OPAGAC Good Practices for Responsible Tuna Purse-Seining

The Good Practices below are aimed at improving the tuna purse-seining fleet's practices in every ocean across the world, including the Atlantic, Indian and Pacific Oceans. They reflect the practices implemented by the **OPAGAC-AGAC** fleet to make tuna purse-seining more selective and sustainable, for a responsible approach to fishing that minimises the impact of tuna purse-seining on the marine ecosystem and makes the management of sustainable tuna purse-seining possible.

This code was signed in 2012 and is reviewed annually with the aim of incorporating best practices based on the most recent advances in scientific studies. The agreement is mainly based on the following points:

1. The design and use of FADs (Fish Aggregating Devices) that do not entangle sensitive associated species (primarily turtles and sharks).
2. The development and application of releasing techniques that pose less risk to associated species and optimise those species' survival. This includes the use of materials and equipment provided expressly for releasing associated species.
3. The application of a FAD management system through the implementation of a FAD logbook.
4. 100% observer coverage, including support vessels.
5. Training for fishing skippers, crew, and scientific observers.
6. Scientific verification of activities related with Good Practices and continuous tracking by a steering committee.
7. Continous revision of the Code.

If in any of the points that are described below, the Regional Fisheries Management Organizations (RFMOs) have more demanding requirements than those described here, then RFMO criteria will be adopted in the area of competence to which they belong.

Likewise, the points reflected here conform to the agreed basic characteristics, understanding that these characteristics will represent a minimum standard to be used, without prejudice to the fact that each company can develop and apply measures that further minimize the impact of tuna purse seine fishing on non-target species and/or any other impact on the marine environment.

1. Non-entangling FAD Design

Work has been conducted since 2012 to arrive to a consensus on an alternative design of FADs that minimise impact on non-target species, especially turtles and sharks. The results set the foundations for gradually replacing the FADs used by the OPAGAC-AGAC fleet with new, non-entangling models that are in accordance with the following minimum standards:

1.A. NON-ENTANGLING COMPONENTS: OBLIGATORY MATERIALS AND CHARACTERISTICS

All the elements that make up the raft or floating part and the submerged part of the FAD must help prevent the entanglement of turtles and sharks. FADs may be made with these materials:

- Non-meshed (for example, canvas).
- Ropes.

By January 1, 2024, purse seiners and support vessels will only use and deploy FADs constructed with non-mesh material. Thus, from that date it is totally prohibited to use netting material for the construction of FADs (Figure 1).

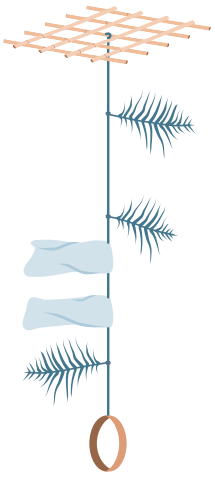

Figure 1. Example of non-entangling FAD.

1.B. BIODEGRADABLE FAD COMPONENTS: OBLIGATORY MATERIALS AND CHARACTERISTICS.

FADs will be deployed with biodegradable and non-entangling materials to evaluate the functionality of these materials and enable a gradual substitution of plastic materials by biodegradable alternatives for the floating and submerged part of the FADs.

GENERAL NOTES:

- If the Regional Fisheries Management Organizations (RFMOs) implement more demanding requirements than those described here, these criteria will be adopted in the area of competence of those RFMOs.
- In visits to FADs that are followed by a change of the instrumented buoy by a buoy owned by the fleet, entangling materials will be replaced by non-entangling materials following the criteria defined in the Code, whenever appropriate.
- If there are any FAD modifications by the crew, the deteriorated synthetic materials will be kept on board for their disposal in port.

2. Associated Species Release Manoeuvres

2.a. SHARKS

Intentional sets on sharks are prohibited.

While the number of sharks incidentally caught by purse seiners is not significant when compared to the number of individuals caught by other gears, it can be reduced by applying suitable handling and release protocols.

The intentional retention of any shark is forbidden, being this Code strict and inflexible regarding the practice of shark finning. All shark fins must be naturally attached to any unintentionally retained shark.

If any sharks are found when the catch is being hauled on board, and following RFMOs recommendations[1], they must be released from the deck or lower deck (provided that they can be handled with security), as quickly and carefully as possible, to avoid harming the animals. The necessary precautions must always be taken to maintain crew safety during the release process of dangerous animals. Crew must particularly avoid grabbing sharks only from the tail (unless it is with a suitable device) or the gills, to avoid injuring the animal and to protect the crew from dangerous reactions (Figure 2). Nooses or gaffs may not be used to release sharks. If sharks are found inside the purse seine net, the crew must attempt to get them out of the net using the brailer employed to bring the catch on board, even if a certain amount of target fish (2-3 tonnes) is lost, or else must use some other cradle-like device, to avoid the possibility of injury. Likewise, if sharks cannot be released immediately from deck, it is recommended to keep the animals wet, in the shade and if possible, breathing freely, by introducing a water hose into the mouth for example.

Yes **No**

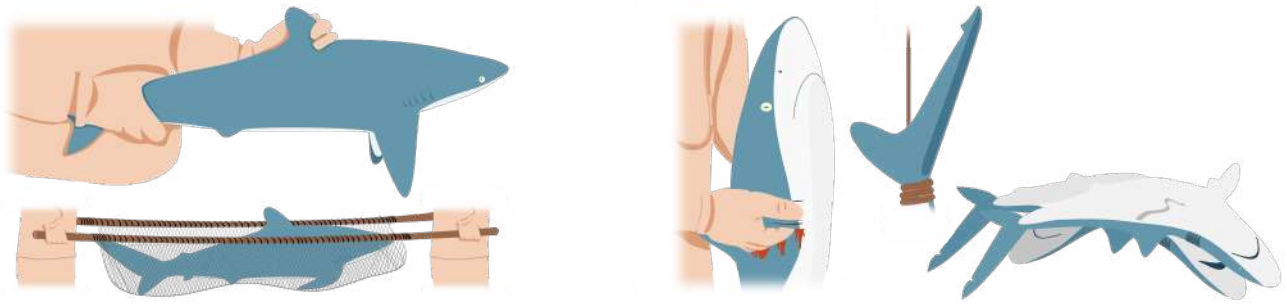

Figure 2. Correct release practices for sharks (left) and incorrect ones (right).

[1]**ICCAT:** Rec 04-10, Rec 07-06, Rec 09-07, Rec 10-07, Rec 10-08, Rec 11-08, Rec 15-06, Rec 18-06, Rec 21-09, Rec 22-11, Rec 23-10, Rec 23-11.
IOTC: Res 25/08, Res 25/09.
IATTC: C-11-10, C-23-08, C-24-05.
WCPFC: CMM 2024-05.

In interactions in which a high number of sharks is observed (>100 individuals), it is recommended to:

- Release them directly from the sack to the water using the brailer, without bringing them onboard.
- Do not set on target species schools < 10 tonnes.

It is mandatory for vessels to have a net carrier, a stretcher or a tarp on board and/or similar equipment alongside the brailer, so sharks found on deck can be handled more easily. The use of selective devices on deck that facilitate releases and reduce direct contact with the crew, such as shark ramps or hoppers, are recommended. Likewise, the installation of a waste chute in the lower deck is recommended, to facilitate and expedite the best release of the animals that could not be released from the upper deck and accidentally fell into the lower deck.

2.b. SEA TURTLES

Following the recommendations[2] of the RFMOs on sea turtles, despite the fact that turtle entanglements are unusual, crew must attempt by all means to release every turtle entangled in floating objects or encircled by the purse seine net.

If an entangled turtle is found in the net, the net hauling operation must be stopped immediately so that the animal does not accidentally go through the power-block. As soon as possible, the crew must release all turtles they find inside the net, trying to prevent any injury. If an animal is accidentally injured in any way during the operation, it must be kept on board in a wet, cool place, and checked that it has completely recovered before release. If the turtle is carrying any plastic items or pieces of net on it, or if it has any longline hooks embedded, the foreign items must be removed and/or disentangled, even if these materials do not originate from that vessel. Likewise, if crew find an entangled turtle when visiting a FAD, they must disentangle the turtle and release it using the same procedures. To handle a turtle, the crew must hold the animal by the shell but avoiding just the head area, for protection from catching their hands if the turtle should retract its head in (Figure 3). In addition, turning over sea turtles shall be avoided.

[2] **ICCAT:** Rec 22-12, Rec 23-13.
IOTC: Res 12/04.
IATTC: C-04-07, C-19-04.
WCPFC: CMM 2018-04.

Yes

No

Figure 3. Correct handling practices for sea turtles (left) and incorrect ones (right).

It is important to remember not to hold the animal by its flippers, because turtles' flippers are sensitive and could become dislocated. If a turtle appears to be irresponsive to stimuli or is inactive, it is recommended, if necessary, to place it in the resuscitation position to help it recover more easily. To place a turtle in the resuscitation position, the crew must lift the animal by its rear legs about 15 cm, with its head pointing downwards, and place something beneath it to maintain the turtle in this position (e.g., tyre, coiled rope). The crew must wet the turtle frequently and keep it out of direct sunlight. Thanks to these practices, the mortality rate of sea turtles in the OPAGAC-AGAC purse seine fleet is practically null.

2.c. MOBULIDS AND RAYS

Although very few skates and rays are involved in purse seine sets, very simple and safe protocols are in place for their release, in line with RFMO recommendations[3]. This procedure is based on trying to get the animal out of the purse seine either using the brailer employed to bring the catch on board, even if a certain amount of fish (2-3 tonnes) is lost, or using some cradle-like device or specific equipment, to minimise any possible injury.

Yes

No

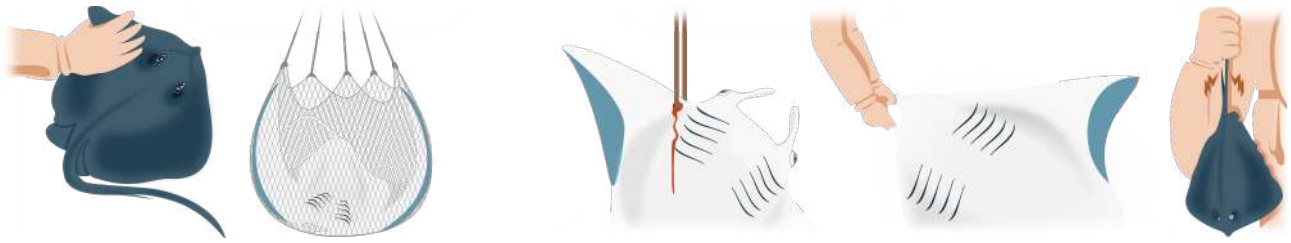

Figure 4. Correct release practices for mobulids and rays (left) and incorrect ones (right).

[3] **ICCAT:** Rec 24-12.
IOTC : Res 19/03.
IATTC: C-15-04.
WCPFC: CMM 2019-05.

If the animal is not detected or cannot be released before it is brought on board, it must be released from the deck. The recommendation is to have a carrier, tarps and/or similar equipment alongside the brailer for handling large individuals more easily when they are found on deck, and to release them with the aid of the crane (Figure 4). There are also methods such as using a cargo net or sorting grids with wide spaces, which are placed over the unloading hatch so the fish can be unloaded while the ray stays on top, which is then lifted for release with the crane. However, if mobulids or rays are released by hand, it is recommended that the crew avoids handling the animal by its tail, gills, or the cephalic lobes, to prevent injuries and dangerous reactions. It is particularly recommended to avoid handling the rear part of stingrays, as many have a poisonous spike at the end of their tail. It is therefore preferable to handle these animals from the front, grabbing them from the pectoral fins.

2.d. WHALE SHARKS AND LARGE CETACEANS

Intentional sets on whale sharks and large cetaceans are prohibited.

Most RFMOs (i.e., IOTC, IATTC, WCPFC)[4] have implemented measures prohibiting fishing practices that intentionally target setting on whale sharks. However, these animals may end up in the net unintentionally because they often swim well below the surface, making it difficult for fishers to detect them before setting the net. Although the whale shark release manoeuvre is somewhat complex, the crew must take all precautions to avoid injuring the animal. Intentional setting on cetaceans is forbidden by the EU[5], some RFMOs[6] and some bilateral agreements for intentional sets on these species' groups. The interaction with cetaceans, principally baleen whales, is rare and non-intentional. Mainly, these rare interactions occur with large cetaceans (e.g., humpback whale; *Megaptera novaeangliae*) which generally escape the net before its closure or by breaking the net (Figure 5).

Following the recommendations established with the objective of minimizing impacts on accidentally trapped individuals, and despite the inherent difficulty of the release manoeuvre, if a whale shark or a whale is found in the purse seine, the crew must take all actions to prevent damage to the animal. The crew should haul the net carefully to isolate the animal in a small area of the bunt. After this, the crew may take the following measures, depending on the sea conditions and the animal's behaviour. At all times crew safety must be prioritised.

[4] **ICCAT:** 23-12.
IOTC: Res. 25/08.
IATTC: C-19-06.
WCPFC: CMM-24-05.

[5] **EU:** EC - No 520/2007 (Art. 29)

[6] **ICCAT:** Rec 23-15.
IOTC: Res 23/06.
WCPFC: CMM-24-07.

A. When the animal is floating on the surface

A.1. The crew must gradually haul the net to bring the animal towards the closest cork line. The net must always be pulled in a direction from the animal's tail toward its head, along its belly, attempting to make the fish move towards the cork line.

A.2. If the animal is small (2 metres long or less), it may be released carefully using the brailer.

A.3. Partially sink the cork line to enable the animal to escape over the net.

A.4. Wait for the animal to freely swim out of the net.

A.5. The catch may be brought on board only after the animal has been released from the net.

Yes **No**

Figure 5. Correct release practices for whale sharks (left) and incorrect ones (right).

B. When the animal does not appear on the surface

The catch may be brought on board until the animal appears on the surface. At this point, the crew must cease brailing the tuna and start following the procedure in point A.

C. When the animal pushes the net with its head before the corks go down

Sometimes the animal will nudge or push the net before the crew can submerge the cork line, and it is difficult to get the animal to move backwards. In this case, the crew must work from the boat to submerge the cork line by maneuvering the net or with the aid of weights or poles to lower the cork line and enable the animal to get its head free above it.

D. When the animal is trapped in the bunt with its head facing sternward

In this case, the release manoeuvre to get the animal out over the cork line becomes very difficult, and the most effective manoeuvre known is the following: once the animal is in the bunt, the crew must locate the purse line closest to the animal's head and cut a couple of fathoms of net from where the purse line is attached to make a window through which the animal can escape, lowering the net a little to place the window underwater.

GENERAL NOTES:

- Regardless of the circumstances and measures adopted for the releasing the animal, the crew will verify that its behaviour is normal and will record the operation in the logbook. In the event that odd behaviour is observed, it must also be recorded in the logbook.
- Tests will be carried out with new release devices designed to facilitate safe handling and increase the survival of sharks, manta rays and rays.
- It is recommended to collaborate in sensitive species' tagging initiatives to assess post-release survival.

3. FAD Management System

OPAGAC-AGAC agrees to comply with the FAD management system and plan developed and implemented by the pertinent authorities. This includes the collection of certain information about the activities associated with FAD fishing (Figure 6).

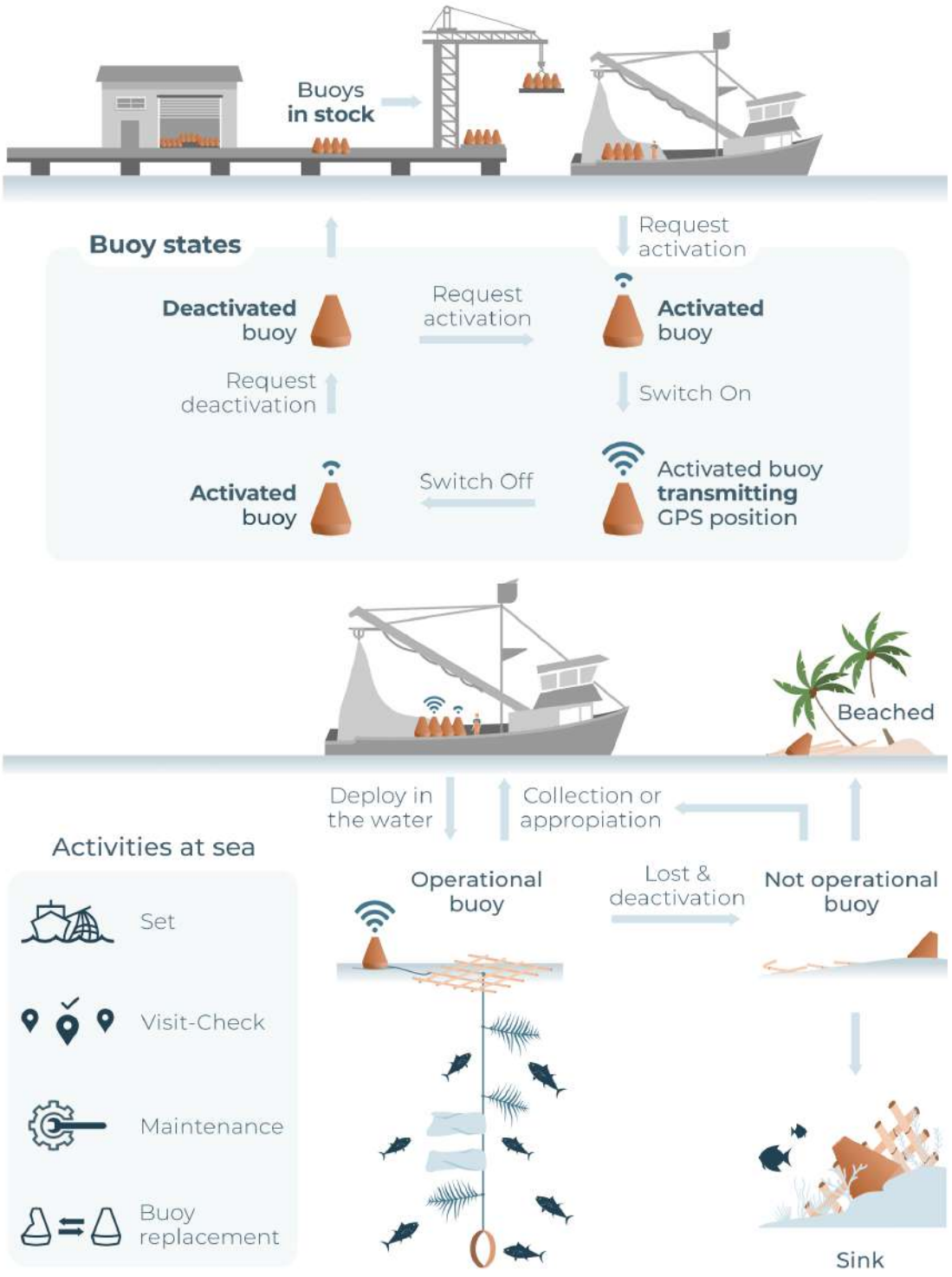

Figure 6. FAD management flow diagram.

4. 100% Observer coverage, including support vessels

The agreement considers it necessary and mandatory to have 100% coverage of fishing activities as of 1 January 2015 and extends the 100% coverage to supply vessels as of 1 January 2017. This coverage rate complies with the requirements of the WCPFC, IATTC and ICCAT and goes well beyond the current requirements set by the IOTC (5%). The information gathered during fishing trips to verify Good Practices compliance is recorded by specifically trained scientific observers, and more recently, also by electronic monitoring systems (EMS) validated and approved by scientific bodies (Figure 7). Either way, the purse seiner fleet must still maintain the minimum required human observer coverage required by each RMFO. The coverage for support vessels may be provided entirely by electronic observers due to the reduced space onboard.

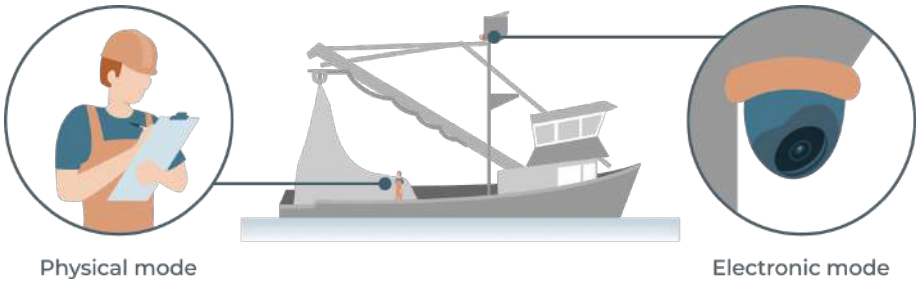

Figure 7. Observer coverage in tuna purse seiners and support vessels: human and electronic.

5. Training for fishing masters, crew, and scientific observers

The fishing crew (both officers and deck crew) and the scientific observers on board are all trained specifically on the items covered in this Code of Good Practices. They are especially taught on the manoeuvres for handling and releasing marine species and the correct construction and use of FADs. Similarly, the Code encourages the training of scientific observers to collect high-quality data, which also fosters the development of appropriate local and third-country observer capacity building. Training periods are also used as follow-ups to evaluate each programme and learn about any challenges that may arise.

6. Scientific verification of activities related with the Code of Good Practices and continuous follow-up by a steering committee

All the activities mentioned in the above points are verified by an independent scientific body that ensures the proper functioning of the programme. The scientific organisation works to gather and compile the data collected by all the different observer organisations involved and process that information so it can

be analysed on a per-vessel and per-trip basis. The results are used to make biannual compliance reports and provide specific advice when necessary. The results are utilized to continuously improve the Code of Good Practices, by specific advice and decisions agreed by a Steering Committee. This Committee meets every semester to examine how the Code is applied, find practical solutions for both punctual and structural problems and keep the programme updated, always following the recommendations and suggestions of the scientific advisors.

7. Continuous Revision of the Code

This text is the version revised and agreed by the signatories of the Agreement of February 20, 2012 of the Code of Good Practices and replaces the text and its subsequent revisions.

Date:	Version:	Description:
February-2012	Rev.0	Creation of the Code
February-2015	Rev.1	Review of the document for the introduction of detailed release strategies, characteristics of non-entangling FADs
February-2017	Rev.2	Introduction of the auxiliary vessels
February-2020	Rev.3	Introduction of release practices for large cetaceans and determined practices in the use of FADs throughout their life cycle.
May-2022	Rev.4	Review of the use of materials for the construction of FADs
July-2024	Rev.5 (Current)	Revision of FAD construction materials and release of sensible fauna

Sukarrieta, 8th October 2024,

Alfonso Beitia
President of OPAGAC