



North Pacific Fisheries Commission

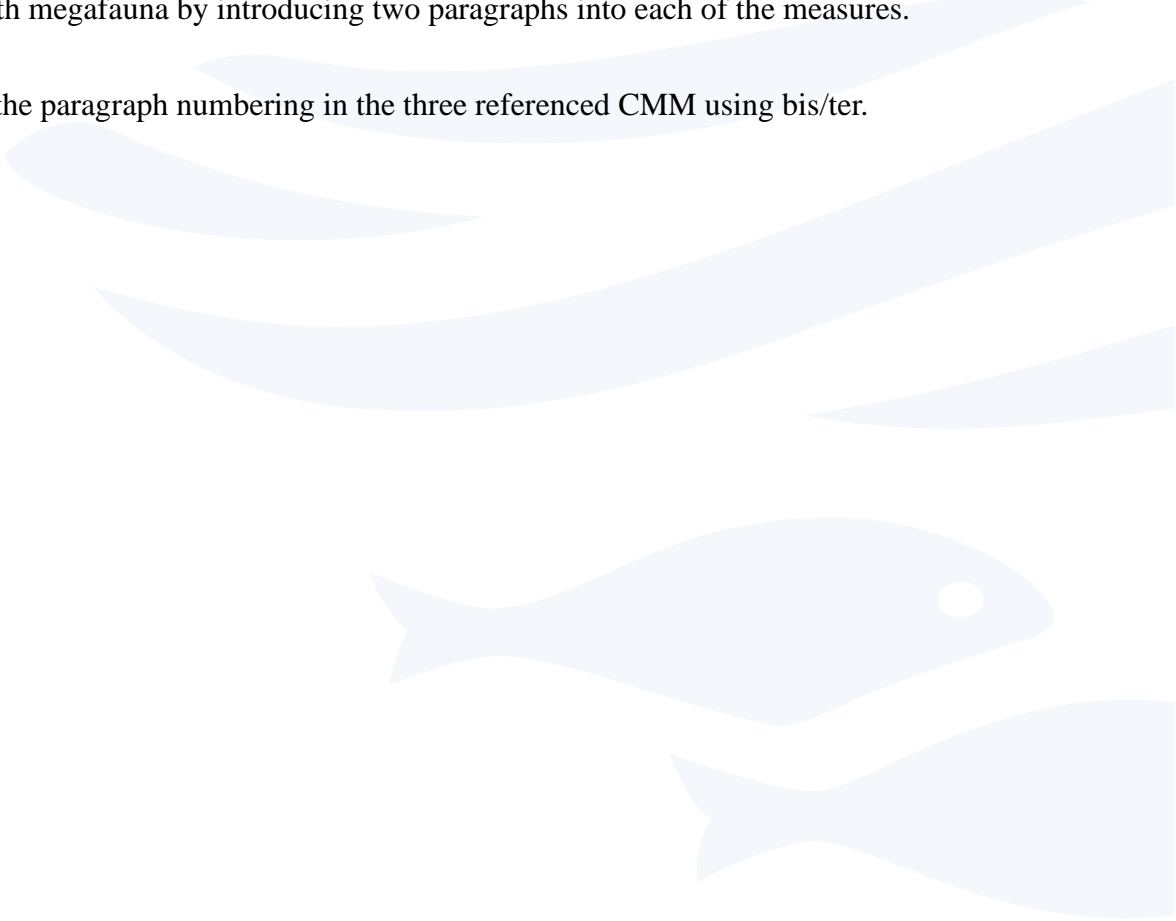
NPFC-2026-COM10-WP08 Rev.1

Submitted by Canada

**Introduction of Bycatch Exclusion Strategies in NPFC Pelagic Trawl Fisheries
(CMM 2025-07 for Chub Mackerel, 2025-08 for Pacific Saury and 2025-11 for
Japanese Sardine, Neon Flying Squid and Japanese Squid)**

Abstract: Canada is proposing a similar measure in each of the three pelagic CMMs to manage interactions with megafauna by introducing two paragraphs into each of the measures.

Rev.1 updates the paragraph numbering in the three referenced CMM using bis/ter.



Issue:

NPFC trawl fisheries targeting pelagic species are at risk of intercepting sharks, marine mammals, and other vulnerable, large non-target species (together referred to as “megafauna”). Despite very high mortality rates for these species, NPFC conservation and management measures (CMMs) do not currently require vessels using trawl gear to implement bycatch mitigation strategies or compel the use of excluder devices to reduce the incidental capture of these vulnerable species.

Since 2021, Canada’s monitoring, control, and surveillance activities have detected an increasing number of incidents where sharks, marine mammals, and other non-target species have been incidentally caught and harmed or killed when intercepted by trawl gear. Recalling the NPFC’s adoption of a shark protection measure in 2023, Canada is proposing to build on these efforts and introduce practices and gear modification requirements that would reduce the number of incidentally caught megafauna species.

Science and Research:

The capture of non-target megafauna like sharks and marine mammals has been recognized as a global threat to biodiversity. Megafauna refers to large marine organisms that typically occupy high trophic levels in oceans ecosystems. These species’ late-maturing, low fecundity biology makes their decline difficult to arrest and recovery has proven challenging. As noted in a 2005 study on the effects of fishing on long-lived marine organisms, “because fisheries bycatch mortality often eliminates late-stage individuals, it is especially important to minimize this threat to reverse population declines” (Heppell et al. 2005). It has been found that global bycatch is a major contributor to shark population declines, contributing to over one-third of threatened elasmobranch species facing the risk of extinction (Dulvy et al., 2021 and Worm et al., 2024).

Considerable research has been completed on the study of bycatch reduction strategies in trawl fisheries. In addition to a reduction in fishing effort and the establishment of time-area closures, the use of mechanical excluder devices and sensory deterrents are well-documented methods of reducing non-target species interception while minimizing impacts to commercial catch and retention rates. In a study from 2009, it was recognized that “reduction of global fisheries bycatch through changes in fishing gear and practices has the highest potential to reverse declines of marine megafauna populations” (Zydelis et al. 2009).

Current Status:

The NPFC CMMs managing pelagic species (chub mackerel, Japanese sardine, and Pacific saury) do not impose gear restrictions or require bycatch reduction strategies to minimize the impact of trawl fisheries on

non-target species. In many cases, where bycatch species survive capture, vessel design prevents safe release practices from being exercised. Preventing capture is the most effective method of reducing mortality for sharks, marine mammals, and other non-target species in the trawl fishery.

Monitoring, control, and surveillance activities conducted by Canada indicate a significant trawl fleet is active in the Convention Area and the limited number of inspections conducted to date demonstrates a need for the NPFC to address the issue of incidental capture of sharks and marine mammals.

Recommendations:

Canada is proposing amendments to the CMMs on chub mackerel, Pacific saury, and Japanese sardine to:

- 1) Implement gear modification requirements that include the mandatory use of bycatch excluder devices and the voluntary implementation of other industry approved deterrents to reduce the number of incidentally caught shark, marine mammals, and other non-target marine species.
- 2) Require mandatory reporting on all incidental megafauna bycatch and interactions including species caught, number of individuals caught per tow or set, state of animal (mortality) and whether release was attempted.

(Entered into forced 1 June 2025)

CONSERVATION AND MANAGEMENT MEASURE FOR CHUB MACKEREL

The North Pacific Fisheries Commission (NPFC),

Recognizing that outcomes of the small ad hoc workshop for the scientific analysis of chub mackerel stock were presented to the Scientific Committee (SC) in April 2017 and the SC recommended to establish the Technical Working Group on Chub Mackerel Stock Assessment (TWG CMSA);

Noting that CMM 2016-07 states the SC will complete the stock assessment of chub mackerel as soon as practicable, even if such assessment is provisional, and provide advice and recommendations to the Commission in accordance with Article 10, paragraph 4(b) of the Convention;

Reaffirming the General Principles provided in Article 3 of the Convention, in particular, paragraph (h) stipulating that any expansion of fishing effort does not proceed without prior assessment of the impacts of those fishing activities on the long-term sustainability of fisheries resources;

Noting paragraph 1(a) of Article 7 of the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks of 4 December 1995 (hereinafter, “1995 Agreement”), stipulating that the relevant coastal States and the States whose nationals fish for straddling fish stocks in the adjacent high seas area shall seek to agree upon the measures necessary for the conservation of these stocks in the adjacent high seas area;

Recognizing paragraph 2(a) of Article 7 of the 1995 Agreement stipulating that the conservation and management measures adopted and applied in accordance with article 61 of the United Nations Convention on the Law of the Sea in respect of the same stocks by coastal States within areas under national jurisdiction and ensure that measures established in respect of such stocks for the high seas do not undermine the effectiveness of such measures;

Reaffirming paragraph (i) of Article 3 of the Convention, stipulating in accordance with Article 7 of the 1995 Agreement, that conservation and management measures established for straddling fish stocks on the high seas and those adopted for areas under national jurisdiction are compatible in order to ensure conservation and management of these fisheries resources in their entirety;

Recalling that concern was expressed on an adverse impact on the stock of chub mackerel given the rapid increase in vessels that appear to be fishing for chub mackerel in the Convention Area, as articulated in paragraphs 9 and 10 of Report of the 1st Meeting of the Technical and Compliance Committee;

Noting that the NPFC Catch/Effort statistics shows a significant fall in chub mackerel catch in 2022, 2023 and 2024 from those in previous years;

Recognizing that the 9th meeting of the Scientific Committee in December 2024 recommended the current fishing mortality (average 2020-2022) leads to further constant decline of SSB and it is necessary to reduce the current fishing mortality, based on the stock assessment of chub mackerel conducted by the Technical Working Group on Chub Mackerel Stock Assessment and the advice of the Scientific Committee of NPFC.

Adopts the following conservation and management measure in accordance with Article 7 of the Convention:

1. Members of the Commission and Cooperating non-Contracting Parties (CNCs) with substantial harvest of chub mackerel in the Convention Area shall refrain from expansion, in the Convention Area, of the number of fishing vessels entitled to fly their flags and authorized to fish for chub mackerel from the historical existing level.
2. Members of the Commission and CNCs without substantial harvest of chub mackerel in the Convention Area are encouraged to refrain from expansion, in the Convention Area, of the number of fishing vessels entitled to fly their flags and authorized to fish for chub mackerel from the historical existing level.
3. As a provisional measure, Members shall take necessary measures to ensure that the fishing activities for chub mackerel in the Convention Area shall be undertaken in accordance with the fishing season defined in paragraph 17 and the following provisions:
 - (a) The annual total allowable catch of chub mackerel in the Convention Area, excluding the amount in paragraph 11, shall be set at 66,740 tonnes for the 2025 fishing season.
 - (b) Of this annual total allowable catch, the catch for trawlers shall not exceed 7,940 tonnes for the 2025 fishing season.
 - (c) Of this annual total allowable catch, the catch for purse seiners shall not exceed 58,800 tonnes for the 2025 fishing season.

(d) China shall not authorize more than 3 trawlers to conduct fishing operations at the same time.

(e) The EU shall not authorize more than 1 trawler to conduct fishing operations at the same time.

4. Members of the Commission participating in chub mackerel fisheries in areas under national jurisdiction adjacent to the Convention Area are requested to take compatible measures in paragraph 1 and 3. Such Members¹ may divert part of their catch limit for areas under their jurisdiction to their own catch of chub mackerel in the Convention Area by vessels entitled to fly their flags and authorized to fish for chub mackerel, provided that: (i) the Member has established a catch limit for chub mackerel in its jurisdiction; (ii) the Member has notified the Commission of the catch limit; and (iii) the total catch of the Member in the Convention Area and the areas under their jurisdiction adjacent to the Convention Area will not exceed the Member's total catch limit for its jurisdiction.
5. Members of the Commission and CNCPs shall prohibit fishing vessels over 10,000 Gross Tonnage that are flying their flag and authorized to fish for chub mackerel, from fishing in the Convention Area.

5 bis. To minimize the impact of fishing activities on non-target species, Members shall ensure that all trawl-gearred fishing vessels flying their flag use a bycatch excluder device as prescribed in Annex I, while conducting fishing operations in the Convention Area. In addition, Members may include the use of other bycatch exclusion strategies that have been proven to reduce incidental bycatch of non-target species, also described in Annex I. Bycatch excluder devices shall be made available for inspection in a timely manner, upon the request of an inspector during high seas boarding and inspections activities.

5 ter. Members shall ensure that all fishing vessels flying their flag maintain a record of incidentally caught sharks, rays, marine mammals, turtles, and other mega-fauna (defined as large marine organisms that typically occupy high trophic levels in oceans ecosystems) by genus and species where known, quantity per set or tow, and if released, whether the specimen was released live.

6. Members of the Commission and CNCPs shall ensure that fishing vessels flying their flag that fish for chub mackerel in the Convention Area record their catches, including incidental catches of other NPFC species, and any discards and report them to the relevant flag state authorities in accordance with their national data recording and reporting requirements.

¹ Paragraph 4 applies to Russia and Japan.

7. To comply with the provisional measure stipulated in paragraph 3, Members of the Commission shall report to the Executive Secretary, in electronic format, monthly catches of chub mackerel in the Convention Area by fishing vessels flying their flags, as follows:
 - a) For trawlers: By the 10th of the next month, until the total accumulated catch by Members in a fishing season reaches 60% of the catch limit set out in paragraph 3 (b). After the total accumulated catch by Members in a fishing season reaches 60% of the annual catch limit set out in paragraph 3 (b), Members of the Commission shall report to the Executive Secretary, in electronic format, weekly catches of chub mackerel in the Convention Area by trawlers flying their flags, by Wednesday of the next week.
 - b) For purse seiners: By the 10th of the next month, until the total accumulated catch by Members in a fishing season reaches 60% of the catch limit set out in paragraph 3 (c). After the total accumulated catch by Members in a fishing season reaches 60% of the annual catch limit set out in paragraph 3 (c), Members of the Commission shall report to the Executive Secretary, in electronic format, weekly catches of chub mackerel in the Convention Area by purse seiners flying their flags, by Wednesday of the next week.
8. The Executive Secretary shall make publicly available the compiled catch of chub mackerel in the Convention Area on the Commission's website, as well as each Member's catch of chub mackerel in the Convention Area, on the Member's page of Commission website without delay.
9. In the event that the total accumulated catch by Members in a fishing season reaches 95% of the annual catch limit set out in paragraph 3 (b) or (c), the Executive Secretary shall notify Members of that fact without delay, and each Member participating in the chub mackerel fishery shall close the fishery for its flagged vessels within 2 days from the above notification by the Secretariat until the end of the fishing season.
10. Development of new fishing activity for the chub mackerel fishery in the Convention Area by Members of the Commission without documented historical catch for chub mackerel in the Convention Area shall be determined in accordance with relevant provisions, including but not limited to, as appropriate, Article 3, paragraph (h) and Article 7, subparagraphs 1(g) and (h) of the Convention.
11. In accordance with paragraph 10, and in addition to the fishing opportunities under paragraph 3 (b), once the annual total allowable catch under 3 (b) has been exhausted the EU shall be entitled to fish an additional 4,260 tonnes of chub mackerel for 2025 fishing season, without prejudice to future discussions on chub mackerel allocation in the Convention Area. In case the EU does not harvest any chub mackerel in the Convention Area in the 2024 fishing season, 1,740 tons shall be carried over to the catch limit in this paragraph.
12. Members of the Commission and CNCPs shall ensure that fishing vessels flying their flag

operating in the Convention Area to fish chub mackerel are to be equipped with an operational vessel monitoring system that is activated at all times.

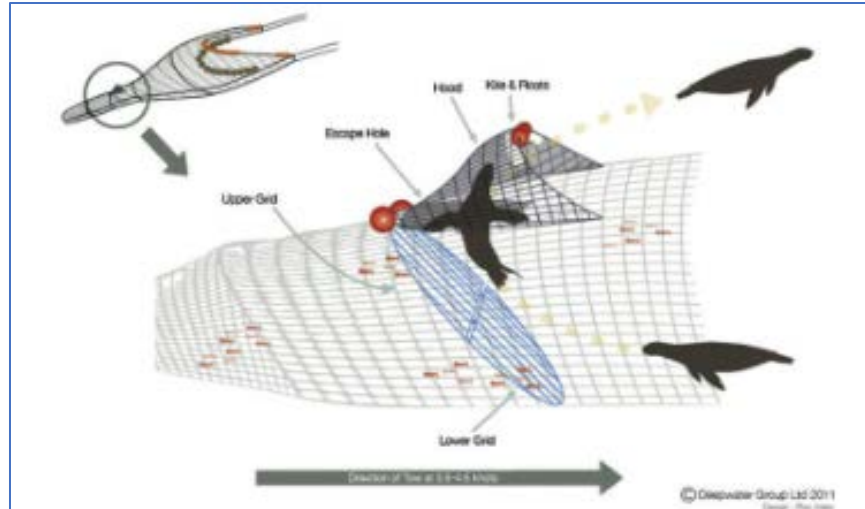
13. Members of the Commission and CNCPs shall provide their data on chub mackerel separated by the Convention Area and the areas under national jurisdiction adjacent to the Convention Area in accordance with the data requirements adopted by the Commission in the Annual Report every year. The Commission shall review such information at the annual meeting every year.
14. Members of the Commission and CNCPs shall cooperate to take necessary measures including sharing information, in order to accurately understand the situation and eliminate IUU fishing for chub mackerel.
15. After the chub mackerel stock assessment has been completed, the provisions in Paragraph 1, 3 and 11 shall be reviewed by the Commission and those provisions shall not be a precedent to hinder those Members who are not harvesting substantial amounts of chub mackerel in the Convention Area to develop their own chub mackerel fisheries in the Convention Area, noting the Commission shall regularly review chub mackerel harvests in the Convention Area by all Members.
16. This management measure enters into force on 1 June 2025 (aligned with the start of the fishing season for chub mackerel). The Commission shall review and revise, as appropriate, this CMM based on the advice and recommendations from the SC, but no later than at the 10th Commission meeting.
17. For the purpose of this measure the 'fishing season' starts on 1 June and ends on 31 May.
18. This CMM is an amendment of the NPFC CMM 2024-07.

Annex I

Bycatch Exclusion Strategies, Devices, and Methods

- 1. Bycatch Excluder Device Specifications: the use of a bycatch excluder device is mandatory for all trawl-gear fishing vessels. The excluder device shall be constructed of durable materials and must meet the criteria listed below:**
 - a. The frame and bars (grid) shall be rigid and smooth, composed of steel or aluminum with the grid oriented at a 30-45° angle relative to the net's horizontal plane.
 - b. The grid shall be large enough to fill the entire inner circumference of the net and secured to the entire inner surface of the net. It shall be placed within the neck of the trawl and forward of the codend portion of the net. This grid may be affixed with floatation to support regular, unimpeded vessel operations.
 - c. The grid bars shall be spaced with a maximum of 20cm between each bar.
 - d. The exit hole shall be positioned on the top of the net, above the grid, to allow for escape from the top of the net.
 - e. The exit hole shall be a uniformly shaped opening positioned above the grid to allow unimpeded passage of non-target species. The dimensions of this exit hole shall be a minimum of 70 cm wide and 1.0 m long.
 - f. The exit hole area may be covered by an exit hole hood or single mesh panel that can move freely to allow non-target species to escape.

Figure 1. representation of a bycatch excluder device for reference only (source: Hamilton and Baker, 2019). Members will be responsible for implementing their own excluder devices to meet the objective of reducing incidental bycatch of mega-fauna and non-target species, in line with the specifications noted in a through f.



2. Other Bycatch Exclusion Strategies to Reduce Incidental Bycatch:

- a) Acoustic Deterrent Devices: These sound emitting electronic devices create an aversive response to discourage sharks from entering specific areas. When deployed with trawl gear, these devices have been found to reduce the capture of sharks and marine mammals.
- b) Olfactory Deterrents: Semio-chemical shark deterrents using ammonia-based compounds that illicit aversive or repellent response.
- c) Offal discard management: Avoid the release of offal while actively fishing or towing trawl gear.
- d) Light Deterrents: Light emitting devices in various wavelengths including ultra-violet light have been used as an effective method to reduce shark, marine mammal, turtle, and other incidental bycatch in trawl fisheries.

CMM 2025-08

(Entered into force 1 May 2025)

CONSERVATION AND MANAGEMENT MEASURE FOR PACIFIC SAURY

The North Pacific Fisheries Commission (NPFC),

Reaffirming the General Principles, Article 3 of the Convention, in particular, paragraph (b) stipulating that measures are adopted, based on the best scientific information available, to ensure that fisheries resources are maintained at or restored to levels capable of producing maximum sustainable yield, and paragraph (f) stipulating that preventing or eliminating overfishing and excess fishing capacity and ensuring that levels of fishing effort or harvest levels are based on the best scientific information available and do not exceed those commensurate with the sustainable use of the fisheries resources;

Gravely concerned that, according to the latest stock assessment provided by the 9th meeting of the Scientific Committee (SC9) in December 2024, stock biomass of Pacific saury remains at low levels in recent years,

Recognizing that SC8 recommended that the Commission consider the advice, in particular “a reduction to the TAC for 2023-24 would increase the probability of higher long-term biomass and catch levels in the Pacific saury stock”;

Recognizing further that the SC8 recommended adopting interim harvest control rule (HCR) from the list to be provided by the 5th meeting of the Small Working Group on Management Strategy Evaluation for Pacific Saury (SWG MSE PS05);

Further recognizing the urgent needs to take responsible actions to prevent further degradation and to ensure recovery of the Pacific saury stock;

Adopts the following conservation and management measure in accordance with Article 7 of the Convention:

EFFORT MANAGEMENT

1. Members of the Commission, not described under paragraph 2, and that are currently fishing for Pacific saury shall refrain from expansion, in the Convention Area, of the number of fishing vessels entitled to fly their flags and authorized to fish for Pacific saury from the historical existing level.
2. Members fishing for Pacific saury in areas of their jurisdiction that are adjacent to the Convention Area shall refrain from rapid expansion, in the Convention Area, of the number of fishing vessels entitled to fly their flags and authorized to fish for Pacific saury from the historical existing level.¹
3. Members of the Commission participating in Pacific saury fisheries in areas under national jurisdiction adjacent to the Convention Area are, in accordance with relevant provisions of Article 3 of the Convention, requested to take compatible measures in paragraph 2.
4. Each Member of the Commission participating in Pacific saury fisheries shall implement either of the following measures:
 - a) to reduce the number of fishing vessels flying its flag and fishing for Pacific saury in the Convention Area by 10% from the number of its fishing vessels that fished for Pacific saury in the Convention Area in 2018; or
 - b) to prohibit fishing vessels flying its flag from engaging in fishing for Pacific saury in the Convention Area outside its designated fishing period of no longer than 180 consecutive days each year.

Each Member shall notify the Secretariat of the measure it implements and its designated fishing period in case of b. above no later than May 1st each year. The Secretariat shall summarize the notifications from Members and make it available to all Members and CNCPs. This Paragraph does not apply to Members whose fishing vessels that fished for Pacific saury in the Convention Area in 2018 were less than five (5).

¹ Paragraph 2 applies to Russia and Japan

CATCH MANAGEMENT

5. The interim harvest control rule (HCR) for Pacific saury is as attached in Annex I.
6. The interim HCR is applied until the establishment of a management procedure to be recommended through an MSE process by the Joint SC-TCC-COM Small Working Group on Management Strategy Evaluation for Pacific Saury (SWG MSE PS), or unless otherwise decided by the Commission. The SWG MSE PS and the SC shall review the performance of the interim HCR every year based on the best scientific information available, particularly the latest stock assessment results, and provide a recommendation for the Commission, as necessary.
7. For 2025, Members of the Commission agreed that the annual catch of Pacific saury in the entire area (the Convention Area and the areas under their jurisdiction adjacent to the Convention Area) should not exceed 202,500 metric tons, as calculated using the interim HCR in Annex I.
8. In 2025, the annual total allowable catch (TAC) of Pacific saury in the Convention Area shall be limited to 60% of the annual catch limit in the entire area in paragraph 7².
9. As a provisional measure until the Commission decides allocation of the TAC, each Member of the Commission shall reduce the annual total catch of Pacific saury by the fishing vessels entitled to fly its flag in 2025 by 55% from its reported catch in 2018 (Annex II), and shall take necessary measures so that the total catch in the Convention Area will not exceed the TAC set out in paragraph 8. Members of the Commission and CNCPs shall ensure that discards of Pacific saury count against their catch limits.
10. To comply with the TAC, the following measures shall be in place in 2025:
 - a) Members of the Commission shall report to the Executive Secretary, in the electronic format, weekly catches of Pacific saury in the Convention Area by fishing vessels flying their flags by Wednesday of the next week. The Executive Secretary shall make publicly available the compiled catch of Pacific saury in the Convention Area on the Commission's website as well as share each Member's catch of Pacific saury in the Convention Area on

² 121,500 metric tons in 2025

the Member's page of Commission's website without delay; and

- b) In the event that the total reported catch of all Members reaches 90% of the TAC set out in paragraph 8, the Executive Secretary shall notify all Members without delay. Those Members with more than 10,000 mt of catch limits shall close the fishery within 72 hours from the receipt of the notification. Those Members with less than 10,000 mt of catch limits may continue operations, but their total catch shall not exceed 90% of their catch limits.
- c) If any Members commit to reduce its annual total catch of Pacific Saury by fishing vessels entitled to fly its flag in 2025 by 65.5% from its reported catch in 2018, it shall be exempted from the requirements stipulated in Paragraph 10 (b). In case of that, the TAC for the rest of the member referred in the paragraph 10 (b) shall be 121,500 metric tons minus the catch limit of member(s) that make such commitment. Such commitment shall be submitted to the Secretariat no later than May 1st, 2025, and be circulated to all Members, as well as TAC applied to those Members subject to paragraph 10 (c).

11. Members of the Commission and CNCPs shall ensure that fishing vessels flying their flag that fish for Pacific saury in the Convention Area record their catches, including incidental catches of other NPFC species, and any discards and report them to the relevant flag state authorities in accordance with their national data recording and reporting requirements.

11 bis. To minimize the impact of fishing activities on non-target species, Members shall ensure that all trawl-gear fishing vessels flying their flag use a bycatch excluder device as prescribed in Annex III, while conducting fishing activities in the Convention Area. In addition, Members may use other bycatch exclusion strategies that have been proven to reduce incidental bycatch of non-target species, also described in Annex III. Bycatch excluder devices shall be made available for inspection in a timely manner, upon the request of an inspector during high seas boarding and inspections activities.

11 ter. Members shall ensure that all fishing vessels flying their flag maintain a record of incidentally caught sharks, rays, marine mammals, turtles, and other mega-fauna (defined as large marine organisms that typically occupy high trophic levels in oceans ecosystems) by genus and species where known, quantity per set or tow, and where released, whether the specimen was released live.

12. In the event that a Member reaches 70% of its catch limit set out in paragraph 9, the Executive Secretary shall inform that Member of that fact, with a copy to all other Members. That Member shall close the fishery for its flagged vessels when the total catch of its flagged vessels is equivalent to 100% of its catch limit. Such Member shall notify promptly the Executive Secretary of the date of the closure, except as described in paragraph 13. Upon receipt of the notification, the Executive Secretary shall circulate it to all the Members.
13. Notwithstanding paragraph 9, 10 b) and c), Members fishing for Pacific saury in areas of their jurisdiction³ that are adjacent to the Convention Area may divert part of their catch limit for areas under their jurisdiction to their own catch of Pacific saury in the Convention Area by vessels entitled to fly their flags and authorized to fish for Pacific saury⁴. Such Members shall annually report the catch limit that they diverted in accordance with this paragraph in their Annual Report.

OTHER MEASURES

14. Development of new fishing activity for the Pacific saury fishery in the Convention Area by Members without documented historical catch for Pacific saury in the Convention Area shall be determined in accordance with relevant provisions, as appropriate, including but not limited to Article 3, paragraph (h) and Article 7, subparagraphs 1(g) and (h) of the Convention.
15. Members of the Commission shall ensure that fishing vessels flying their flags operating in the Convention Area to fish Pacific saury be equipped with an operational vessel monitoring system that is activated at all times.
16. In order to prevent discards and contribute to the proper stock assessment, Members of the Commission shall take necessary measures to ensure that fishing vessels flying their flags in the Convention Area fishing for Pacific saury retain all the catch of Pacific saury on board.

³ Paragraph 13 applies to Russia and Japan

⁴ The diverted portion used in the Convention Area shall count toward the Members' catch limits within the EEZ, both for future discussions and for calculating TAC utilization in the Convention Area.

17. In order to protect juvenile fish, Members of the Commission shall take measures for fishing vessels flying their flags to refrain from fishing for Pacific saury in the areas east of 170°E from June to July. The SC and its subsidiary Small Scientific Committee on Pacific Saury will submit to the Commission relevant scientific information on geographical distribution of juvenile fish in the Convention Area, and its migration patterns.
18. The SWG MSE PS shall endeavor to consider the establishment of a management procedure to be formulated through an MSE process by the 11th Commission Meeting in 2027. The Commission shall continue to fund an external expert to support the process.
19. This CMM shall in no case be a basis for any future CMM for Pacific saury.
20. The Commission shall review and revise, as appropriate, this CMM based on the advice and recommendations from the SC and the SWG MSE PS, at its every Commission meeting.
21. Consideration should be given to development aspirations of small island developing States in accordance with international law in revising this CMM.
22. This CMM shall enter into force on May 1st, 2025, replacing CMM 2024-08 and will be reviewed on a regular basis.

Interim Harvest Control Rules (HCR) for Pacific saury

1. Management Objectives for the Pacific saury fisheries

Interim Management Objectives

(a) *Recovery of the stock (prioritized objective):*

- i. *The stock biomass is rebuilt to B_{tar} within 5 years with 50% probability;*
- ii. *The stock biomass is maintained above the B_{tar} level in each of years 6-10 with 50% probability.*

2. *Avoiding unsustainable state of the stock (secondary objective):*

- i. *The annual probability in each of years 6-10 that the stock drops below B_{lim} should not exceed 10%;*
- ii. *The annual probability in each of years 6-10 that fishing mortality is above F_{lim} should not exceed 10%.*

3. *Achieving high and stable catch (tertiary objective):*

- i. *Average catch over years 6-10 is as high as possible;*
- ii. *Catch in each of years 6-10 is as stable as possible.*

Interim Biological reference points

Interim biological reference points used the interim HCR for Pacific saury are as follows:

Reference point
$B_{tar} = B_{MSY}$
$B_{lim} = 0.35B_{MSY}$
$F_{tar} = F_{MSY}$
$F_{lim} = 1.35F_{MSY}$

2. Interim Harvest Control Rules (HCRs)

Based on the latest base-case results of stock assessment of Pacific saury, annual catch level in the entire area $y = a_{y-1} * F_{MSY} * \hat{B}_{y-1}$, where $a_{y-1} = \min(1, \hat{B}_{y-1} / \hat{B}_{MSY})$

(as shown in Figure 1).

It reduces fishing intensity at biomass levels below B_{MSY} . Maximum allowable change of the annual catch level in the entire area is restricted to 10%.

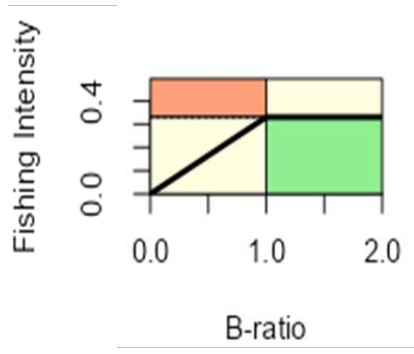


Figure 1. Illustration of the interim HCR.

3. Management cycle

The SC annually advises the Commission of the calculated annual catch level in the entire area of Pacific saury for the following year in accordance with the interim HCR as described in paragraph 2, based on the latest stock assessment results.

Reported Pacific saury catch in 2018

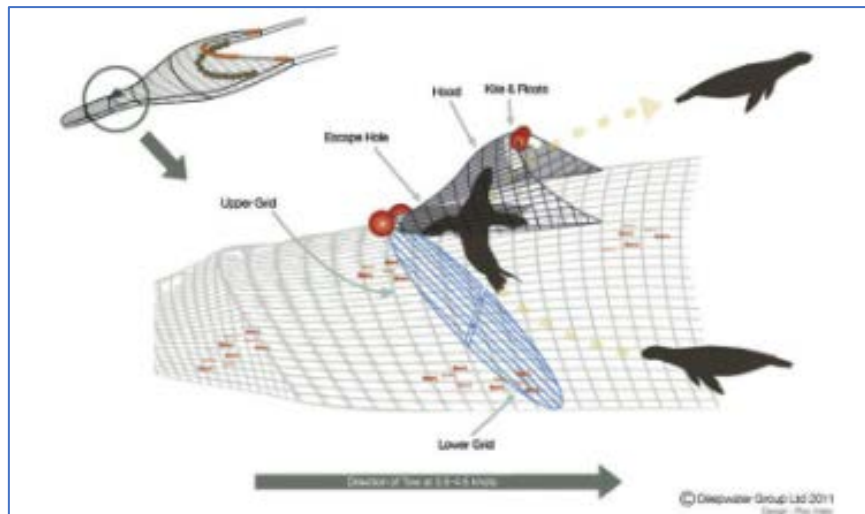
Member	Catch (metric ton)
China	90,365
Japan	46,859
Korea	20,759
Russia	5,459
Chinese Taipei	180,466
Vanuatu	8,231

Bycatch Exclusion Strategies, Devices, and Methods

1. Bycatch Excluder Device Specifications: the use of a bycatch excluder device is mandatory for all trawl-gearred fishing vessels. The excluder device shall be constructed of durable materials and must meet the criteria listed below:

- a. The frame and bars (grid) shall be rigid and smooth, composed of steel or aluminum with the grid oriented at a 30-45° angle relative to the net's horizontal plane.
- b. The grid shall be large enough to fill the entire inner circumference of the net and secured to the entire inner surface of the net. It shall be placed within the neck of the trawl and forward of the codend portion of the net. This grid may be affixed with floatation to support regular, unimpeded vessel operations.
- c. The grid bars shall be spaced with a maximum of 20cm between each bar.
- d. The exit hole shall be positioned on the top of the net, above the grid, to allow for escape from the top of the net.
- e. The exit hole shall be a uniformly shaped opening positioned above the grid to allow unimpeded passage of non-target species. The dimensions of this exit hole shall be a minimum of 70 cm wide and 1.0 m long.
- f. The exit hole area may be covered by an exit hole hood or single mesh panel that can move freely to allow non-target species to escape.

Figure 1. representation of a bycatch excluder device for reference only (source: Hamilton and Baker, 2019). Members will be responsible for implementing their own excluder devices to meet the objective of reducing incidental bycatch of mega-fauna and non-target species, in line with the specifications noted in a through f.



2. Other Bycatch Exclusion Strategies to Reduce Incidental Bycatch:

- a. Acoustic Deterrent Devices: These sound emitting electronic devices create an aversive response to discourage sharks from entering specific areas. When deployed with trawl gear, these devices have been found to reduce the capture of sharks and marine mammals.
- b. Olfactory Deterrents: Semio-chemical shark deterrents using ammonia-based compounds that illicit aversive or repellent response.
- c. Offal discard management: Avoid the release of offal while actively fishing or towing trawl gear.
- d. Light Deterrents: Light emitting devices in various wavelengths including ultra-violet light have been used as an effective method to reduce shark, marine mammal, turtle, and other incidental bycatch in trawl fisheries.

CMM 2025-11

(Entered into force 10 July 2025)

**CONSERVATION AND MANAGEMENT MEASURE FOR JAPANESE SARDINE,
NEON FLYING SQUID AND JAPANESE FLYING SQUID**

The North Pacific Fisheries Commission (NPFC),

Recalling that six pelagic species – Pacific saury, chub mackerel, blue mackerel, Japanese sardine, neon flying squid, and Japanese flying squid – are identified as priority species;

Also recalling that the NPFC has adopted the CMMs on two species – Pacific saury and chub mackerel;

Noting that specific measures for the remaining four species have yet to be introduced while those species have been subject to extensive fishing practices, whether they are target or bycatch species;

Reaffirming the General Principles provided in Article 3 of the Convention, in particular, Paragraph (h) stipulating that any expansion of fishing effort does not proceed without prior assessment of the impacts of those fishing activities on the long-term sustainability of fisheries resources;

Adopts the following conservation and management measure in accordance with Article 7 of the Convention:

1. Members of the Commission and Cooperating non-Contracting Parties (CNCs) with substantial harvest of any of Japanese sardine, neon flying squid and Japanese flying squid (hereinafter referred to as “the three Pelagic Species”) in the Convention Area shall refrain from expansion, in the Convention Area, of the number of fishing vessels entitled to fly their flags and authorized to fish for such species from the historical existing level until the stock assessment for such species by the SC has been completed.
2. Members of the Commission and CNCs without substantial harvest of the three Pelagic Species in the Convention Area are encouraged to refrain from expansion, in the Convention Area, of the number of fishing vessels entitled to fly their flags and authorized to fish for such species from the historical existing level until the stock assessment for such species by the SC has been completed.
3. Members of the Commission participating in fishing for the three Pelagic Species in areas under

their jurisdiction adjacent to the Convention Area are requested to take compatible measures in paragraph 1. Such Members¹ may divert part of their catch limit for areas under their jurisdiction to their own catch of the species in the Convention Area by vessels entitled to fly their flags and authorized to fish for the species, provided that: (i) the Member has established a catch limit for the species in its jurisdiction; (ii) the Member has notified the Commission of the catch limit; and (iii) the total catch of the species in the Convention Area and the areas under their jurisdiction adjacent to the Convention Area will not exceed the Member's total catch limit for its jurisdiction respectively.

4. Development of new fishing activity for the three Pelagic Species in the Convention Area by Members of the Commission without documented historical catch for such species in the Convention Area shall be determined in accordance with relevant provisions, as appropriate, including but not limited to Article 3, paragraph (h) and Article 7, subparagraphs 1(g) and (h) of the Convention.
5. Members of the Commission and CNCs shall ensure that fishing vessels flying their flag operating in the Convention Area authorized to fish the three Pelagic Species are to be equipped with an operational vessel monitoring system that is activated at all times.
6. Members of the Commission and CNCs shall ensure that fishing vessels flying their flag that fish for the three Pelagic Species in the Convention Area record their catches, including incidental catches of other NPFC species, and any discards and report them to the relevant flag state authorities in accordance with their national data recording and reporting requirements.

6 bis. To minimize the impact of fishing activities on non-target species, Members shall ensure that all trawl-gear fishing vessels flying their flag use a bycatch excluder device as prescribed in Annex I. In addition, Members may use other bycatch exclusion strategies that have been proven to reduce incidental bycatch of non-target species, also described in Annex I. Bycatch excluder devices shall be made available for inspection in a timely manner, upon the request of an inspector during high seas boarding and inspections activities.

6 ter. Members shall ensure that all fishing vessels flying their flag maintain a record of incidentally caught sharks, rays, marine mammals, turtles, and other mega-fauna (defined as large marine organisms that typically occupy high trophic levels in oceans ecosystems) by genus and species where known, quantity per set or tow, and if released, whether the specimen was released live.

7. Members of the Commission and CNCs shall provide their data on the three Pelagic Species in accordance with the data requirements adopted by the Commission in the Annual Report by the end of February, every year. The Commission shall review such information at the annual meeting of every year.

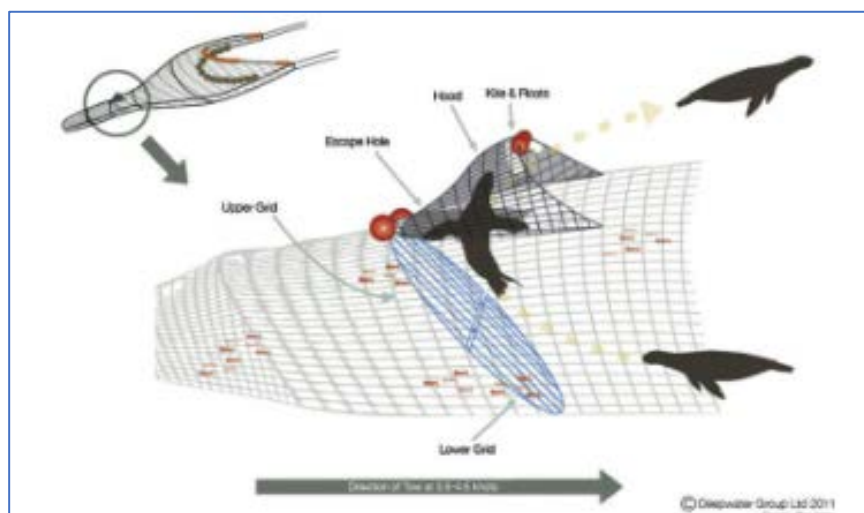
¹ Paragraph 3 applies to Russia and Japan

8. Members of the Commission and CNCPs shall cooperate to take necessary measures including sharing information, in order to accurately understand the situation and eliminate IUU fishing for the three Pelagic Species.
9. After a stock assessment for any of the three Pelagic Species has been completed, the provisions in Paragraph 1 shall be reviewed by the Commission and those provisions shall not be a precedent to hinder those Members who are not harvesting substantial amounts of the three Pelagic Species assessed in the Convention Area to develop their own fisheries in the Convention Area noting the Commission shall regularly review the harvests of such species in the Convention Area by all Members.
10. This management measure shall expire and be replaced by the measure to be adopted by the Commission based on the advice and recommendations from the Scientific Committee.

Bycatch Exclusion Strategies, Devices, and Methods

1. Bycatch Excluder Device Specifications: the use of a bycatch excluder device is mandatory for all trawl-geared fishing vessels. The excluder device shall be constructed of durable materials and must meet the criteria listed below:
 - a. The frame and bars (grid) shall be rigid and smooth, composed of steel or aluminum with the grid oriented at a 30-45° angle relative to the net's horizontal plane.
 - b. The grid shall be large enough to fill the entire inner circumference of the net and secured to the entire inner surface of the net. It shall be placed within the neck of the trawl and forward of the codend portion of the net. This grid may be affixed with floatation to support regular, unimpeded vessel operations.
 - c. The grid bars shall be spaced with a maximum of 20cm between each bar.
 - d. The exit hole shall be positioned on the top of the net, above the grid, to allow for escape from the top of the net.
 - e. The exit hole shall be a uniformly shaped opening positioned above the grid to allow unimpeded passage of non-target species. The dimensions of this exit hole shall be a minimum of 70 cm wide and 1.0 m long.
 - f. The exit hole area may be covered by an exit hole hood or single mesh panel that can move freely to allow non-target species to escape.

Figure 1. representation of a bycatch excluder device for reference only (source: Hamilton and Baker, 2019). Members will be responsible for implementing their own excluder devices to meet the objective of reducing incidental bycatch of mega-fauna and non-target species, in line with the specifications noted in a through f.



2. Other Bycatch Exclusion Strategies to Reduce Incidental Bycatch:

- a) Acoustic Deterrent Devices: These sound emitting electronic devices create an aversive response to discourage sharks from entering specific areas. When deployed with trawl gear, these devices have been found to reduce the capture of sharks and marine mammals.
- b) Olfactory Deterrents: Semio-chemical shark deterrents using ammonia-based compounds that illicit aversive or repellant response.
- c) Offal discard management: Avoid the release of offal while actively fishing or towing trawl gear.
- d) Light Deterrents: Light emitting devices in various wavelengths including ultra-violet light have been used as an effective method to reduce shark, marine mammal, turtle, and other incidental bycatch in trawl fisheries.