



Tuna retail sales by format in UK (2018) ^{vii}



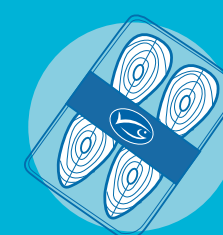
MSC Tuna UK market by volume (tonnes)



■ Tuna (skipjack)
■ Tuna (multiple)
■ Tuna (albacore)
■ Tuna (yellowfin)



MSC tuna by format in tonnes (2017/18)



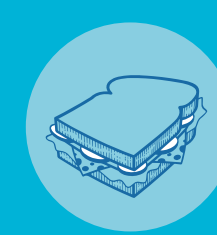
Chilled

117



Pet food

272



Retail food to go

3,033



Preserved

4,418

MSC CERTIFIED TUNA FISHERIES – CASE STUDIES

The following eight case studies demonstrate the diversity of MSC certified tuna fisheries. They have been chosen due to their presence in the UK market.

The case study fisheries comprise a mixture of tuna species and gear types and demonstrate a range of issues that tuna fisheries face. Each example illustrates how the fishery has overcome its main challenges and how the fishery plans to keep improving through its certification.

The case studies are:

- AAFA & WFOA North & South Pacific albacore
- Cook Islands albacore & yellowfin longline
- Echebatar Indian Ocean skipjack
- Maldivian skipjack
- PNA skipjack and yellowfin
- PT Citraraja Ampat, Sorong, skipjack and yellowfin
- Solomon Islands skipjack and yellowfin
- Tri Marine Western & Central Pacific skipjack and yellowfin

These fisheries represent a subset of those found in the MSC programme and a full list of all MSC certified tuna fisheries is available at <https://fisheries.msc.org/en/fisheries/>.

MSC SCORING SYSTEMS

When a fishery is assessed against the MSC Fisheries Standard, it receives a score for each of 28 sustainability indicators.

Scores of 100 = Near-perfect

Scores of 80-99 = Global best practice

Scores of 60-79 = Acceptable performance

Scores of below 60 = Fail

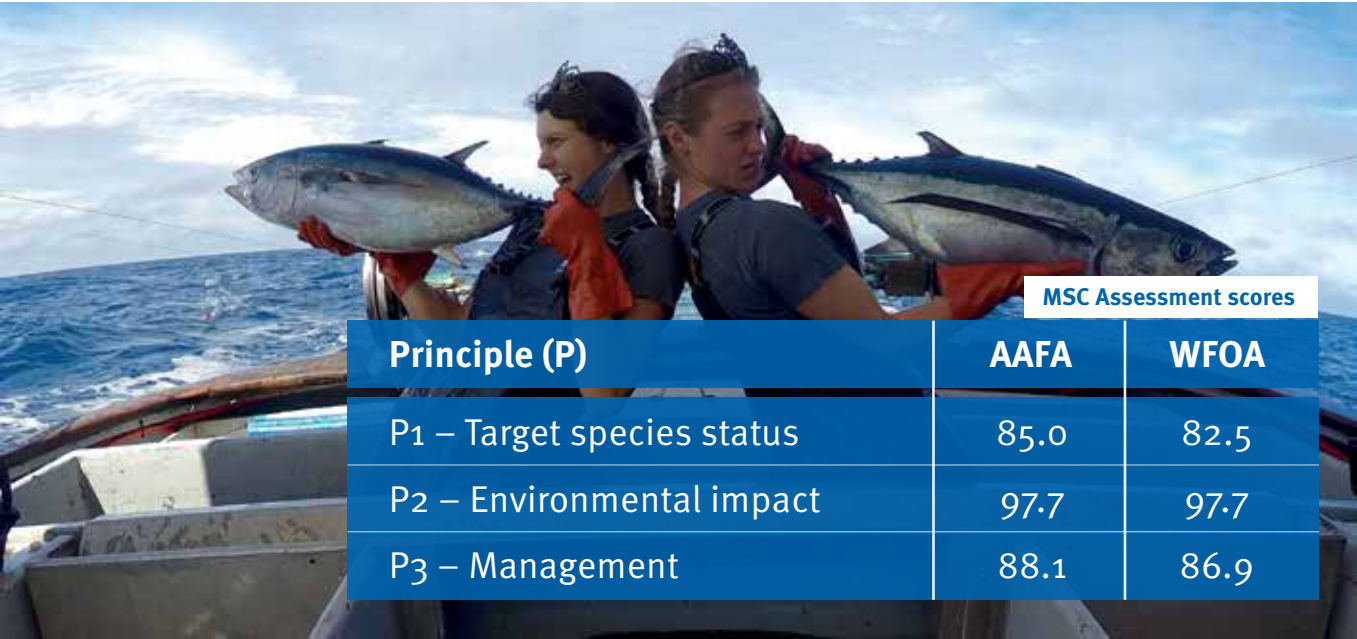
If a fishery scores 60-79 for any indicator, it must improve its performance within a specified time frame – normally the five-year duration of the certificate – in order to retain certification. Certified fisheries must score an average of at least 80 for indicators within each of the three Principles of the MSC Standard.



CASE STUDY

AAFA & WFOA NORTH & SOUTH PACIFIC ALBACORE

Gear type: Pole and line or troll and jig | **Tonnage:** North Pacific: 9,500 tonnes; South Pacific: 145 tonnes (2017) | **First certified:** 12th July 2016



MSC Assessment scores		
Principle (P)	AAFA	WFOA
P1 – Target species status	85.0	82.5
P2 – Environmental impact	97.7	97.7
P3 – Management	88.1	86.9

Background

The American Albacore Fishing Association (AAFA) was the first tuna fishery to be certified in 2007. They started sharing certificates with the Western Fishboat Owners Association (WFOA) in 2014. They are non-profit associations and many of the vessels have been operated by the same families for generations⁷¹.

There are distinct stocks of albacore in the North and South Pacific and these associations fish both stocks⁷².

The fisheries use both trolling and pole and line fishing gears. Both methods are very selective as they catch the tuna one-by-one and monitor catches in real-time, so catch of non-target species is very low (less than 0.5% in both fisheries). The fisheries monitor their bycatch and implement management measures to reduce it. For example, if the fishermen are catching too many juveniles in a particular area, they move fishing location⁷³.

Selected conditions and improvements

The AAFA and WFOA fisheries have adopted a number of major improvements and addressed conditions to ensure long-term sustainability.

Stock Status

Through its original certification, AAFA and WFOA have established robust monitoring programmes and management measures to protect the albacore stock e.g. by setting a tuna catch limit annually. However, neither of the fishery’s Regional Fisheries Management Organisations have yet adopted appropriate Harvest Control Rules to ensure the long-term health of the stocks, and this is a condition of certification. The fishery is on-track for achieving this and will pursue the adoption of HCRs over the coming years. In addition, the South Pacific fishery is required to implement a harvest strategy at the Western and Central Pacific Fisheries Commission’s (WCPFC) over the certification period.

Environment

Both the North and South Pacific albacore fisheries score highly because of their low impact on the environment: the fishery operates multiple measures to protect non-target and Endangered Threatened and Protected (ETP) species. For example, they use barbless hooks for quick and safe bycatch release (See picture below). As such, the amount of unwanted catch is low (<0.5%) and interactions between ETP species and the fishery are deemed ‘highly unlikely’.

Management

Throughout its initial certification, the fisheries have implemented both domestic and international management policies for albacore, with robust short- and long-term objectives. Going forward, the South Pacific fishery will need to demonstrate that the WCPFC decision-making processes respond to the state of the albacore stock through an appropriate harvest strategy (condition 3).



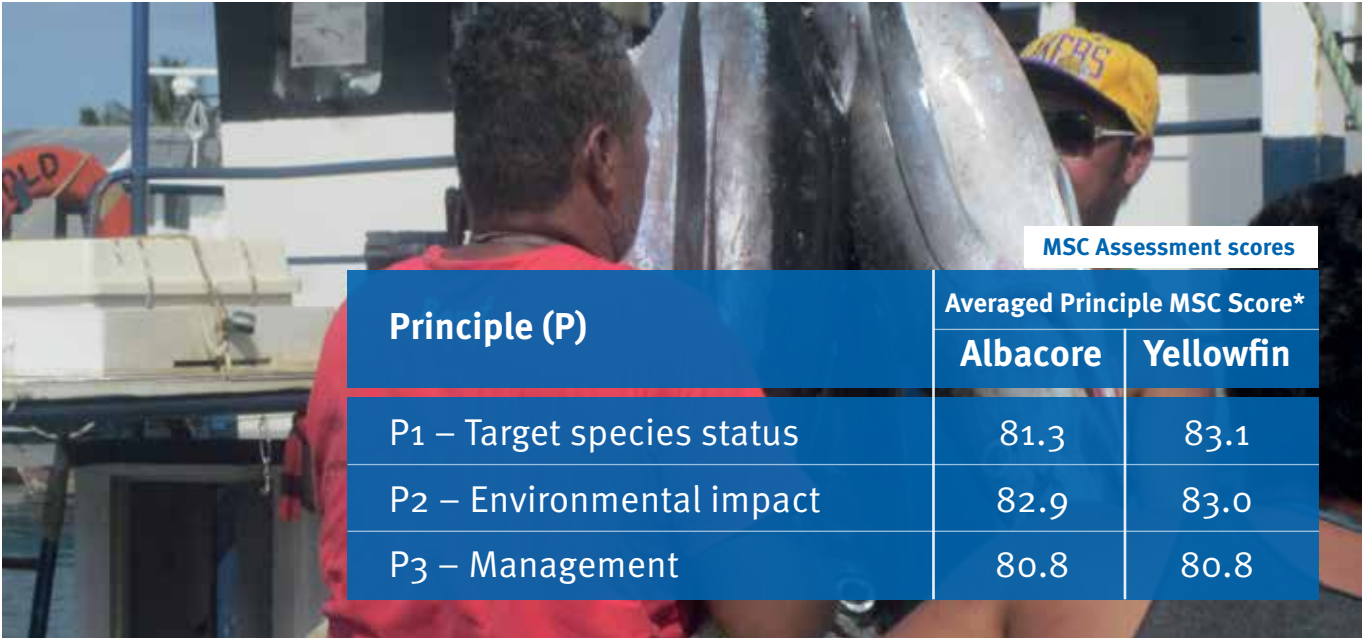
The hooks are specifically designed to reduce bycatch. Hooks are un-baited and barbless, enabling the quick and safe release of bycatch and vulnerable species.



CASE STUDY

COOK ISLANDS ALBACORE & YELLOWFIN LONGLINE

Gear type: Longline | Tonnage: 4,667 (2015) | First certified: 9th June 2015



Principle (P)	Averaged Principle MSC Score*	
	Albacore	Yellowfin
P1 – Target species status	81.3	83.1
P2 – Environmental impact	82.9	83.0
P3 – Management	80.8	80.8

Background

The Cook Islands case study showcases the journey of a fishery that went through a Fishery Improvement Project, to become an MSC certified fishery in 2015.

The Cook Island’s fishery first registered as a Fishery Improvement Project (FIP) on Fishery Progress in July 2013. It initially scored poorly on several attributes, particularly for its impact on the populations of the target stocks and of other species. The fishery worked hard over the following years to determine the health of the stocks, developed practices to prevent impacts on Endangered Threatened and Protected (ETP) species and implemented data collection programmes for non-target species.

The fishery was MSC certified in 2015 and since then has addressed several of the conditions of certification. They related to the fishery’s impact on the environment: longlines can have unintended

interactions with non-target species, catching or entangling seabirds and other marine life.

Due to the vast scale of the ocean around the Cook Islands, returning any tuna catch to port can be a time-consuming activity for fishermen. Because of this, designated vessels are used to transport tuna from fishing boats to ports, to increase the efficiency of fishing activities. This process is called transshipping, and while there are risks associated with transshipping (see page 34), the Cook Islands fishery have adopted measures to assure its customers that they adhere to legislation. These measures include port inspections, at-sea inspections and patrols at-sea.

Mitigation methods can be used to reduce unwanted catches: for example, ‘streamers’ can be used to scare away seabirds and fishing at night can minimise bird bycatch⁷⁴. Fishermen can also use specially designed hooks to ensure the safe release of unintended catch.

Selected conditions and improvements

The Cook Islands have implemented significant improvements to ensure long-term sustainability of their albacore and yellowfin fisheries.

Stock Status

The stock status of both species is considered healthy. However, cooperation is needed between the Western Central Pacific Fisheries Commission (WCPFC) member states to adopt thresholds to determine the health of the albacore stock (condition 1). An interim reference point has been agreed but still needs to be adopted. The fishery has made progress on developing well-defined Harvest Control Rules for both stocks (conditions 2, 3, 9 and 10), and is on target to adopt a harvest strategy through the WCPFC.

Environment

The Cook Islands’ fishery has introduced a monitoring programme for interactions with ETP species (condition 4) and shown that it does not hinder recovery of vulnerable sea turtle populations e.g. through implementing training programmes for fishermen to safely release turtles (condition 5). As such, both conditions (4 and 5) have been fulfilled.

Management

Going forward, the fishery needs to improve engagement with key stakeholders (condition 6) to develop its decision-making processes (condition 8).

* There are three Units of Assessment (UoA) in this fishery, comprising the 3 different clients. Since the scores for each of the principles are similar, they have been averaged here for ease of understanding. To see the specific scores for each UoA, please see Table 11 in Sieben, C., and Daxboeck, C. 2019. Year 3 Surveillance Report SZLC, CSFC & FZLC Cook Islands EEZ South Pacific Albacore and Yellowfin Longline Fishery. Control Union Pesca Ltd. Available for download from <https://fisheries.msc.org/en/fisheries/szlc-csfc-fzlc-cook-islands-eez-south-pacific-albacore-yellowfin-longline/@assessments>

CASE STUDY

ECHEBASTAR INDIAN OCEAN SKIPJACK

Gear type: Purse seine (both non-entangling drifting FAD and free-school)
Tonnage: 15,263 tonnes (2015) | **First certified:** 9th November 2018



MSC Assessment scores	
Principle	Skipjack
1: Stock status of target species	90.0
2: Environmental impact	80.7
3: Management	81.9

Background

The Echebatar fishery was the first drifting Fish Aggregating Device (dFAD) fishery to achieve MSC certification. It was certified on its second attempt following management improvements in the Indian Ocean including new FAD regulations.

The Echebatar fishery catches skipjack using purse seine nets that are set on free schools, and on non-entangling dFADs. Drifting FADs increase fishing efficiency, keeping prices low, but this can result in the bycatch of other species that are attracted to the FADs, making it harder for these fisheries to achieve MSC certification. However, the Echebatar certified fishery has substantially reduced catches of non-tuna species and of Endangered, Threatened and Protected species to 3% and 0.38% of catches, respectively⁷⁸.

The Echebatar fishery worked with the Indian Ocean Tuna Commission and Seychelles authorities to reduce bycatch by⁷⁹:

- reducing numbers of FADs over the last 3 years
- using only non-entangling FADs
- ensuring the rapid release of non-target species

The fishery has also added conveyor belts to three of its five vessels to rapidly release any unwanted catch directly back to the sea to increase survival rates. It also has 100% human observer coverage, providing high quality data about the fishery and ensuring compliance with regulations and certification requirements. These efforts demonstrate leadership within the tuna fishing industry.

Selected conditions and improvements

The Echebatar fishery has made major improvements and committed to deliver conditions of certification to ensure long-term sustainability³⁰.

Stock Status
The Echebatar fishery received top scores for stock status and their monitoring. The Indian Ocean skipjack stock is at a healthy level with Harvest Control Rules in place to ensure its future sustainability⁸⁰.

Environment
Before their first assessment, the fishery had implemented 100% observer coverage, providing a high level of assurance of compliance and data quality. Echebatar’s next challenge is to demonstrate that these data enable effective monitoring and management of the fishery’s impact on the ecosystem (conditions 1 and 5).

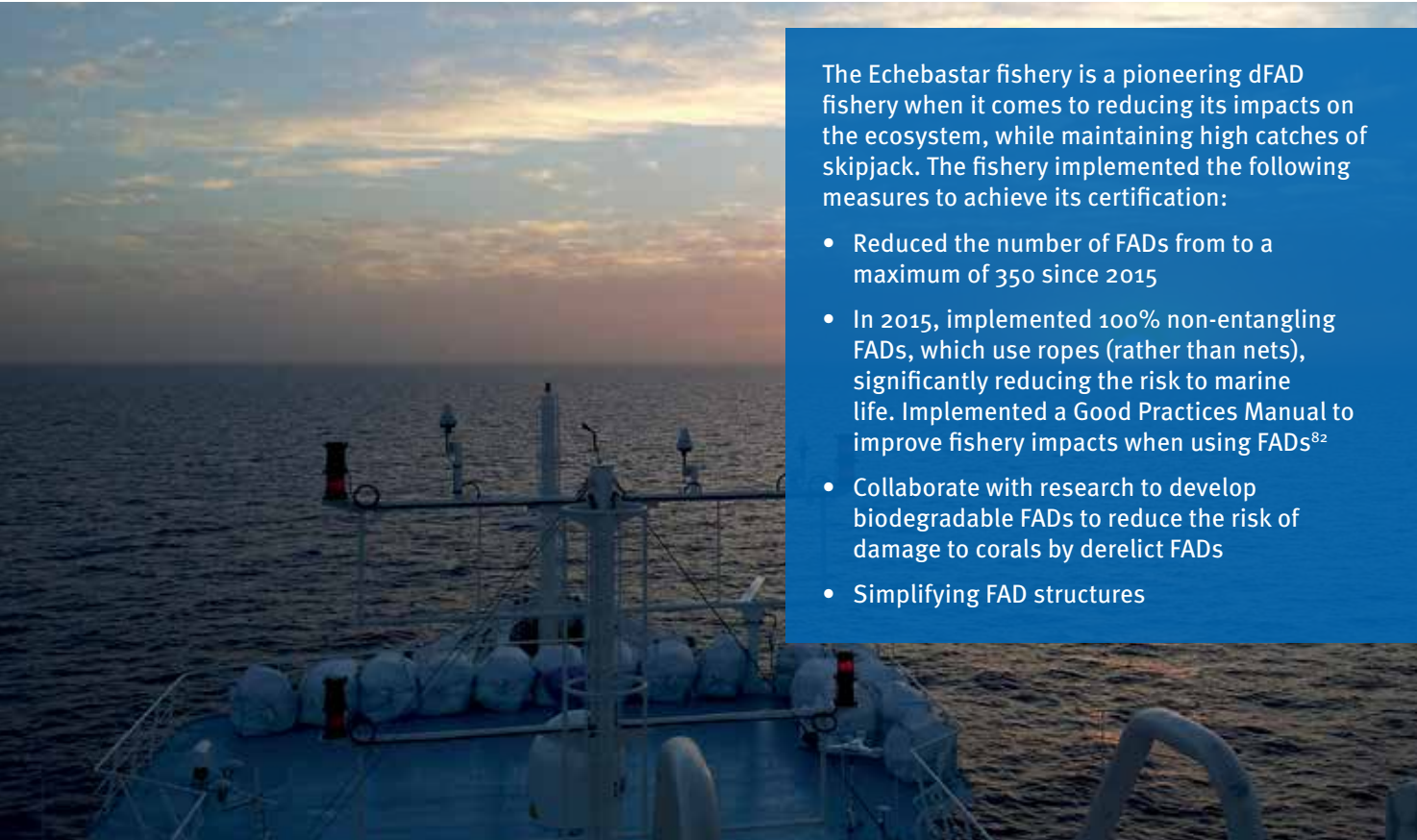
The Echebatar fishery has already reduced the impact of its FADs (see box-out). Due to concerns around lost or derelict FADs damaging the environment, Echebatar has committed to addressing further conditions:

- **Condition 1 and 2:** collecting further evidence about the impact of FADs on ETP species and on

vulnerable marine ecosystems, to sufficiently measure their impacts and demonstrate that dFADs are highly unlikely to reduce structure and function of coral reefs to a point where there would be serious or irreversible harm⁸¹;

- **Condition 3:** using this evidence to establish a precautionary strategy to ensure that it is highly unlikely that derelict dFADs could reduce structure and function of the coral reefs to a point where there would be serious or irreversible harm;
- **Condition 4:** collecting sufficient evidence to allow for identification of the main impacts of derelict dFADs on coral reefs, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.

Management
While information is available on the fishery’s performance and management actions, there is a lack of transparency for actions and decision-making for private deals in the fishery. Therefore, through condition 8, the Echebatar fishery must ensure that any management decisions including private agreements are appropriately explained and available for stakeholders.



The Echebatar fishery is a pioneering dFAD fishery when it comes to reducing its impacts on the ecosystem, while maintaining high catches of skipjack. The fishery implemented the following measures to achieve its certification:

- Reduced the number of FADs from to a maximum of 350 since 2015
- In 2015, implemented 100% non-entangling FADs, which use ropes (rather than nets), significantly reducing the risk to marine life. Implemented a Good Practices Manual to improve fishery impacts when using FADs⁸²
- Collaborate with research to develop biodegradable FADs to reduce the risk of damage to corals by derelict FADs
- Simplifying FAD structures

CASE STUDY

MALDIVIAN SKIPJACK

Gear type: Pole and line | **Tonnage:** 85,782 tonnes (2016)
First certified: 29th November 2012. **Re-certified:** 16th November 2017



MSC Assessment scores	
Principle	Skipjack
1: Stocks	90.0
2: Environmental impact	88.6
3: Management	85.4

Background

Fishing is central to the Maldivian culture, economy and heritage: the country celebrates its fishing heritage each year on 10th December, the National Fishermen’s Day. Tuna are the Maldives’ primary export and support 30,000 livelihoods⁸³.

Fishing began on masdhonis, wooden boats – powered by sails and oars – with an open deck to land the fish and carry livebait. Mechanisation of the fleet started in 1974, when a single masdhoni was equipped with a small diesel engine. By 1981, over 800 masdhonis were mechanised and accounted for 92% of the masdhoni tuna catch.

To go tuna fishing, around 10-18 fishermen⁸⁴ leave the port in Malé (or from any one of 200 or so inhabited islands) on an overnight trip. The fishermen use the centuries-old pole and line technique, which is believed to have been invented in the Maldives⁸⁵ and contributes more than 70% of the total tuna landings in the Maldives.

The fishery is highly selective, yielding very low levels of non-target bycatch (0.65%)^{86, 87}. However, the fishery increasingly required more bait per trip as pole and line vessels became larger and trips started to last longer than the traditional one day. To ensure that bait stocks remain at a healthy level the Maldives have successfully implemented a management plan to ensure bait species are monitored and sustainably managed.

The Maldives skipjack fishery was re-certified in 2017 after the Indian Ocean Tuna Commission (IOTC) implemented Harvest Control Rules (HCRs).

The certification previously covered both the skipjack and yellowfin fisheries, but the yellowfin certification was suspended in December 2017 after Indian Ocean populations fell below sustainable levels due to overexploitation by other gear types. Unlike skipjack there is also no HCR in place yet to protect them⁸⁸.

Selected conditions and improvements

The Maldives fishery has implemented major improvements to ensure long-term sustainability. The fishery fulfilled all the conditions required under its initial certification. Under its current certification, it only has one condition.

Stock Status
The skipjack population is healthy and an HCR is in place – there are no conditions.

Environment
The bait species used by pole and line fisheries need to be properly managed. In 2013, the Maldives fishery addressed conditions from its initial certification to ensure that baitfish fisheries are sustainable through a livebait management plan, which included: objectives on bait use; strengthening data capture - training the fishermen to report bait use; and carrying observers to corroborate fishermen’s logbook data.

Management
The Maldives’ initial certification was criticised by WWF in 2012 because they felt the IOTC did not have adequate HCRs to pass an MSC assessment. The fishery had committed to achieving well-defined HCRs at the IOTC. The Maldives, supported by other Indian Ocean coastal states and the International Pole and Line Foundation (IPNLF), led the efforts to ensure that a framework was put in place for improved management of skipjack stocks. This commitment, combined with intervention by the UK retail sector, encouraged the IOTC to adopt formal HCRs for skipjack in 2016. This was a significant success for both the Maldives fishery and the MSC programme. By adopting this measure, the IOTC protects the health of the Indian Ocean skipjack stock for the future.

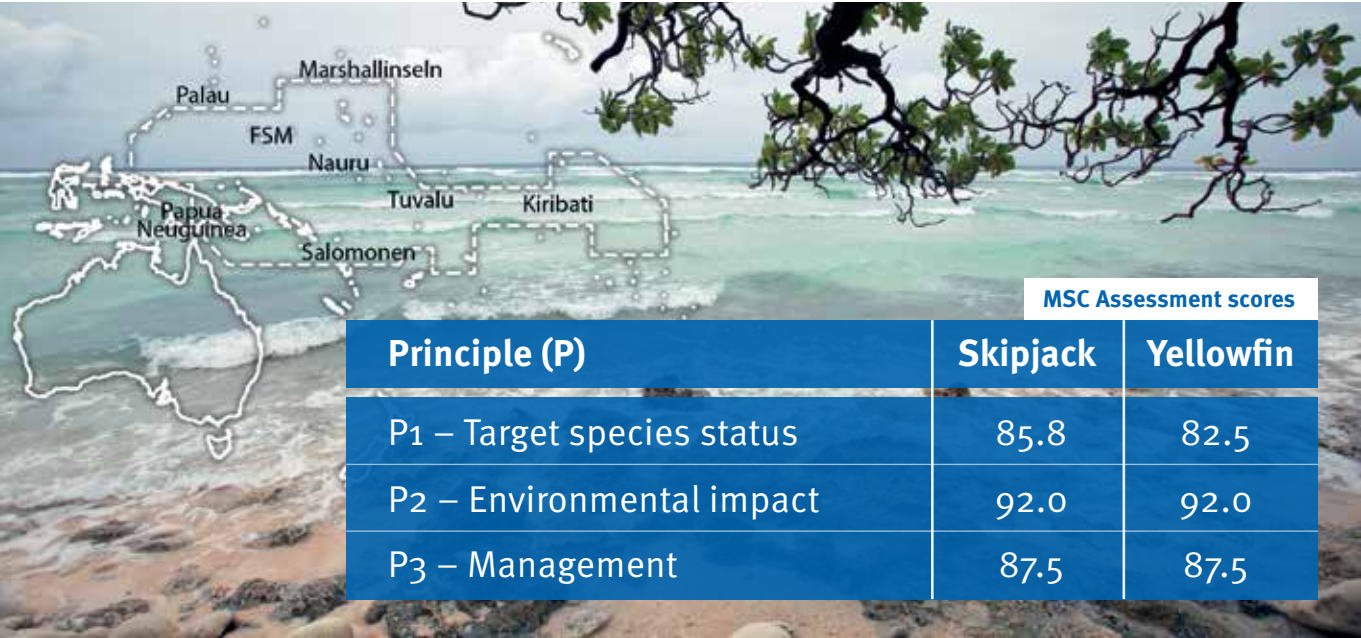
Logbooks are an important part of data collection, showing population trends for tuna, bycatch, bait and endangered species. Currently however, the use of logbooks is limited. Therefore, as part of their re-certification (condition 1), the Maldives fishery has committed to improving their logbook compliance to 100%⁸⁹.



CASE STUDY

PNA SKIPJACK AND YELLOWFIN

Gear type: Purse seine free-school | **Tonnage:** 790,670 tonnes (2015)
First certified: 21st December 2011; **re-certified:** 23rd March 2017



Background

The Parties to the Nauru Agreement (PNA) are a group of eight island countries in the Pacific (see map). They formed The Nauru Agreement in 1982 to harmonise fisheries management in their Exclusive Economic Zones. The first agreement mandated members to implement minimum fisheries management measures. This has developed over time. They now limit the number of days that vessels can fish and they have negotiated agreements with other nations including the United States.

PNA successfully restricted and reduced tuna exploitation, enabling the fishery to achieve MSC certification in 2011. It is the world's largest independently certified tuna supplier. A quarter of the world's tuna and half the global population of skipjack live in PNA waters⁹⁰. By taking collective

control of their waters, ensuring sustainable fisheries and using a geographic indicator through the Pacific platform, they have been able to sell their product with the MSC ecolabel, giving a significant economic boost to these small island states⁹¹.

Selected conditions and improvements

The PNA fishery has implemented significant improvements to ensure its long-term sustainability.

Stock Status

Both tuna stocks are healthy and the PNA has developed thresholds for further protection. The PNA will need to ensure its harvest strategy is responsive to both stocks' status (conditions 1 and 3) and will need to demonstrate that well-defined Harvest Control Rules are in place (conditions 2 and 4) through supporting Western and Central Pacific Fisheries Commission (WCPFC).

Environment

The PNA fishery has delivered on its goals to reduce unwanted bycatch and Endangered, Threatened and Protected (ETP) species catch: many PNA members banned shark finning (see box out) and setting purse seine nets on whale sharks in 2012⁹². The fishery adopted 100% observer coverage and a Good Practice Guide for handling ETP species . Going forward, the fishery will implement a strategy to ensure the fishery does not hinder the recovery of manta rays and devil rays (conditions 5 and 6). Additionally, the retention of Silky and Oceanic white tip sharks is prohibited.

Management

The PNA has implemented a fishery-specific management system with effective decision-making processes⁹⁴. The fishery scored especially well for its collaboration efforts at the WCPFC, and has no conditions related to management.

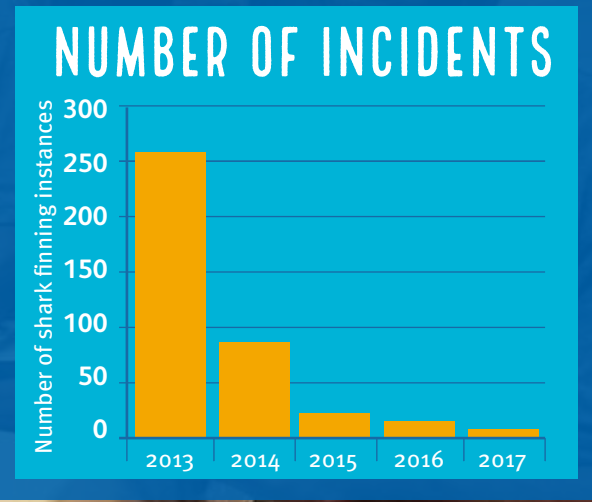
CHALLENGES

Compartmentalisation

Like other free-school purse seine fisheries, boats fish both on free-school tuna and FADs and fish within and outside the certified EEZ area. The MSC eligible fish (see graphic) are kept separate on-board and 100% observer coverage ensures they are not mixed. The fishery has implemented satellite tracking and batch coding (ensuring traceability)⁹⁵. Only the MSC eligible free-school tuna is MSC certified on landing. PNA uses the MSC premium as an economic incentive to compliment other measures to limit FAD sets and promote sustainability. This has been described as "the MSC theory of change in practice". Stakeholders have raised concerns about the sustainability of fishing activities which carry out both certified and uncertified fishing practices in a single trip. To address this, the MSC is conducting a consultation on the Unit of Assessment (see page 39).

Shark finning

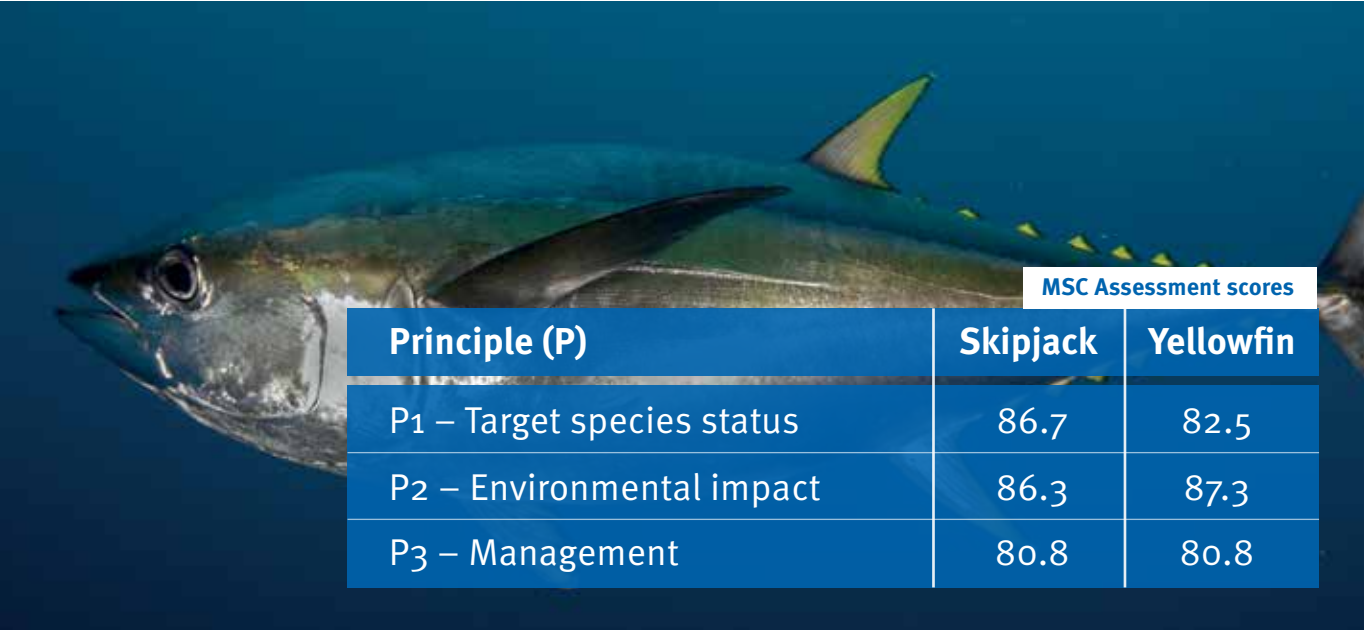
Shark finning (see page 32) has historically taken place in the PNA fishery. On average around 185 incidents were reported per year in 2012 and 2013⁹⁶. Since 2013, the MSC Fisheries Standard has required fisheries to demonstrate the likelihood that shark finning is not taking place at the point that they are first certified, or recertified. Ahead of this requirement, the PNA governments were already taking robust action to ban shark finning. The WCPFC also has conservation and management measures in place to prevent shark finning. Following these regulations, shark finning has been virtually eliminated from the fishery, with just 3 instances reported in 2017 (0.05% of the total catch)⁹⁷.



CASE STUDY

PT CITRARAJA AMPAT, SORONG, SKIPJACK AND YELLOWFIN

Gear type: Pole and line | Tonnage: 3190 tonnes (2016)
First certified: 22nd November 2018



Background

This was the first fishery in Indonesia to become MSC certified – a significant development since Indonesia is the world’s leading tuna producer and second largest seafood producer . The skipjack and yellowfin stocks in the Western Central Pacific Fisheries Commission (WCPFC) represent 60% of the world’s tuna catch⁹⁹. The fishery is also important for the local economy, employing 750 local fishermen¹⁰⁰.

PT Citraraja Ampat Canning (PT CRA) is a fish packing, processing and exporting company, based in Indonesia and founded in 1992. One of its main products is canned Indonesian tuna, which it sources from pole and line fisheries.

It works with local traditional pole and line fishermen in Sorong, who use the centuries-old tradition of pole and line fishing.

Tuna is integral to Indonesia’s fishing economy and illegal fishing costs Indonesia US\$4 billion in lost profits each year, harming the health of Indonesia’s seas and food security. Indonesia’s government has demonstrated a clear commitment to end illegal fishing by sinking illegal fishing boats. While successful in severely reducing the yields of illegal fleets, destroying vessels does not alone achieve sustainability. Crucially, sustainable fishing requires effective management (see Box out).

To catch the tuna, anchored Fish Aggregating Devices (aFADs) and live bait first attract tuna to the boat. Fishermen use poles and lines to catch the tuna one by one¹⁰¹. Tuna are then swung on board and immediately put into holds on ice. The fishery catches virtually no Endangered, Threatened or Protected species, and any unwanted catch is released safely¹⁰².

Selected conditions and improvements

The fishery has implemented a number of improvements to ensure long-term sustainability.

Stock Status
Over the next 4 years the fishery will work with the WCPFC to ensure that the harvest strategies are responsive to the state of both stocks (conditions 1 and 3) and well-defined Harvest Control Rules (HCRs) are implemented (conditions 2 and 4).

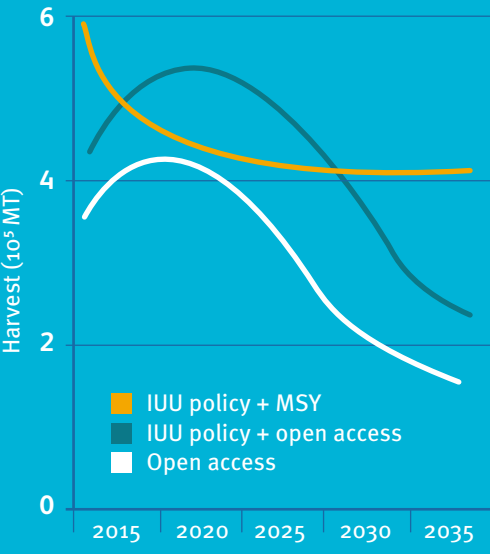
Environment
There are no conditions relating to environment: the fishery is very selective using barbless, unweighted and un-baited hooks; there is 100% observer coverage; and there is a National Plan to ensure no shark finning occurs.

Management
National and international laws are in place to protect the stocks. Indonesia cooperates with the WCPFC, however, both parties need to work together to implement HCRs, a harvest strategy (condition 5) and objectives (condition 6).

REDUCING ILLEGAL FISHING IS NOT ENOUGH

Legal fishing needs to be well-managed to ensure sustainability. Illegal fishing represents over 30% of the total catch of the WCPFC, costing Indonesia US\$4 billion in profits every year¹⁰³. To tackle illegal fishing, Indonesia’s Government seized and sank 488 (mostly foreign) illegal vessels between October 2014 and August 2018¹⁰⁴ , and as well as banning foreign fishing in their EEZ, leading to a 30% reduction in vessel numbers. However, Indonesia’s future skipjack yields do not just rely on reducing illegal fishing, but also on effective management of legal fishing. If illegal fishing is reduced, but management is open access, both the harvest and profits will decrease in the future. Conversely, with appropriate management, stable and improved future harvests and profits are projected. Therefore, regional cooperation and effective management in Indonesia’s tuna fisheries have an opportunity to play a crucial role in its future sustainable development¹⁰⁵.

ILLEGAL FISHING MODELLED AGAINST MANAGEMENT OPTIONS



CASE STUDY

SOLOMON ISLANDS SKIPJACK AND YELLOWFIN

Gear type: Purse seine (anchored FAD and free school) and pole and line
Tonnage: 35,001 tonnes (2016) | **First certified:** 12th July 2016

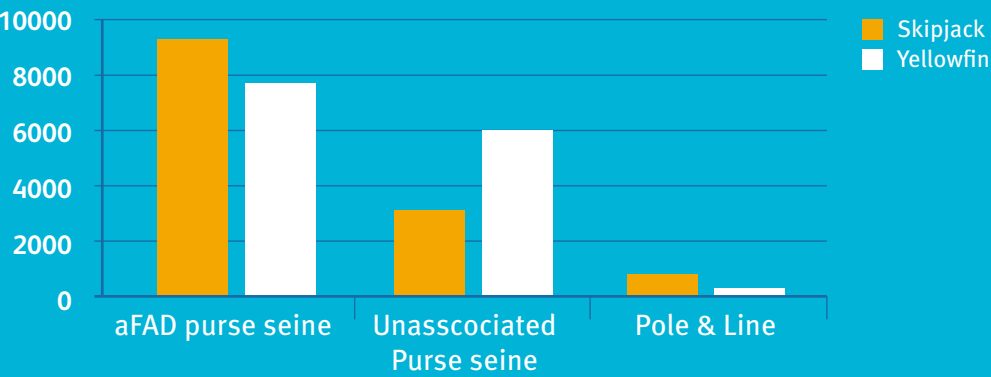


MSC Assessment scores

Principle (P)	Skipjack			Yellowfin		
	aFAD	free-school	P&L	aFAD	free-school	P&L
P1 – Target species status	86.9	86.9	86.9	84.4	84.4	84.4
P2 – Environmental impact	87.3	90.7	90.7	87.3	90.7	90.7
P3 – Management	85.8	85.8	85.8	85.8	85.8	85.8

© Tri Marine

CERTIFIED SOLOMON ISLANDS FISHERY CATCH DATA FOR SKIPJACK AND YELLOWFIN, 2015



Background

The Solomon Islands fishery catches skipjack and yellowfin in the Solomon Islands’ Exclusive Economic Zone and archipelagic waters.

The certified tuna fishery is extremely important to the economy, employing over 2,000 Solomon Islanders, and is one of the country’s largest private sector employers¹⁰⁶.

Pole and line fishing is very selective with minimal bycatch. Pole and line fishing uses baitfish, and the fishery monitors its bait use. However, most of the tuna from this area is caught using purse seines deployed on free-schools and anchored Fish Aggregating Device (FADs) (see pages 18-25). Unwanted bycatch is discouraged as the fishery retains everything they catch.

Selected conditions and improvements

The Solomon Islands’ fishery has adopted major improvements and addressed conditions to ensure long-term sustainability.

Stock Status

The Solomon Islands previously had no formal Harvest Control Rules (HCRs) in place for skipjack and yellowfin. Therefore, the fishery has been working with the Western Central Pacific Fisheries Commission (WCPFC) to develop harvest strategies and HCRs (conditions 1-4). Both fisheries are on target to achieve these conditions

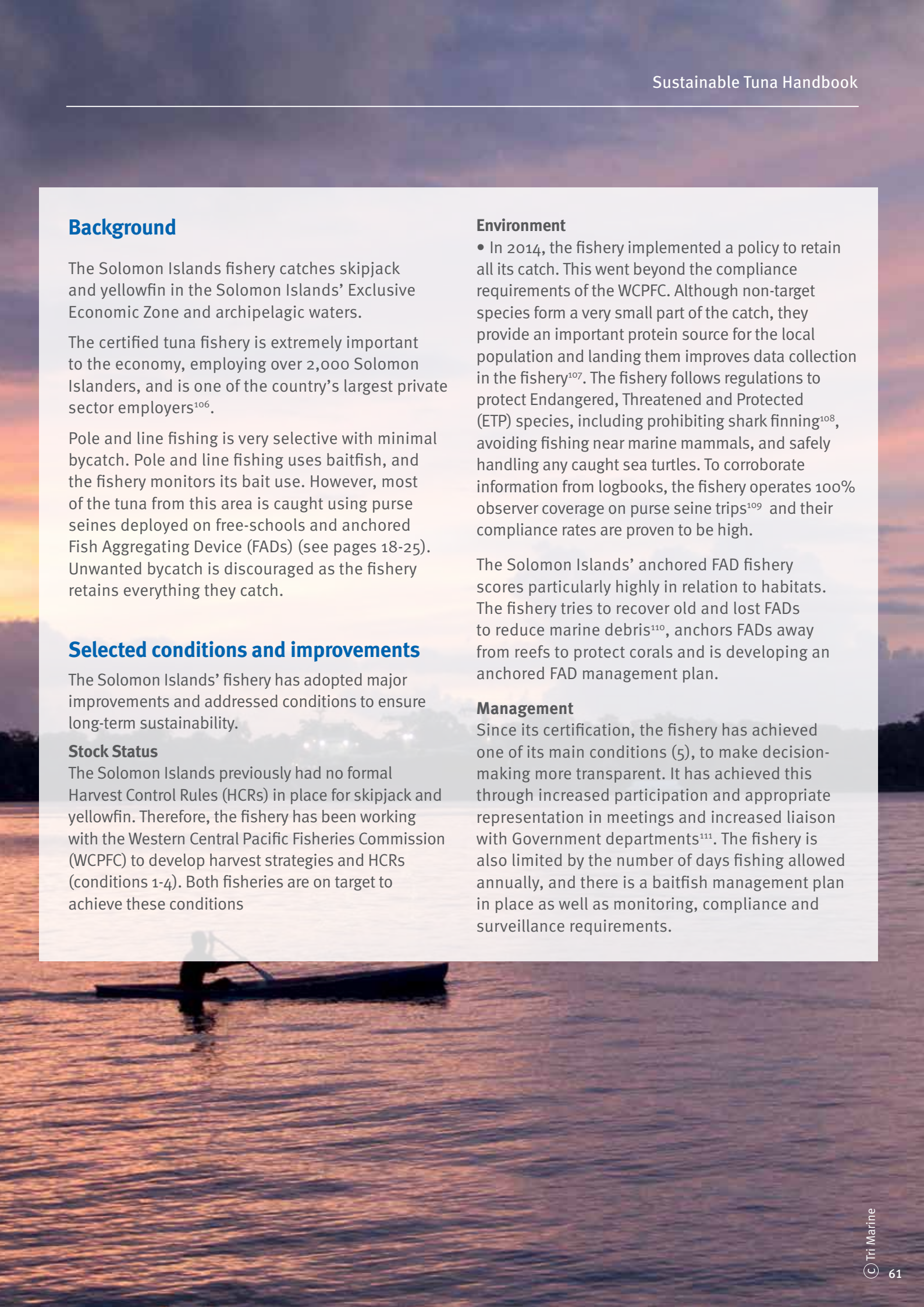
Environment

• In 2014, the fishery implemented a policy to retain all its catch. This went beyond the compliance requirements of the WCPFC. Although non-target species form a very small part of the catch, they provide an important protein source for the local population and landing them improves data collection in the fishery¹⁰⁷. The fishery follows regulations to protect Endangered, Threatened and Protected (ETP) species, including prohibiting shark finning¹⁰⁸, avoiding fishing near marine mammals, and safely handling any caught sea turtles. To corroborate information from logbooks, the fishery operates 100% observer coverage on purse seine trips¹⁰⁹ and their compliance rates are proven to be high.

The Solomon Islands’ anchored FAD fishery scores particularly highly in relation to habitats. The fishery tries to recover old and lost FADs to reduce marine debris¹¹⁰, anchors FADs away from reefs to protect corals and is developing an anchored FAD management plan.

Management

Since its certification, the fishery has achieved one of its main conditions (5), to make decision-making more transparent. It has achieved this through increased participation and appropriate representation in meetings and increased liaison with Government departments¹¹¹. The fishery is also limited by the number of days fishing allowed annually, and there is a baitfish management plan in place as well as monitoring, compliance and surveillance requirements.

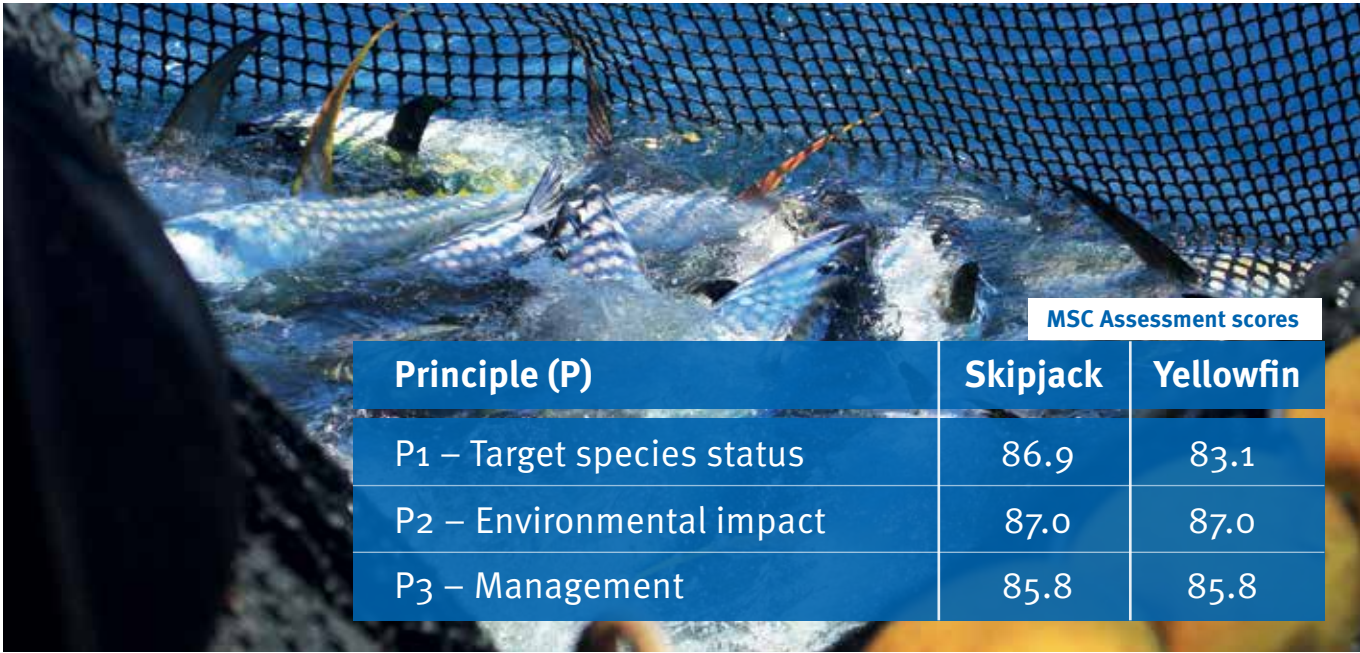


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CASE STUDY

TRI MARINE WESTERN & CENTRAL PACIFIC SKIPJACK AND YELLOWFIN

Gear type: Purse seine (free school)
Tonnage: 6,148 tonnes (2017) | **First certified:** 2nd June 2016



	MSC Assessment scores	
Principle (P)	Skipjack	Yellowfin
P1 – Target species status	86.9	83.1
P2 – Environmental impact	87.0	87.0
P3 – Management	85.8	85.8

Background

The Tri Marine fishery was first certified in 2016. The fishery covers a wide expanse of the Pacific Ocean, extending beyond the waters of the Parties to the Nauru Agreement area to include the waters of the United States’ territorial waters, several Pacific Islands Forum Fisheries Agency member countries, and the high seas, within the Convention Area of the Western Central Pacific Fisheries Commission (WCPFC) RFMO.

The certified part of the fishery targets free-swimming schools of mature tuna, which helps to reduce the incidental bycatch of non-target species. Skipjack and yellowfin comprise almost 100% of the total catch so there is virtually no unwanted bycatch¹¹².

Selected conditions and improvements

The Tri Marine fishery has implemented major improvements and addressed conditions, to ensure long-term sustainability.

Stock Status
The WCPFC has been slow to implement Harvest Control Rules for both stocks (conditions 1-4) but has committed to implement these over the coming years¹¹³. However, the fishery, through the WCPFC, has developed reference points for skipjack and limits for the number of days that vessels can fish.

Environment
A key achievement is the introduction of 100% observer coverage in the fishery to provide assurance around shark finning claims. Observer



records have demonstrated that there have been zero shark finning incidents from 2013-2017. The efficacy of observer coverage is currently being tested by installing cameras on vessels. Shark finning is prohibited under United States legislation and the fishery complies with the Shark Conservation Act (requiring that any sharks are landed with fins naturally attached)¹¹⁴. By committing to all these measures, the fishery has successfully addressed condition 5 of its certification.

The fishery has implemented management measures to reduce the impact of Fish Aggregating Device (FADs) on the environment. The fleet complies with WCPO-mandated FAD closures (i.e. three-month closure in entire WCPO Convention Area, plus an additional two-month FAD closure in

the high seas). Non-entangling FAD designs have been employed and the fleet is in the process of testing biodegradable FADs. Concerns have been raised about compartmentalisation in this fishery. The ongoing consultation on compartmentalisation (see page 39) seeks to address these challenges.

Management
The Tri Marine fishery has developed transparent non-compliance procedures - including charges, penalties and enforcement decisions - to deal with fishing infringements. The working group on compliance reviews and recommends compliance measures in the fishery using data supplied through logbooks, licences, vessel monitoring systems and observer reports. By adopting these procedures, the fishery has addressed condition 6, ahead of schedule.

SUMMARY OF CONDITIONS

June 2019

	Performance Indicator	Cook Islands	PNA	Maldives	Echebatar	Sorong	Solomon	WFAO North Pacific	WFAO South Pacific
Stock Status	Reference points rebuilding								
	Harvest strategy								
	Harvest Control Rules and tools								
	Information and monitoring								
	Retained/Primary species management								
	Retained/Primary species information								
Environment	Bycatch/secondary species management								
	ETP species outcome								
	ETP species management								
	ETP species information								
	Habitats outcome								
	Habitats management								
	Habitats information								
Management	Ecosystem information								
	Legal and customary framework								
	Consultation, roles and responsibilities								
	Incentives for sustainable fishing								
	Fishery-specific objectives								
	Decision-making processes								
	Compliance and enforcement								

- Condition that the fishery is working towards
- Condition which has been addressed by the fishery

WHY SHOULD I CHOOSE MSC CERTIFIED TUNA?

- Buy with confidence:**
Traceability from ocean to plate, preventing illegal fishing and mislabelling.
- Assurance:**
Independent certification bodies regularly check the fishery against the MSC Standard, which is developed by experts and with international consultation.
- Safeguarding livelihoods:**
Tell the stories of people involved in fisheries; certified tuna supports livelihoods for the future.
- Protecting our Blue Planet:**
Certified fisheries support healthy ecosystems, with low levels of non-target catch.
- Recognising the importance of transparent, comprehensive FIPs:**
A global network of NGOs and tuna supply chain representatives driving tuna fisheries towards sustainability by taking a collaborative partnership approach helping lay the foundation for future MSC certified fisheries.
- Meeting global commitments:**
Certified fisheries support global food security, contributing to the UN Sustainable Development Goals.
- Fish for the future:**
Sustainability based on science; strong management and good governance helps to ensure supplies of tuna for the future.
- Being innovative:**
Research and innovation in sustainable fishing, driving improvements in global fishing.
- Availability:**
22% of the global tuna catch is MSC certified¹¹⁵.
- Drive change:**
More fisheries want to become sustainable. Support them in their journey.

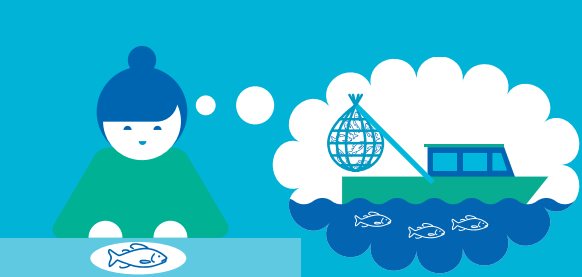
UK CONSUMER INSIGHTS



Over 25,000 consumers (18,909 seafood consumers) in 22 countries took part in the research, which ensured a statistically representative sample in each country.
1,315 British consumers (1,020 British seafood consumers) took part in the UK.

77%
of those surveyed in Britain said there is a need for brands and supermarkets to independently verify their claims about sustainability (up from 70% in 2016).

69%
of British seafood consumers say they'd like to hear more from companies about the sustainability of their seafood products.



83%
believe that seafood needs to be protected for future generations.



45%
of British seafood consumers recognise the blue MSC label, while **42%** of all British consumers do.

As the world's most recognised seafood labelling and certification programme, consumers are positive that the MSC, and the thousands of organisations committed to using the blue MSC label, are contributing to the health of the world's oceans.



86%
of Brits rate the MSC highly for helping to recognise and reward sustainable fishing



89%
of Brits agree that the MSC label helps to identify sustainable seafood quickly and easily



81%
of British seafood consumers agree that in order to save the ocean, we have to consume seafood only from sustainable sources.

Data from: GlobeScan. 2018. Demand for independent labelling of seafood is increasing globally. Available at: https://www.msc.org/docs/default-source/default-document-library/for-business/msc-consumer-survey-2018-results.pdf?sfvrsn=ba113ca2_4.

CONCLUSION

Tuna are among the most commercially valuable fish on the planet. To ensure their productive and stable future supply, tuna need to be responsibly managed and sustainably fished. This handbook comes at an important time. It aims to unpack the complex and diverse nature of the global tuna supply chain by providing information on issues related to tuna fishing such as gear types, fishing methods, species, sustainability, and environmental impact. Retailers and buyers can help support sustainable tuna fishing by ensuring they source from certified sustainable fisheries and by encouraging fisheries to make improvements to safeguard their sustainability.

Tuna fisheries can be associated with major supply chain risks such as overfishing, the bycatch of threatened and endangered species, shark finning and forced labour practices. Minimising these risks requires rigorous and regular checks on compliance at every point along the supply chain. As highlighted in this handbook, approaches, such as sourcing from or avoiding particular fishing methods, do not sufficiently reduce the full range of potential environmental impacts associated with tuna fishing, and importantly, does not necessarily prevent overfishing of stocks.

Fishery Improvement Projects (FIPs) are a vital step towards delivering sustainable tuna fisheries. Comprehensive FIPs that operate transparently and that are making measurable progress are a crucial tool to help fisheries work towards becoming sustainable and achieving MSC certification.

The best way to reduce risk and ensure tuna is sustainable is to source from MSC certified tuna

fisheries. The MSC has developed a universal seafood certification standard that is recognised as the most credible and robust standard for environmentally sustainable fisheries. It assures that the stocks are healthy, the impact on the ecosystem is minimised and the fishery is well-managed, driving improvements over time. Coupled with the Chain of Custody Standard for Traceability, this provides credible assurance for buyers and retailers that the tuna they are sourcing originates from a sustainable fishery.

MSC certified fisheries are helping to secure healthy tuna stocks around the world, which are essential for the health of the marine environment and global fishing economies. The MSC programme is also helping to meet the UN Sustainable Development Goals for global food security and equality including SDGs 2, 8, 12, 14 and 17.

With the 'Blue Planet effect', consumers' appetite for MSC certified seafood is increasing. Consumers believe that safeguarding our seas is vital for our future and over 81% of UK consumers agree that in order to save the oceans, shoppers should only consume seafood from sustainable sources¹¹⁷.

The MSC is helping satisfy this demand by delivering sustainable, healthy and tasty solutions to our partners and consumers. Over 20% of global tuna is now MSC certified and 86% of consumers who know the MSC brand, say they trust it¹¹⁸. By sourcing MSC certified tuna, you are not only investing in ensuring stable supplies of fish for the future, but also incentivising healthy oceans and coastal communities.

KEY ACTIONS

- For confidence in the sustainability and traceability of tuna, choose tuna from MSC certified fisheries.
- Retailers, NGOs and fishing companies need to work together to influence RFMOs to adopt the measures needed to maintain MSC certification. Contact your Fisheries Minister or RFMO delegation in the coastal state where you source your tuna, and encourage them to support the adoption of Harvest Control Rules at the RFMO meetings.
- Exercise caution over the use of single-issue claims such as FAD-free, particularly when they are not backed by traceability programmes.
- Stay up-to-date and take part in our consultation processes: we are continually developing our Standard to ensure that it tackles key issues in fisheries and continues to reflect widely accepted international best practice.
- Share your sustainability credentials with your customers, whether they are supermarkets or a consumer.
- Join the following groups that are supporting improvements in tuna fisheries: Global Tuna Alliance, ISSF, RFMO working groups or scientific committees, Seafood Business for Ocean Stewardship (SeaBOS), Global Dialogue on Seafood Traceability (GDST), ProActive Vessel Register.
- Ask your supplier questions about the fishery you are sourcing from, for example, regarding catches of non-target species in the fishery. There is always room for improvement to ensure sustainability within tuna fisheries.

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