



**Australian Government**

**Australian Fisheries Management Authority**

---

**Meeting of the Tropical Tuna Resource  
Assessment Group  
(TTRAG)  
FINAL RECORD  
TTRAG 42**

**24 SEPTEMBER 2024**

# Contents

Meeting details .....	3
1 Preliminaries .....	4
1.1 Welcome and apologies .....	4
1.2 Declaration of interests .....	4
1.3 Adoption of agenda .....	4
1.4 Actions arising from previous meetings .....	4
1.5 Out of session correspondence .....	4
2 Member updates.....	4
3 WTBF multi-season TACC setting procedure .....	4
4 ETBF fishery indicators .....	5
4.1 Economic Conditions Index Report.....	5
4.2 Annual south-west Pacific catch data .....	6
4.3 ETBF Indicator Summary Report .....	7
5 WTBF fishery indicators .....	7
6 ETBF broadbill swordfish RBCC – modified harvest strategy.....	8
7 Striped marlin constant catch indicators .....	9
8 TACC and overcatch/undercatch advice .....	9
8.1 Overcatch and undercatch advice for all species .....	9
8.2 Finalise TACC advice for ETBF species .....	10
8.3 Finalise TACC advice for WTBF species .....	11
9 Other Business .....	11
Attachment 1 - Updated table of declared interests.....	12
Attachment 2 - Adopted Agenda.....	14
Attachment 3 - Updated actions arising tables.....	15
Attachment 4 - Out of session correspondence.....	18
Attachment 5 - ABARES ETBF economic conditions presentation.....	19
Attachment 6 - CSIRO southwest Pacific presentation.....	28
Attachment 7 - CSIRO ETBF indicators presentation.....	35
Attachment 8 - CSIRO WTBF indicators presentation.....	46
Attachment 9 - CSIRO swordfish RBCC presentation.....	54

## Meeting details

**Chair:** Dr Cathy Dichmont

**Date:** 24 September 2024

**Meeting:** 42

**Venue:** video conference via MS Teams

**Attendance:** All members attended the meeting virtually.

Name	Position
Members	
Pavo Walker	Industry Member
Gary Heilman	Industry Member
Ashley Williams	Scientific Member
Ian Knuckey	Scientific Member
Julian Pepperell	Scientific/Recreational Member
Robert Curtotti	Economic Member
Lara Ainley	AFMA Member
Elissa Mastroianni	Executive Officer
Invited Participants	
David Ellis	Industry Invited Participant
Terry Romaro	Industry Invited Participant
Observers	
Denham Parker	CSIRO Employee
Shayer Alam	AFMA Senior Management Officer

### Apologies:

James Larcombe – ABARES Scientific Member

## 1 Preliminaries

### 1.1 Welcome and apologies

The forty-second meeting of the Tropical Tuna Resource Assessment Group (TTRAG 42) was opened at 9:04am on 24 September 2024 by the Chair, Cathy Dichmont. The Chair welcomed members and observers to the meeting and:

- a) made an Acknowledgement of Country;
- b) noted the retirement of James Larcombe from ABARES and as a scientific member on TTRAG.
- c) advised members the meeting would be recorded to assist with the preparation of the meeting record. The recording will be deleted once the record is finalised.

### 1.2 Declaration of interests

The RAG noted the standing declarations of interest and provided updates, as necessary. The updated delegations of interest are at **Attachment 1**.

The RAG agreed that industry members and the industry invited participants held potential conflicts of interest with *Agenda Items 8 –TACC and overcatch/undercatch advice*. No other conflicts were identified.

These members were asked to leave the room while the RAG considered the nature of the conflict and appropriate action to be taken when the agenda item is discussed. The remaining RAG members agreed that the expertise of the industry members in relation to TACC advice could be provided under Agenda Items 4-6 inclusive and could therefore be excluded from Agenda Item 8, when non-conflicted members would finalise and ratify TACC recommendations. Industry members returned to the room and were notified of this course of action when they had returned to the meeting.

### 1.3 Adoption of agenda

The RAG adopted the agenda with no amendments (**Attachment 2**).

### 1.4 Actions arising from previous meetings

Updates on actions arising (**Attachment 3**) were taken as read, with the exception of Action Item 7. The RAG agreed to remove this item as no further action was required.

### 1.5 Out of session correspondence

As with Agenda Item 1.4, out of session correspondence (**Attachment 4**) was taken as read. There were no questions from members on correspondence.

## 2 Member updates

Noting the limited time and online nature of the meeting, member updates were provided by exception. An industry invited participant provided a specific update on fishing operations in the WTBF, regarding the need for an operator to lease in yellowfin tuna quota this season due to the reduced overall Australian allocation under IOTC requirements.

## 3 WTBF multi-season TACC setting procedure

The RAG considered the draft WTBF multi-season TACC setting procedure as presented by AFMA. The RAG noted that, given their support for the ETBF multi-season TACC setting procedure, this document

was based on the ETBF procedure. The key differences are that the WTBF procedure covers all species (not just tropical tunas) and there are less indicators reviewed for the WTBF.

The RAG first discussed the technical nature of the procedure document. Members provided comments, mostly relating minor edits in the document, as well as suggestions for inclusion. CSIRO confirmed that size data is not presented as an indicator for the WTBF, although it is collected by industry. CSIRO agreed to investigate what size data is available for the WTBF and its potential utility as an indicator. The RAG agreed that, following this investigation, should size data not be considered a practical or worthwhile indicator the agreed default position would be to exclude it from the WTBF indicators.

#### **Action**

CSIRO to investigate size data availability for the WTBF and usefulness as a fishery indicator.

The RAG then discussed the principles of setting TACCs for three seasons in the WTBF. The RAG acknowledged concern from industry regarding Australia's yellowfin allocation under our national obligations to the IOTC. However, members were still of the view that the principle of setting 3-year TACCs, as had been done for the WTBF in the past, could be supported independent of any specific TACC value. The procedure has been designed with reviews during the non-TACC setting year in place so that RAG advice can change in response to any major changes during non-TACC setting years if necessary. Australia's obligations or whole of government position with respect to IOTC would therefore warrant a change in advice. For clarity, the AFMA member confirmed that any change required as a result of IOTC outcomes would be implemented at the start of the next fishing season.

Having regard to this, the RAG agreed to endorse the principles of the WTBF TACC Setting Procedure and ratify the document itself, with RAG corrections and comments included, out of session. The RAG agreed that their TACC advice for the WTBF 2025/26 fishing season could be applied to the 2026/27 and 2027/28 fishing seasons should TTMAC and the AFMA Commission also agree to the procedure.

## **4 ETBF fishery indicators**

The RAG noted that TTMAC and the AFMA Commission both approved and endorsed the 3-year TACC setting procedure for tropical tunas in the ETBF. For clarity, the AFMA member confirmed that swordfish and striped marlin TACCs will continue to be set annually. Having regard to this, the RAG considered the ETBF fishery indicators.

### **4.1 Economic Conditions Index Report**

The RAG noted and discussed the presentation from ABARES, on the Economic Conditions Index (ECI) Report (**Attachment 5**).

- ECI for albacore tuna has worsened compared to the previous year, while southern bluefin tuna is well above the average (mostly due to increased nominal CPUE for this species). The ECI for all other species is below average but similar to the previous financial year.
- 2023-24 saw a slight decline in GVP as compared to 2022-23, mostly driven by lower catch volumes of albacore, with other species fairly similar to 2022-23.
- There has been a recent divergence in Australian dollar exchange rates between US dollars and the Japanese Yen. This has favoured export products going to the US (e.g. albacore) over those going to Japan (e.g. bigeye tuna).
- Input costs, such as fuel and bait, remain high which continues to lead to declining economic conditions. Members discussed the differing use of bait in recent years, and the value of either using a composite costing approach or separating out bait types in some way.

- Availability of southern bluefin in the ETBF has enhanced and increased profitability for some operators in the southern part of ETBF.
- ABARES is exploring some non-survey options for validation, as it is becoming difficult to survey fishers and get a representative sample.

#### Action

Economic Member to explore the following for future economics reports:

- Possibility of building in a composite cost index in place of a proxy (for fuel and bait) in future.
- Develop some supporting indicators for the ECI (e.g. cost of freighting good overseas) to give some context to the ECI.
- Include volume as well as value in total exports in future reports/presentations.

#### 4.2 Annual south-west Pacific catch data

The RAG noted the presentation from CSIRO (**Attachment 6**) on south-west Pacific catch data. The RAG then discussed the following points<sup>1</sup>:

- The RAG recalled that both the broad WCPFC stock assessments and what localised impact the ETBF may be having are important for TACC decision making. A scientific member provided that although these species are capable of moving across the ocean, the WCPFC assessment regions specified were originally based on bioregions<sup>2</sup>, so the impact of ETBF fishing may be differential across regions.
- Australia-New Zealand region
  - Australia's percentage contribution for all species in this region was slightly lower in 2023 compared to 2022.
  - Australia's contribution relative to other countries' catches to striped marlin and swordfish in this region remains quite high.
- Region 5 – used to compare catches for tropical tuna species
  - For albacore, the major catches in 2023 came from China and New Caledonia. The ETBF contribution relative to other countries' catches remains low.
  - For bigeye tuna, the major catches in 2023 came from China and the Solomon Islands. ETBF contributed slightly less to overall catches compared to 2022.
  - For yellowfin, the major catch came from China (approximately 10%) with other countries catch similar to Australia's. The ETBF contribution remains low and stable.
- Region 1 – used to compare catches for billfish species (swordfish and striped marlin)
  - For broadbill swordfish, the major catches in 2023 came from Australia and Spain. The ETBF contribution increased slightly compared to 2022 but remains stable overall.
  - For striped marlin, the major catches in 2023 came from Australia and New Caledonia. There is a long-term decline in the ETBF contribution to regional catches for this species, likely due to the non-targeted byproduct nature of this species for the ETBF, although it is still high relative to other countries' catches.

---

<sup>1</sup> Specific figures and values are available in Attachment 6 and in the TTRAG ETBF TACC advice papers provided to TTMAC and the AFMA Commission.

<sup>2</sup> Further information on the reasoning behind bioregions for different stocks is available in their respective [WCPFC stock assessments](#).

### 4.3 ETBF Indicator Summary Report

The RAG noted the presentation from CSIRO (**Attachment 7**) on the recap of ETBF indicators from TTRAG 41. The RAG then discussed the following points<sup>3</sup>:

- Albacore tuna catch in 2023 was below the 5- and 10-year averages; standardised CPUE remains variable; and there is no clear trend in sizes and weights.
- Bigeye tuna catch in 2023 was below the 5 and 10 year averages; standardised CPUE was below average for recruits and above for adults; and a slightly higher number of larger fish seem to be present.
- Yellowfin tuna catch in 2023 was greater than 2022 and close to the 5- and 10-year averages; and there was no clear trend in size or standardised CPUE.
- Broadbill swordfish catch in 2023 was above the 5-year average, but below the 10-year average; there was some stability in size and smaller fish entering the fishery have been observed; and the standardised CPUE for adults was slightly lower for adults but high for the other indices, further supporting smaller fish entering the fishery.
- Striped marlin catch in 2023 was above both the 5 and 10 year averages, as was the standardised CPUE; and there was no clear trend in median size or size classes.
- With regards to stock status, only striped marlin is currently assessed as overfished. All other species are not overfished and not subject to overfishing. The RAG noted that the tropical tuna species are very close to their target reference points.

#### Albacore tuna TACC advice

The RAG confirmed that there was no additional advice or indications to suggest that an albacore tuna TACC of 2,500 t would not be an appropriate TACC for every season of the next three fishing seasons. The RAG noted that there were some observations for albacore tuna in the 2023 Climate and Ecosystem Status report, considered at TTRAG 41, but nothing that would specifically influence TACC advice.

#### Bigeye tuna TACC advice

The RAG confirmed that there was no additional advice or indications to suggest that a bigeye tuna TACC of 1,056 t would not be an appropriate TACC for every season of the next three fishing seasons. The RAG recognised a drop in catch rates, but noted that considering overall catch remains small, changing operational dynamics in the fishery (more SBT targeting when past effort would have been directed to BET) and a poor Yen exchange rates, there were no sustainability concerns for bigeye tuna at this stage. The recent decrease in catch rates warrants monitoring of the standardised CPUE over the next few years.

#### Yellowfin tuna TACC advice

The RAG confirmed that there was no additional advice or indications to suggest that a yellowfin tuna TACC of 2,400 t would not be an appropriate TACC for every season of the next three fishing seasons. The RAG noted that the stock status of yellowfin tuna is close to the target reference point.

## 5 WTBF fishery indicators

The RAG noted the presentation by CSIRO (**Attachment 8**). The RAG then discussed the following points<sup>4</sup>:

---

<sup>3</sup> Specific figures and values are available in Attachment 7 and in the TTRAG ETBF TACC advice papers provided to TTMAC and the AFMA Commission.

<sup>4</sup> Specific figures and values are available in Attachment 7 and in the TTRAG ETBF TACC advice papers provided to TTMAC and the AFMA Commission.

- There is currently only one operator fishing in the WTBF and Australian catches made up less than 1% of total IOTC catches per species in 2023<sup>5</sup>.
- Bigeye tuna catch and nominal CPUE remains variable, consistent with previous years. Likewise, catch and nominal CPUE for broadbill swordfish is similar compared to previous years.
- The nominal CPUE for yellowfin tuna and striped marlin is above both the 5- and 10-year average, with associated higher catches for striped marlin as well.
- Stock status, if considered with respect to Commonwealth reference points; for broadbill swordfish is not overfished nor subject to overfishing, for yellowfin and bigeye tuna are not overfished but are subject to overfishing, and for striped marlin is overfished and subject to overfishing.

#### **Bigeye tuna TACC advice**

The RAG did not consider that there was any additional advice and no indications that a bigeye tuna TACC of that a TACC of 2,000 t would not be appropriate TACC for every season of the next three fishing seasons. The RAG noted that the IOTC will run the bigeye management procedure at the upcoming scientific meeting, and it is uncertain if this will impact Australia's domestic management arrangements.

#### **Yellowfin tuna TACC advice**

The RAG did not consider there was any additional advice and no indications that a yellowfin tuna TACC of 2,000 t would not be an appropriate TACC for every season of the next three fishing seasons. The RAG noted industry's request for the interim yellowfin tuna TACC to return to 5,000 t; and if considered then TTRAG recognises that this would have negligible impact on the sustainability of yellowfin tuna in the IOTC.

#### **Broadbill swordfish TACC advice**

The RAG did not consider there was any additional advice and no indications that a broadbill swordfish TACC of 3,000 t would not be an appropriate TACC for every season of the next three fishing seasons. The RAG noted that at current catch levels, there is no risk to the IOTC stock, however if catch were to increase towards the TACC and other factors changed (recruitment, environmental etc.) then this risk is uncertain.

#### **Striped marlin TACC advice**

The RAG did not consider there was any additional advice and no indications that a striped marlin TACC of 125 t would not be appropriate TACC for every season of the next three fishing seasons. The RAG noted that, although striped marlin has been assessed as both overfished and subject to overfishing, Australia's TACC (if it were to be fully caught) and the actual catch levels represent a very small proportion of the total fishing mortality on this stock.

Overall, the setting of TACCs is consistent with previous years and TTRAG recognised that the low level of catch and effort in the WTBF would have a negligible impact on the sustainability of these species in the IOTC.

## **6 ETBF broadbill swordfish RBCC – modified harvest strategy**

The RAG noted and discussed the presentation from CSIRO (**Attachment 9**) on the recommended biological commercial catch (RBCC) produced via application of the modified swordfish harvest strategy. Under the modified harvest strategy, the RBCC plus the expected undercatch (942 t plus 150 t) exceeds the modification rule resulting in no recommended change to the TACC for the 2025 ETBF fishing season.

---

<sup>5</sup> Bigeye tuna = 0.02%, yellowfin tuna = 0.004%, swordfish = 0.36%, striped marlin = 0.03%



Members agreed there were no additional exceptional circumstances present in the fishery which would warrant a change to this recommendation.

The RAG agreed that further investigation of the use of metiers and other standardisation methods may be considered during the review of the swordfish harvest strategy. Likewise, the RAG agreed the harvest strategy review should contemplate other reference periods, as suggested in March.

## **7 Striped marlin constant catch indicators**

The RAG regarded information presented under Agenda Item 4, the indicators for striped marlin, and considered this with respect to the constant catch approach. The RAG discussed whether there was any reason the TACC should not be set at 351 t for the 2025 ETBF fishing season.

The RAG noted that the WCPFC stock status of striped marlin remains overfished and that the latest stock assessment suggests it could be subject to overfishing. The RAG also noted that although the commercial catch of striped marlin is low, Australia does take a high proportion of this species catch in the SW Pacific Region 1<sup>6</sup>. There has also been a recent increase in catch and CPUE, confirmed by industry members. However, total catch remains below 351 t and the operational nature of the fishery means striped marlin is primarily a bycatch species. Members did not consider there were any additional indicators or new advice which would suggest the constant catch TACC of 351 t would not be appropriate for the next fishing season.

## **8 TACC and overcatch/undercatch advice**

### **8.1 Overcatch and undercatch advice for all species**

The RAG recalled their previous consideration of yellowfin tuna pulse events and support for increasing overcatch and undercatch to 20% for this species as an option to provide greater flexibility for industry to utilise pulse events. The RAG noted the request from the Tropical Tuna Management Advisory Committee (TTMAC) to consider the sustainability of increasing overcatch and undercatch to 20% for all species, except striped marlin; and discussed several factors pertaining to the overcatch and undercatch limits.

Although TTMAC's reasoning was one of consistency across species, there was the view of some industry members that an episodic increase in abundance (a 'pulse') could occur for any species, and there is a subsequent need for flexibility for other species. For yellowfin tuna there had been a clear process and consideration of supporting data which led to the recommended increase of overcatch and undercatch to 20%. While the sustainability implications and justifications for recommending an exception to the current 10% may also be applicable to other species, the RAG has not had the opportunity to consider relevant supporting data to inform their position for the other species. Similarly, the RAG should be cautious of endorsing an increase to 20% overcatch and undercatch without considering the potential implications for the swordfish harvest strategy.

There are potential increases in flexibility and economic efficiencies to be gained by increasing the overcatch and undercatch limits. The RAG noted the diversity of views across industry as a whole; some are of the view that the low level of current catches means this is not an urgent issue; others are catching close to the limit of their own holdings and would prefer flexibility to access future holdings rather than lease in extra quota; and others feel the change in overcatch and undercatch amounts is

---

<sup>6</sup> Region 1 as determined by WCPFC and agreed by TTRAG as the region of interest specific to broadbill swordfish striped marlin.

irrelevant with the current 28-day reconciliation policy in place. Members noted that the 28-day reconciliation period was a greater hinderance to flexibility than the overcatch and undercatch limits themselves, but also noted that this had been raised in the MAC and was being considered by that committee. There are a number of management, economic and operational issues intertwined with this topic which will still have to be considered by the MAC in any case.

Overall, all industry members were supportive of the proposed increase, and while there were no RAG members directly opposed, the RAG agreed that more time and data were required to warrant deferring the issue to next year. The RAG recognised that changing the overcatch and undercatch limits would not materially change the TACC, however members still agreed that in order to make an informed recommendation when this issue is next considered, the following information should be provided:

- Catch for species other than yellowfin and striped marlin, with the intention of identifying when a ‘pulse’ may have occurred in the past.
- Size distributions in pulses for each species, with a particular focus on recruits (the plots depicting the shape of the size distributions in the current summary reports may be a useful starting point).
- Advice from CSIRO on any unforeseen impacts on the swordfish harvest strategy, if applicable.

Industry members (due to their potential conflict of interests agreed under Agenda Item 1.2) left the room then left the room. Non-conflicted members discussed the specific overcatch and undercatch provisions for coming season/s. The RAG recommended overcatch and undercatch provision as specified in Table 1.

**Table 1. Overcatch and undercatch provisions for the 2025 ETBF season and 2025/26 WTBF season.**

Fishery	Species	Amount
ETBF	Yellowfin tuna	20%
ETBF	All other quota species	10%
WTBF	All quota species	10%

## 8.2 Finalise TACC advice for ETBF species

Non-conflicted members confirmed and finalised the RAG’s TACC recommendations for the ETBF, confirming that no conflicts in the meeting had affected the advice they had provided under Agenda Items 4, 6 and 7.

The RAG recommended tropical tuna TACCs for the 2025, 2026 and 2027 ETBF seasons as specified in Table 2, and for swordfish and striped marlin for the 2025 ETBF season as specified in Table 3.

**Table 2. Tropical tuna TACC recommendations for the 2025, 2026 and 2027 ETBF seasons.**

Quota species	TACC recommendation (tonnes)
Albacore tuna	2,500
Bigeye tuna	1,056
Yellowfin tuna	2,400

**Table 3. Swordfish and striped marlin TACC recommendations for the 2025 ETBF season.**

Quota species	TACC recommendation (tonnes)
Broadbill swordfish	1,047
Striped marlin	351

The RAG agreed to ratify the specific wording in the TTRAG ETBF TACC advice papers (for provision to the MAC and AFMA Commission) out of session.

### 8.3 Finalise TACC advice for WTBF species

Non-conflicted members confirmed and finalised the RAG’s TACC recommendations for the WTBF, confirming that no conflicts in the meeting had affected the advice they had provided under Agenda Item 5.

The RAG recommended TACCs for the 2025/26 WTBF season as specified in Table 4 and agreed this advice could apply for the 2026/27 and 2027/28 seasons if necessary.

**Table 4. TACC recommendations for the 2025/26 WTBF season.**

Quota species	TACC recommendation (tonnes)
Bigeye tuna	2,000
Broadbill swordfish	3,000
Striped marlin	125
Yellowfin tuna	2,000

The RAG agreed to ratify the specific wording in the TTRAG WTBF TACC advice papers (for provision to the MAC and AFMA Commission) out of session.

## 9 Other Business

There was one item of other business raised, namely reflections on how TTRAG meetings have been run this year and consideration of how future meetings may be run given the move to the multi-season TACC setting process.

The RAG discussed some suggestions for consideration, including:

- Having the TACC recommendation meeting structured as ‘Part 1’, where the RAG look at indicators and provide advice, and ‘Part 2’ where they consider the wording of the advice papers.
- Creating a standard advice template to avoid wordsmithing during the meeting.
- Potential for a RAG subcommittee to consider data in non-TACC setting years.

The RAG agreed it would be good to review a plan for the coming year in early 2025.

The Chair thanked members for their contributions this year and closed the meeting at 16:52pm.

## Attachment 1 – Updated declarations of interest

**Table 1.** Updated TTRAG declarations of interest

Position	Membership	Declared Interests
<b>Cathy Dichmont</b>	Chair	Has a consulting company but has no pecuniary interests in the tuna fisheries. Is the current Chair for the Commonwealth Research Advisory Committee (ComRAC), QLD RAC, and NSW RAC.
<b>Lara Ainley</b>	AFMA Member	Employee of AFMA, which includes a salary. Manager of the tropical tuna fisheries. No pecuniary interest in tropical tuna fisheries.
<b>Elissa Mastroianni</b>	Executive Officer	Employee of AFMA, which includes a salary. Senior Management Officer in the tropical tuna fisheries team. No pecuniary interest in tropical tuna fisheries.
<b>Robert Curtotti</b>	Economics Member	Employee of ABARES, involved in fisheries economic research related to the Eastern Tuna and Billfish Fishery. Has no pecuniary interest in the Australian tropical tuna fisheries.
<b>James Larcombe</b>	Scientific Member	Apology
<b>Ashley Williams</b>	Scientific Member	Employee of CSIRO, no pecuniary interest in Australian tropical tuna fisheries. Is the PI for the project on <i>Data Management, Assessment and implementation of Harvest Strategy for Australia's Tropical Tuna and Billfish Fisheries</i> .
<b>Rich Hillary</b>	Scientific Member	Employee of CSIRO, no pecuniary interest in Australian tropical tuna fisheries. Is the Co-investigator for the Scientific advice management of Tropical Tuna and Billfish Fisheries project Declared an interest in Agenda item 5 and was excluded from formalising any recommendations.
<b>Julian Pepperell</b>	Scientific Member	Independent fisheries research consultant and representative of the recreational fishing sector. Is involved in projects including monitoring and research on pelagic fish landed at game fishing tournaments, analysis of gamefish tagging data and assessing current data and alternate data collection methods relating to recreational catches of tropical tuna and billfishes.
<b>Ian Knuckey</b>	Scientific Member	Has a consulting company with interests in electronic reporting in the tuna fisheries and is a member on several other AFMA Committees. Has previously worked on a project on FADs in Tasmania and work relating to the Commonwealth resource sharing framework. Is working on a recreational and indigenous capacity building project with DAWE. Fishwell is involved in the FRDC IMOS (FishSOOP) project as well as EM review in the Gulf of Carpentaria trawl fishery.
<b>Gary Heilmann</b>	Industry Member	Director of a processing company, no longer holds ETBF boat or quota SFRs.
<b>Pavo Walker</b>	Industry Member	Owner of several ETBF boat SFRs and holds a Coral Sea permit and minor line permit.
<b>David Ellis</b>	Industry Invited Participant	Is currently the CEO of the industry association, Tuna Australia which includes a salary paid by industry. Is the PI on the following projects: <ul style="list-style-type: none"> <li>FRDC Project 2020-041. Improving the effectiveness, efficiency and safety of mitigation tools for protected species interactions in the Eastern Tuna and Billfish Fishery</li> <li>FRDC Project 2021-078. Improving the management of wildlife interactions in pelagic longline fisheries</li> </ul>

		<ul style="list-style-type: none"> <li>FRDC Project 2021-063. Future Proofing: Integrating community quota, product supply, product innovation and market diversification in Australia's Tropical Tuna Industry.</li> </ul>
<b>Terry Romaro</b>	Industry Invited Participant	Director of a company that owns Eastern Tuna and Billfish Fishery (ETBF) boat statutory fishing rights (SFRs), minor line SFRs, ETBF longline SFRs, Western Tuna and Billfish Fishery (WTBF) boat SFRs, WTBF longline SFRs, Western Skipjack Tuna Fishery (WSTF) purse seine permit, Small Pelagic Fishery (SPF) purse seine, mid-water trawl SFRs, and SPF quota SFRs. Shareholder of a company that owns shares in a proposal to fish with foreign longliners in the WTBF. Industry member on Southern Bluefin Tuna (SBT) and Tropical Tuna MAC, Invited participant for TTRAG, and industry representative at the Commission for the Conservation of SBT (CCSBT) & IOTC. Invited participant for squidRAG and squid SFR holder.
<b>Denham Parker</b>	Observer	Employed by the CSIRO and through the organisation has in the past, and/or may in the future, receive funding for research related to the fishery.
<b>Shayer Alam</b>	Observer	Employee of AFMA, which includes a salary. Senior Management Officer in the tropical tuna fisheries team. No pecuniary interest in tropical tuna fisheries.

## Attachment 2 – Adopted agenda

<b>Tropical Tuna Resource Assessment Group Meeting 42</b>		<b>24 September 2024</b>
<b>Teleconference</b> 9:00 – 17:00 hrs		
<b>DAY 1</b>		
<b>9:00-9:30</b>	<b>1. Preliminaries</b> 1.1 Welcome and apologies 1.2 Declaration of interests 1.3 Adoption of agenda 1.4 Actions arising from previous meetings – taken as read 1.5 Out of session correspondence – taken as read	AFMA/Chair
<b>9:30-9:45</b>	<b>2. Member Updates</b> By exception - members are invited to raise any questions regarding updates which were circulated ahead of the meeting.	Members
<b>9:45-10:30</b>	<b>3. WTBF multi-season TACC setting procedure</b>	AFMA
<b>10:30-10:45</b>	<b>BREAK</b>	
<b>10:45-12:15</b>	<b>4. ETBF fishery indicators</b> 3.1 ETBF Economic Indicators Report 3.2 Annual south-west Pacific catch data 3.3 ETBF Indicator Summary Report (including WCPFC stock status and outcomes)	AFMA/CSIRO
<b>12:15-13:15</b>	<b>5. WTBF fishery indicators</b> WTBF Indicator Summary Report (including IOTC stock status and outcomes)	AFMA/CSIRO
<b>13:15-13:45</b>	<b>BREAK (LUNCH)</b>	
<b>13:45-14:30</b>	<b>6. ETBF broadbill swordfish RBCC – modified harvest strategy</b> Provide TACC for the 2025 season derived through the application of the modified swordfish harvest strategy.	CSIRO
<b>14:30-15:15</b>	<b>7. Striped marlin constant catch indicators</b> Review indicators and provide TACC advice for striped marlin for the 2025 season.	AFMA
<b>15:15-16:45</b>	<b>8. TACC and overcatch/undercatch advice</b> 8.1 Overcatch and undercatch for all species 8.2 Finalise TACC advice for ETBF species 8.3 Finalise TACC advice for WTBF species	CSIRO
<b>16:45-17:00</b>	<b>9. Other Business</b> Members will be invited to raise any other business agreed by the Chair.	Chair

## Attachment 3 – Updated actions arising lists

**Table 1. Updated Action Items as at 19 September 2024**

Number	Action	Meeting Raised	Responsibility	Status at TTRAG 41
1.	TTRAG to be provided an update in the new year on the Management Procedure for big eye tuna.	TTRAG 35	ABARES/AFMA	<b>NOT YET ACTIONED:</b> To be considered at TTRAG43 in March 2025.
2.	TTRAG Executive Officer to investigate options for holding a teleconference meeting to allow the RAG to consider any additional information and further discuss draft ERA results.	TTRAG40	TTRAG EO	<b>ONGOING:</b> Email detailing advice on ERA deadlines, progress, and planned way forward provided on 17 June 2024. AFMA met with CSIRO on 11 September to discuss this further, and additional planning is underway. The RAG will be informed as plans progress.
3.	AFMA to work with RAG to arrange a time to discuss the Climate Risk Framework (CRF) more fully. TTRAG EO to provide links to the CRF document, once available online, to members.	TTRAG41	AFMA	<b>COMPLETE:</b> The Climate Adaptation Program team have organised a workshop for the ETBF to be held on 9 October 2024. Some RAG members have been invited as participants. The Climate Adaptation Program team will liaise directly with the RAG if and when further advice is required. TTRAG EO circulated the link on 18 September 2024.
4.	CSIRO to circulate the updated Climate and Ecosystem Status report to members when publicly available.	TTRAG41	CSIRO	<b>COMPLETE:</b> TTRAG EO circulated the updated report on 18 September 2024.
5.	TTRAG EO to provide information to ABARES regarding the logbook comments fields (as related to the ERA additional work).  ABARES to provide any updates to the ETBF advice (including inclusion of use of circle hooks) to the RAG out of session, and investigate the potential applicability of the ETBF results to the WTBF results (as related to the ERA additional work).	TTTRAG41	AFMA/ABARES	<b>COMPLETE:</b> Updated advice note was circulated on 18 September 2024.
	AFMA to investigate origin of and required review frequency of indicators for striped marlin (for TACC advice).	TTRAG41	AFMA	<b>COMPLETE:</b> TTMAC 26 specified what the yearly indicators would be, however there is no reason AFMA/the RAG could not ask whether this could be reviewed every three years. Note that the MAC and Commission have only considered tropical tunas for moving to three-year TACCs at this stage.

6.	AFMA to take questions regarding the 28-day reconciliation process to the MAC and suggest for consideration by the AFMA Economic Working Group	TTRAG41	AFMA	<b>COMPLETE:</b> On 27 August 2024 TTMAC discussed the 28-day reconciliation process as part of a discussion regarding changing overcatch and undercatch levels for yellowfin tuna. TTMAC have requested that a member of the AFMA Policy team attend the next meeting to provide advice on the 28-day reconciliation period. The TTRAG EO has also referred this to the Economic Working Group secretariat for consideration at their next meeting.
7.	AFMA to investigate the high level of discards for swordfish to see if there are any errors in the data contributing to the increase.	TTRAG41	AFMA	<b>SUGGEST REMOVAL</b> Subsequent follow-up between industry and CSIRO suggest the initial number was correct, so no further investigation required by AFMA.
8.	Grahame Williams to provide available tagging data to CSIRO, and liaise with New South Wales Department of Primary Industries to enable further data to be available to CSIRO.	TTRAG41	Grahame Williams and CSIRO	<b>NOT YET STARTED</b>
9.	TTRAG EO to circulate Recreational Fishing presentation to members.	TTRAG41	TTRAG EO	<b>COMPLETE:</b> Circulated on 18 September 2024.
10.	AFMA to follow up again on the request to have depredation included in e-logs and check whether any information/data on this has come through.	TTRAG41	AFMA	<b>NOT YET STARTED</b>
11.	AFMA to re-word the previous CKMR research project scope to include striped marlin and circulate the 2025-26 Annual Research Statement for agreement out of session.	TTRAG41	AFMA	<b>COMPLETE:</b> TTRAG EO circulated the re-worded proposal for agreement by the non-conflicted members on xx August 2024. Comments received were incorporated and included in the 2025-26 Annual Research Statement. The Final Annual Research Statement was circulated to members on 9 September 2024.
12.	AFMA to follow up whether it is possible to estimate discard sizes through EM review processes; and understand what would be required from the EM service provider to undertake additional research objectives, like this for example, and assess whether this should be incorporated into long term EM review protocols.	TTRAG41	AFMA	<b>NOT YET STARTED</b>



**Table 2. Updated Action Items relating to CPUE as at 4 July 2024**


Number	Item	Meeting Raised	Responsibility	TTRAG comments
1.	The RAG recommended using revised data each year and accepting minor changes for the catch summary tables. Any change greater than 1% will be flagged and brought to the attention of the RAG for discussion and advice.	TTRAG 38	CSIRO	<b>FOR ADVICE</b> Advice to be sought on ongoing priority of this item at TTRAG41.
2.	TTRAG discuss and provide advice at its meeting in March 2024, on priority need to undertake simulation testing of the CPUE standardisation. The RAG identified the following four CPUE refinement priorities: Priority refinement (1-3), further discussion needed for priority 4 simulation testing of CPUE. <ul style="list-style-type: none"> <li>1. Continue the implementation of metiers approach</li> <li>2. Move from area-based approach to explicit spatial approach</li> <li>3. Improve inclusion of oceanography covariates eg. Eddies</li> <li>4. Simulation test of the CPUE standardisation-To be discussed in March TTRAG during research gaps.</li> </ul>	TTRAG 38	CSIRO, TTRAG	<b>ONGOING – Paused:</b> TTRAG 41 agreed that including oceanography co-variates remains a priority, but confirmed that this work is paused while MSE testing of the swordfish harvest strategy is underway.
3.	Tuna Australia and CSIRO to investigate potential erroneous logbook reporting regarding 45 hooks between floats. Tuna Australia to follow up with operator if error is identified.	TTRAG 38	CSIRO, Tuna Australia	<b>ONGOING:</b> Tuna Australia contacted all ETBF operators regarding 45 hooks per basket. However, have not received any responses to the query. AFMA identify boat is recording 45 hooks between floats into e-logs and liaise with Tuna Australia, if required.
4.	AFMA to examine VMS data to check and verify sets reported on logbooks as having mainline lengths greater than 100km.	TTRAG 24	CSIRO, AFMA	<b>ONGOING:</b> At TTRAG 37 (March meeting 2023), CSIRO presented distributions of variables used in the CPUE standardisation to identify appropriate thresholds for outliers/erroneous entries. TTRAG 41 confirmed this was intended to be a once-off check to verify whether 1000km mainline lengths are accurate, to allow identification and agreement of a threshold.

## Attachment 4 – Out-of-session correspondence

**Table 1.** Correspondence provided to TTRAG members since TTRAG 41.

Date	Description
13 August 2024	Revised draft ETBF TACC setting procedure for tropical tunas circulated to members following feedback from TTRAG41; and providing an update a revised implementation plan for the ETBF and WTBF.
29 August 2024	Draft TTRAG41 meeting minutes provided to members and other meeting participants. Feedback and comment sought by Friday 13 September.
4 September	Draft TTRAG 42 agenda circulated. Written member updates sought. Confirmed calendar invite, including Microsoft Team link, for TTRAG42.
17 September	Final TTRAG41 meeting minutes circulated to members and other meeting participants, incorporating feedback provided during the comment period

## Attachment 5 – ETBF economic conditions presentation

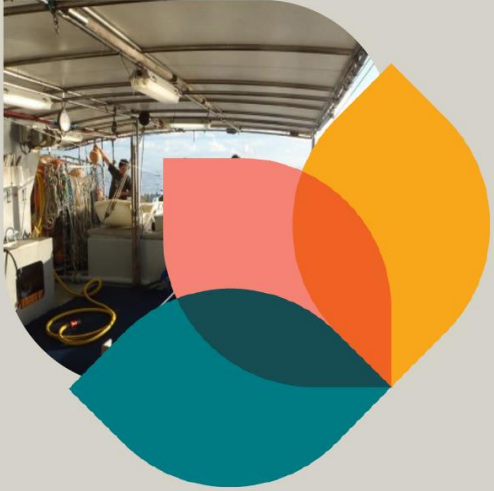


Australian Government  
Department of Agriculture,  
Fisheries and Forestry  
ABARES

# Economic conditions Eastern Tuna and Billfish Fishery

## Presentation to TTRAG42

Robert Curtotti  
Australian Bureau of Agricultural and Resource  
Economics and Sciences  
24 September 2024



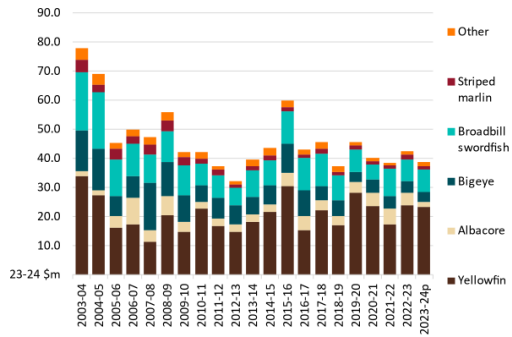
Research by the  
Australian Bureau of Agricultural and Resource Economics and Sciences

### Overview

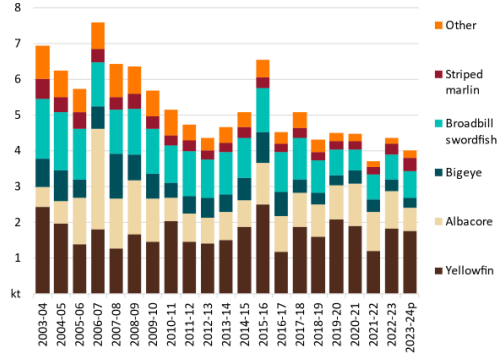
- GVP is estimated to have declined in 2023-24, to around \$39 million, following a decline in catch and value of albacore.
- Economic conditions peaked in 2015-16 and 2019-20 to 2020-21, but deteriorated from 2021-22 to 2023-24 as a result of rising fuel costs. Lower than average catch per unit effort and the weak Yen with respect to the Australian dollar have not helped.
- Divergent paths of Australian dollar exchange rates with US dollar and Japanese Yen since mid 2021 has favoured export products going to US market over Japan.
- Updating ECI requires timely data and validation testing
- The availability of SBT to ETBF fishers has improved profitability for those ETBF operators that operate across both fisheries

# Annual indicators

## Gross value of production



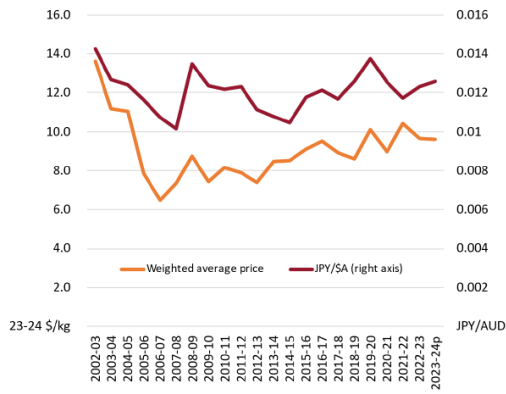
## Catch



Sources: ABARES, AFMA.  
Note: p preliminary

# Annual indicators

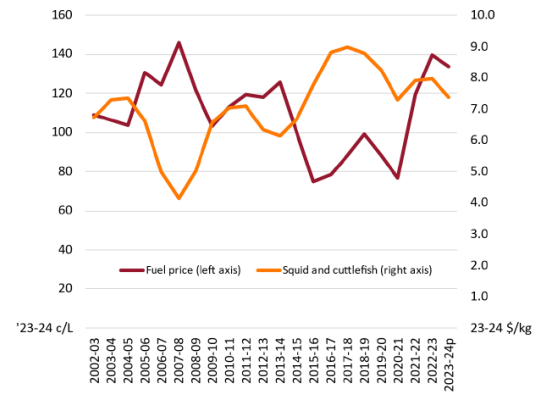
## Weighted average price of landed catch



Source: ABARES.

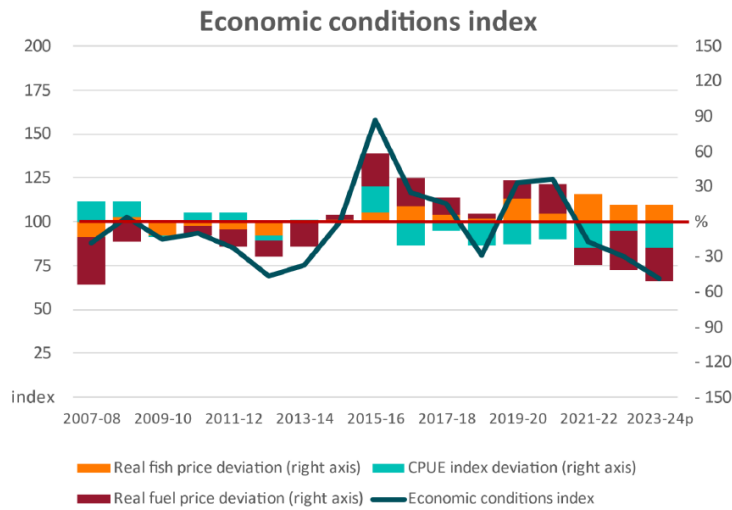
Note: GVP for 2023-24 is preliminary.  
GVPs will be updated later in 2024 for the 2023-24 financial year.

## Input prices (annual average)



Sources: ABARES and Australian Institute of Petroleum  
Note: Fuel price is diesel (ex. GST and excise).

## Economic conditions index (weighted)

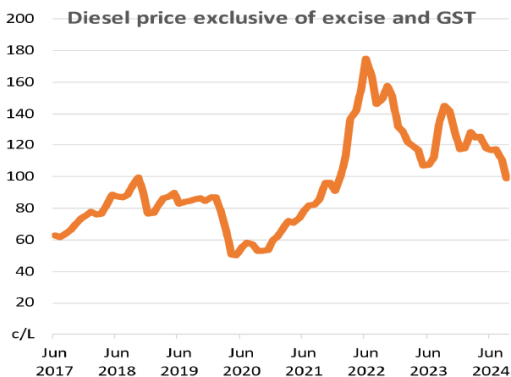


Notes: CPUE is catch-per-unit effort. 2008-09 to 2018-19 average = 100 for all indices. Economic conditions index reflects three component indices. Deviation (right axis) represents percentage difference of each component index from long-term average. ECI and deviations in real fish price and real fuel price are calculated using weighted GVP of yellowfin tuna, bigeye tuna, albacore, swordfish and striped marlin. Source: ABARES adapted from FFA 2018.

## Monthly indicators

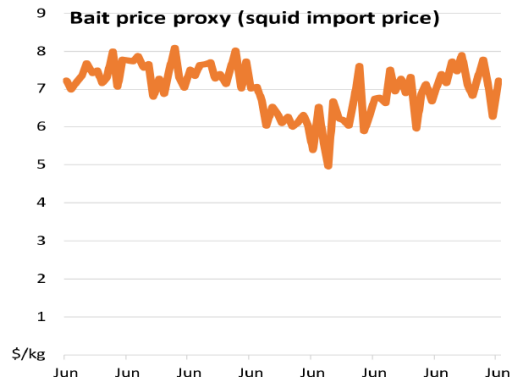
### Input prices (monthly price series)

#### Off road diesel



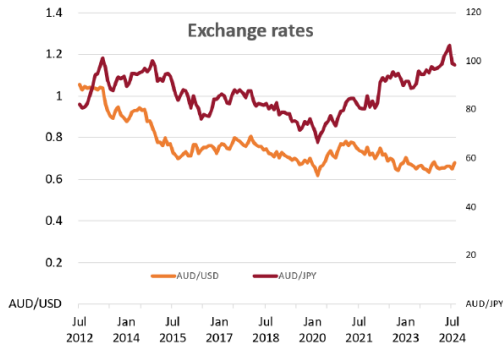
Notes: Nominal dollars. Fuel price (diesel) excludes GST and excise. Source: ABARES.

#### Bait price proxy (squid import price)

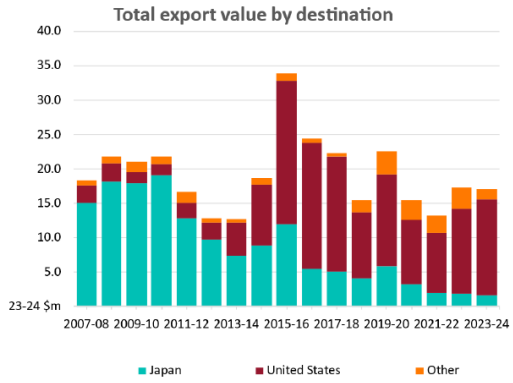


Note: Nominal dollars. Source: ABS, ABARES.

# Total export value from ETBF by main market

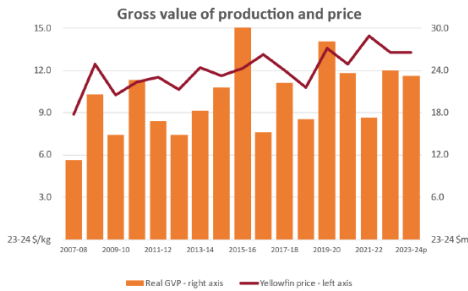
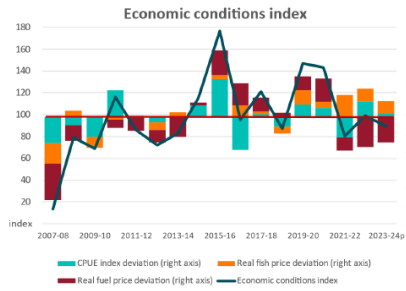


Source: RBA



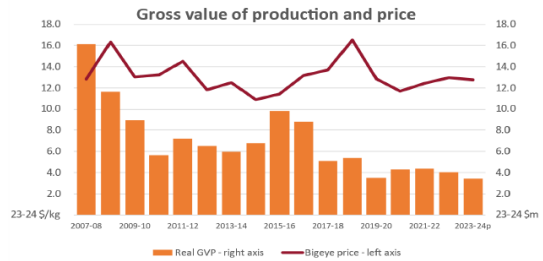
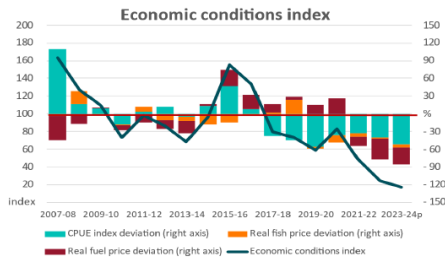
Sources: ABARES, ABS.  
Notes: Australian exports of yellowfin tuna, bigeye tuna, albacore and swordfish

# Yellowfin tuna



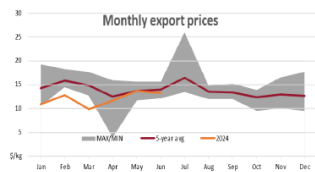
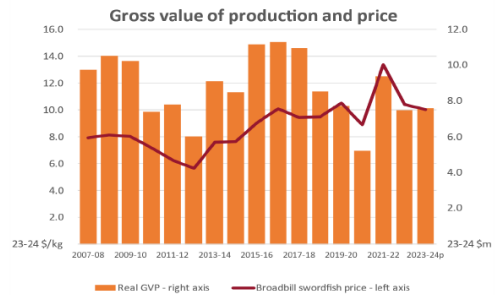
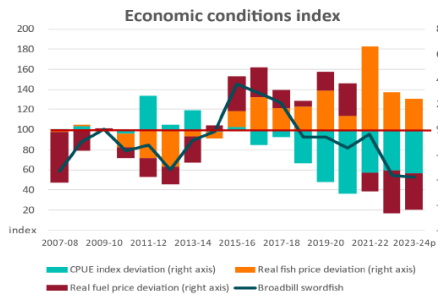
Notes: Economic conditions index (and component indices) 2008-09 to 2018-19 average = 100. Deviation represents percentage difference of each component index from long-term average. Monthly export prices based on fresh or chilled yellowfin tuna exports. Total export value by destination based on all yellowfin tuna exports from Australia. 99% of yellowfin tuna exports are as 'fresh or chilled'.  
Sources: ABARES, ABS, FFA.

# Bigeye tuna



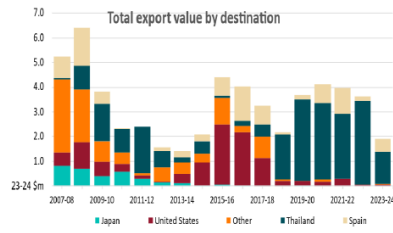
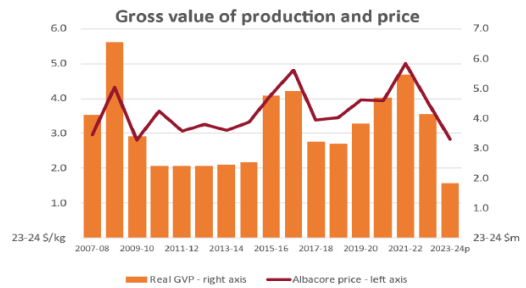
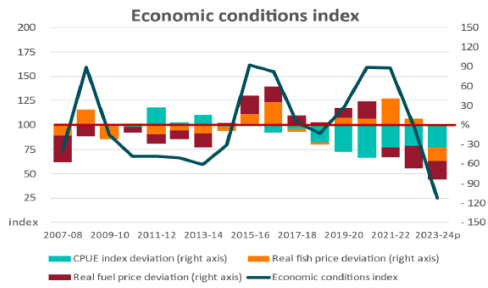
Notes: Economic conditions index (and component indices) 2008–09 to 2018–19 average = 100. Deviation represents percentage difference of each component index from long-term average. Monthly export prices based on fresh or chilled yellowfin tuna exports. Total export value by destination based on all yellowfin tuna exports from Australia. 99% of yellowfin tuna exports are as 'fresh or chilled'.  
Sources: ABARES, ABS, FFA.

# Swordfish



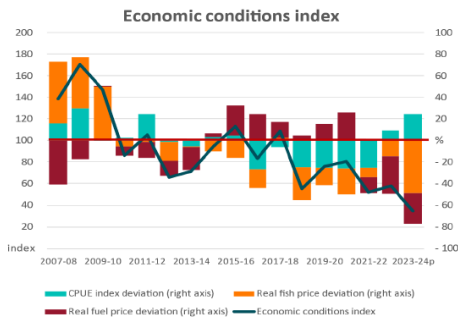
Notes: Economic conditions index (and component indices) 2008–09 to 2018–19 average = 100. Deviation represents percentage difference of each component index from long-term average. Monthly export prices based on fresh or chilled yellowfin tuna exports. Total export value by destination based on all yellowfin tuna exports from Australia. 99% of yellowfin tuna exports are as 'fresh or chilled'.  
Sources: ABARES, ABS, FFA.

# Albacore



Notes: Economic conditions index (and component indices) 2008–09 to 2018–19 average = 100. Deviation represents percentage difference of each component index from long-term average. Monthly export prices based on fresh or chilled yellowfin tuna exports. Total export value by destination based on all yellowfin tuna exports from Australia. 99% of yellowfin tuna exports are as 'fresh or chilled'.  
Sources: ABARES, ABS, FFA.

# Striped marlin

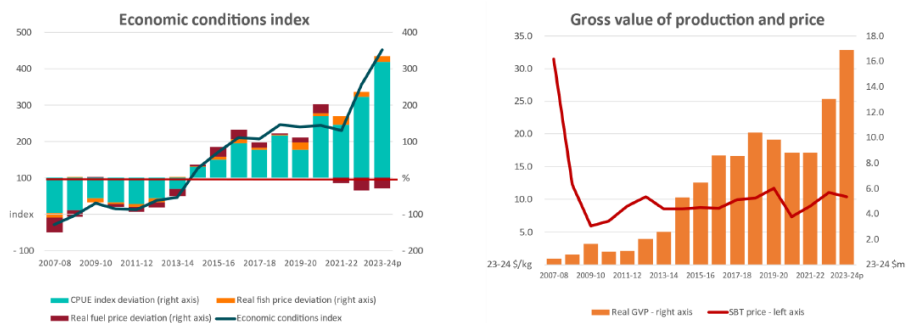


Notes: Economic conditions index (and component indices) 2008–09 to 2018–19 average = 100. Deviation represents percentage difference of each component index from long-term average. Export data not available for striped marlin. Gross value of production data for southern bluefin tuna are for fish landed outside South Australia.  
Sources: ABARES, ABS, FFA.



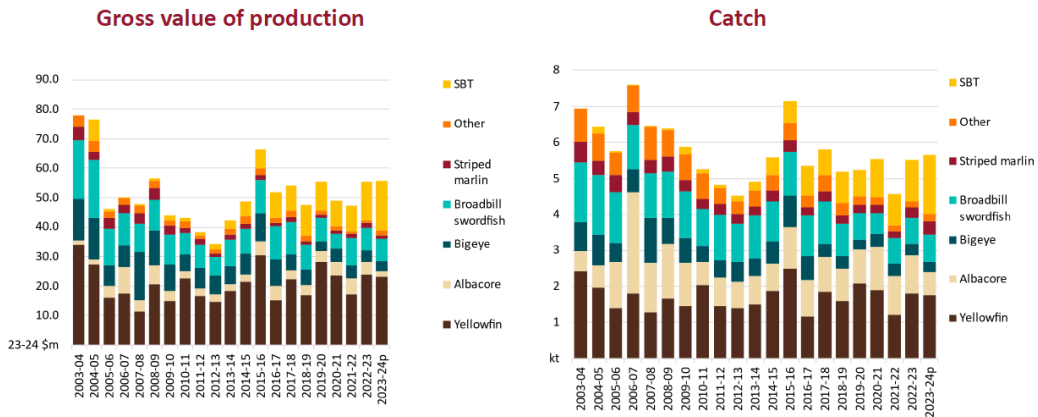
## Impact of long line SBT on economic conditions of the fishery

### Southern bluefin tuna (excluding SA farm input)

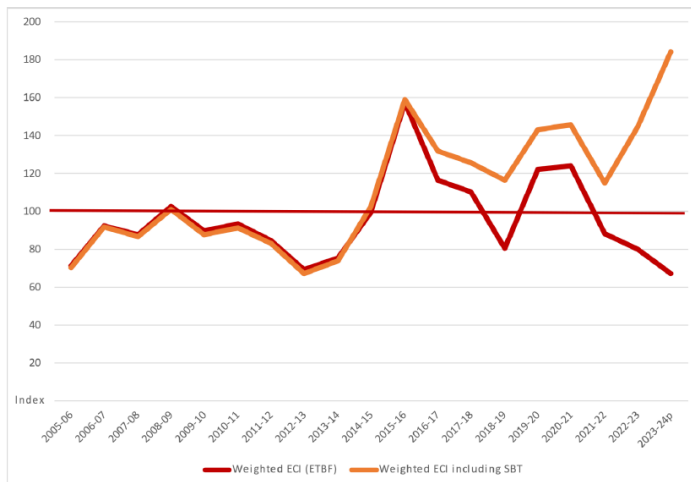


Notes: Economic conditions index (and component indices) 2008–09 to 2018–19 average = 100. Deviation represents percentage difference of each component index from long-term average. Export data not available for striped marlin. Gross value of production data for southern bluefin tuna are for fish landed outside South Australia.  
Sources: ABARES, ABS, FFA.

## GVP and catch of combined ETBF and SBT long line (excluding SA farm input)



## Impact on ECI of Southern bluefin tuna (excluding SA farm input)



Notes: Economic conditions index (and component indices) 2008–09 to 2018–19 average = 100. Deviation represents percentage difference of each component index from long-term average. Export data not available for striped marlin. Gross value of production data for southern bluefin tuna are for fish landed outside South Australia.  
Sources: ABARES, ABS, FFA.

## Next steps

- Updating ECI requires timely data (i.e. CPUE) and validation testing (ABARES economic monitoring of the fishery)
- 2023–24 GVP determination for ETBF will be available in coming months but preliminary estimates of GVP alongside other indicators show below average economic conditions for the fishery.

Questions?



Australian Government  
Department of Agriculture,  
Fisheries and Forestry  
ABARES

[agriculture.gov.au/abares](http://agriculture.gov.au/abares)



Research by the  
Australian Bureau of Agricultural and Resource Economics and Sciences

## Attachment 6 – Southwest Pacific catch presentation

# Annual catch by fleet and fishing method in the southwest Pacific: 2024 update

Ashley Williams and Laura Tremblay-Boyer  
Presentation to TTRAG 42—24 September 2024

ENVIRONMENT  
[www.csiro.au](http://www.csiro.au)



## Overview

- Annual update of catches in southwest Pacific
- ETBF target species are highly-mobile, fished by multiple nations and managed at the regional level by the Western and Central Pacific Fisheries Commission
- Review of trends in overall captures and catch contribution by the ETBF in the southwest Pacific
- Period: 2006 to 2023 (calendar years)



## Spatial layout of key regions



Southwest Pacific catches: Slide 3 of 14



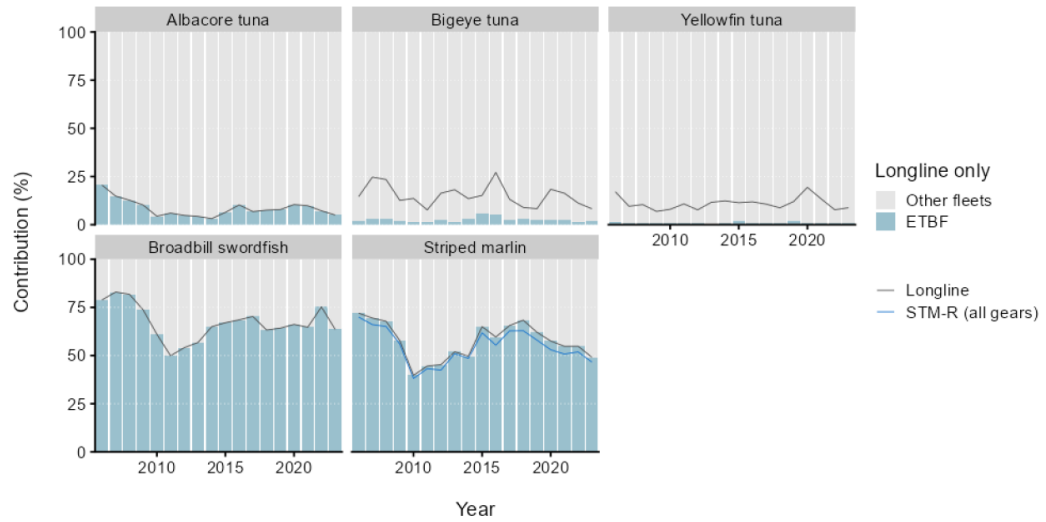
## Approach

- Request catch data by species for the three regions from SPC
- Because of discrepancies between catch estimates (under investigation), use SPC-derived AU longline catch as ETBF catch
- For each species, ETBF contribution is percentage of AU longline (commercial) in the total catch for each region
- For STM, totals also include estimates of AU+NZ recreational catches
- Statistics presented for contribution to longline total catch and all gear total catch

Southwest Pacific catches: Slide 4 of 14



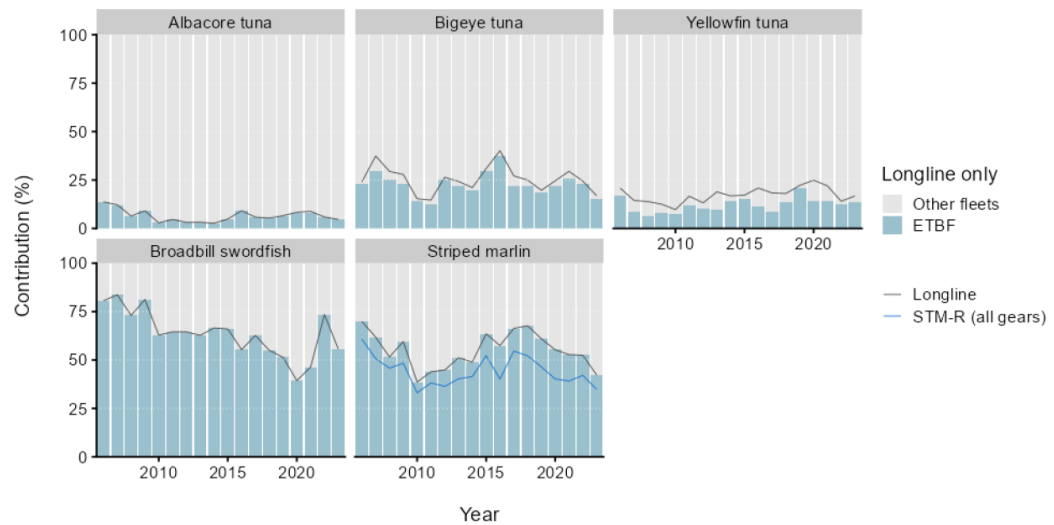
## Region 1



Southwest Pacific catches: Slide 5 of 14



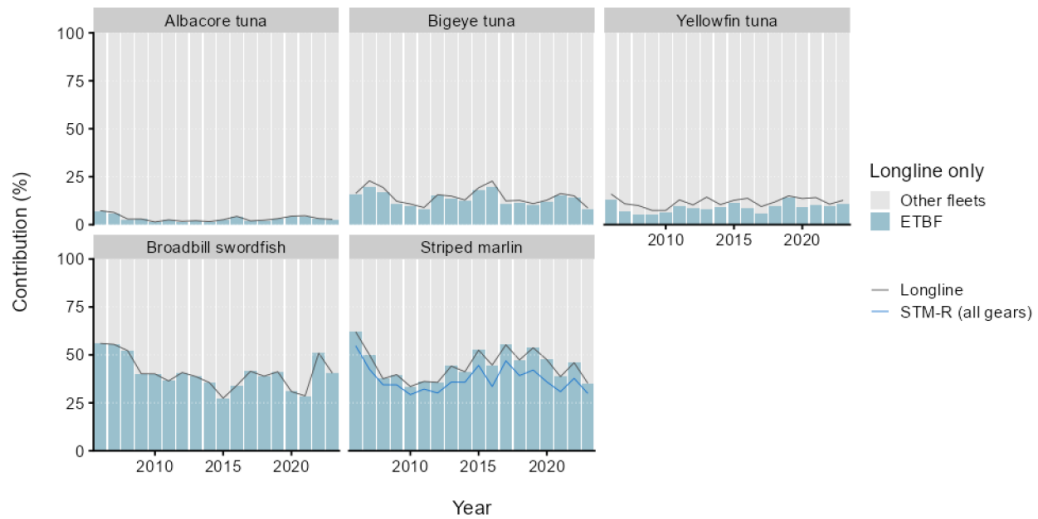
## Region 5



Southwest Pacific catches: Slide 6 of 14



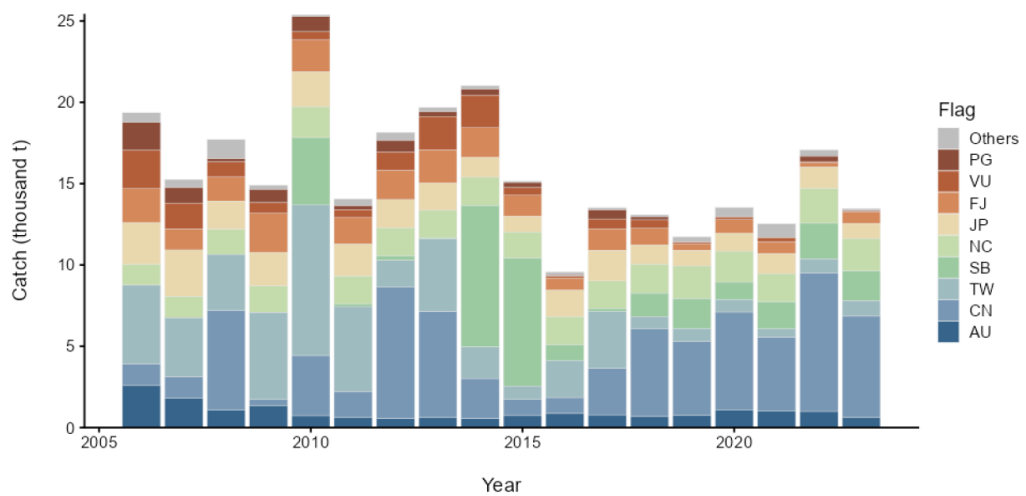
## Australia-New Zealand region



Southwest Pacific catches: Slide 7 of 14



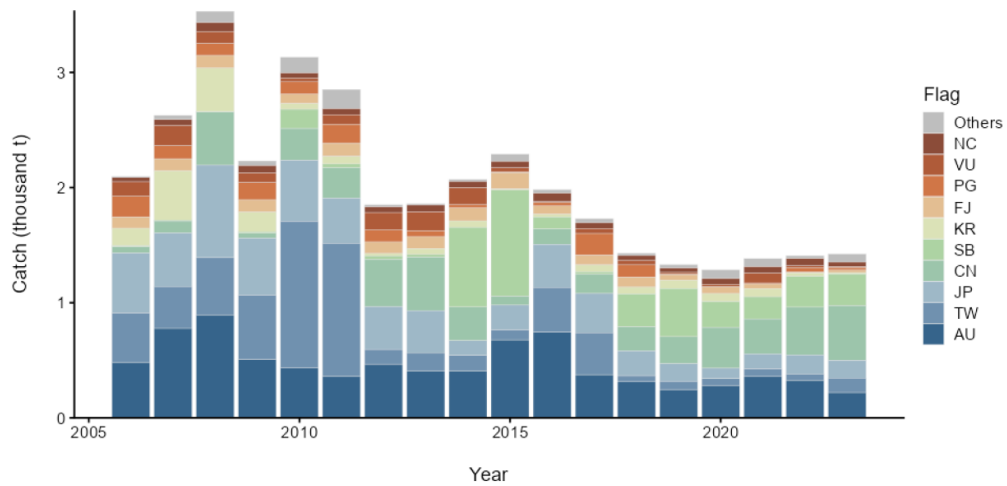
## Albacore - Region 5



Southwest Pacific catches: Slide 8 of 14



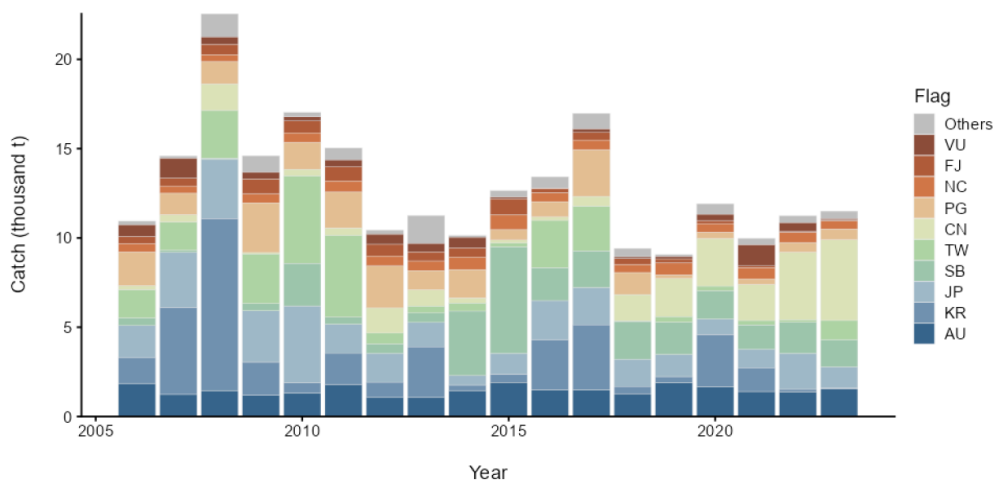
## Bigeye tuna - Region 5



Southwest Pacific catches: Slide 9 of 14



## Yellowfin tuna - Region 5

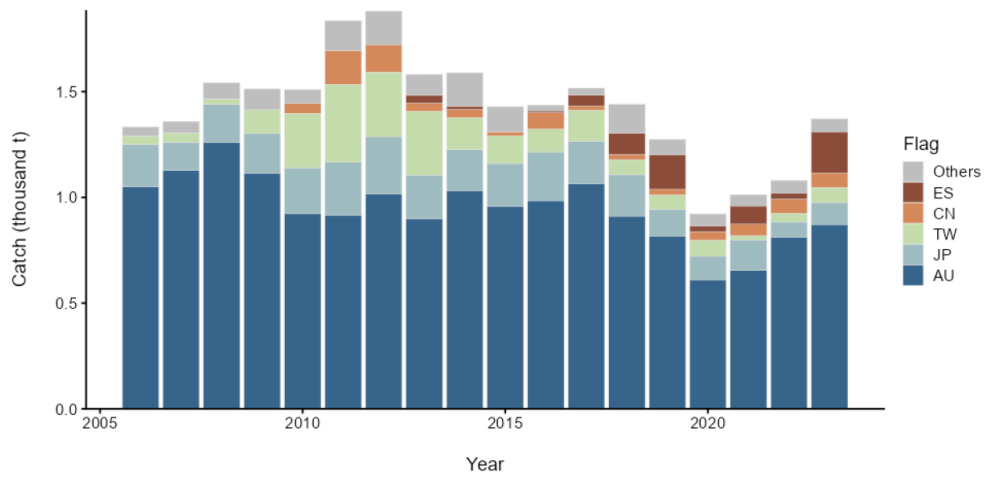


Southwest Pacific catches: Slide 10 of 14





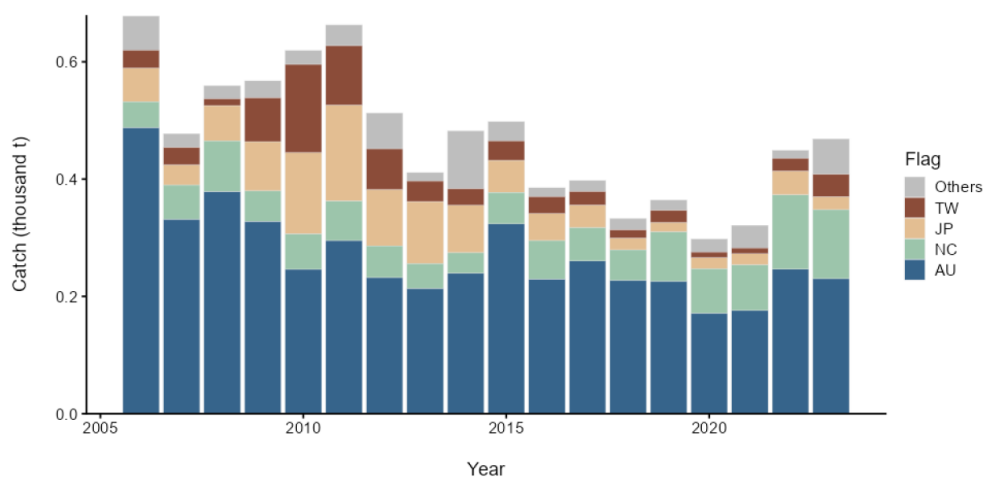
## Broadbill swordfish - Region 1



Southwest Pacific catches: Slide 11 of 14



## Striped marlin - Region 1



Southwest Pacific catches: Slide 12 of 14



# Questions?

WTBF indicators: Slide 14 of 15



# Thank You

**CSIRO ENVIRONMENT**

Rich Hillary

t +61 3 6232 5452

e rich.hillary@csiro.au

w CSIRO Environment website

**ENVIRONMENT**  
[www.csiro.au](http://www.csiro.au)



# Summary of status indicators for ETBF target species: 2024 update

Ashley Williams

Presentation to TTRAG 42—24 September 2024

ENVIRONMENT  
[www.csiro.au](http://www.csiro.au)

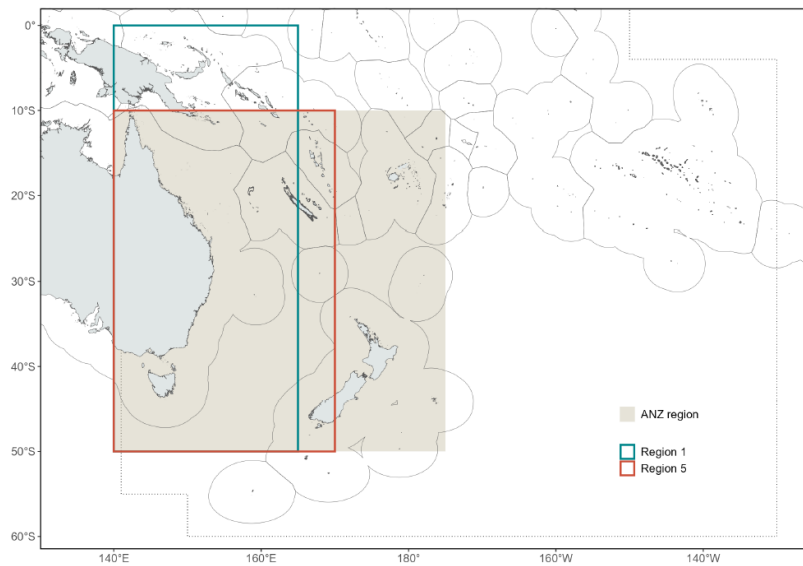


## Overview

- Annual update of regional indicators
- Review trends in catch, size and cpue for each of the 5 key species
- Review stock status from WCPFC assessments



## Spatial layout of key regions

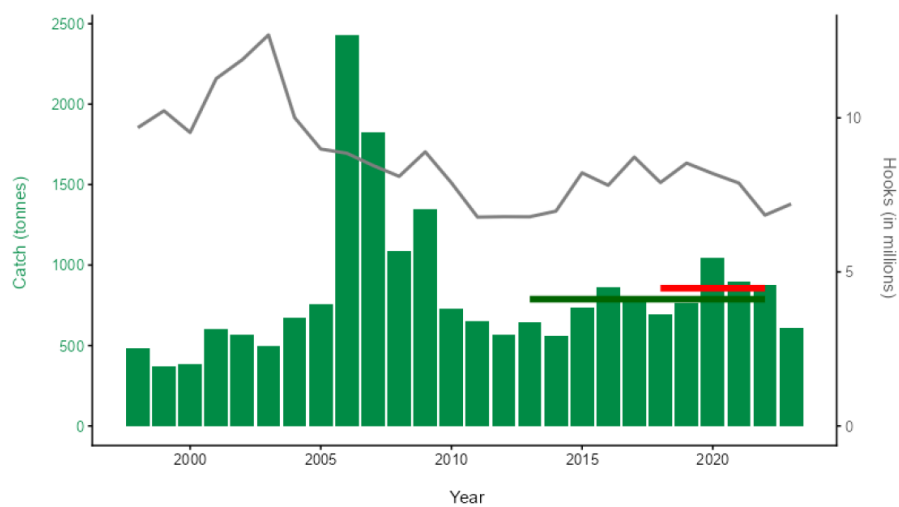


ETBF indicators: Slide 3 of 21



## Albacore - catch

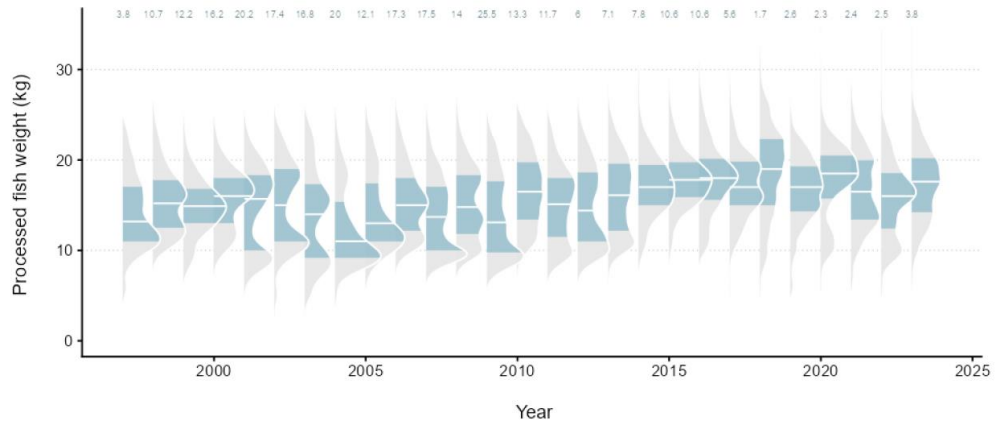
4.7% of catch in Region 5 in 2023



ETBF indicators: Slide 4 of 21



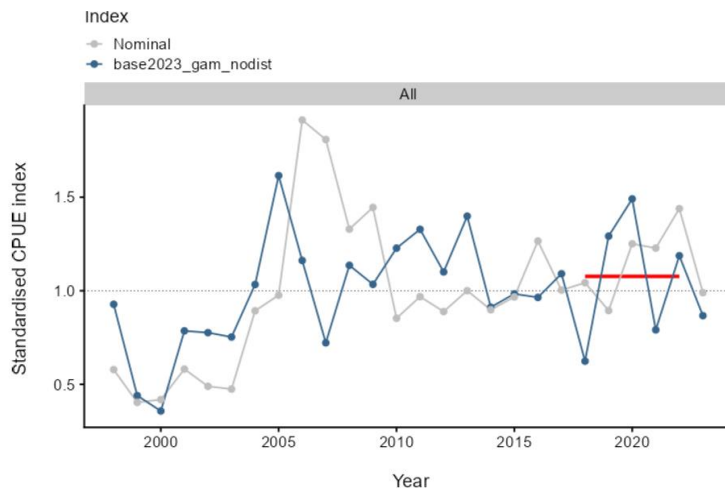
## Albacore - size



ETBF indicators: Slide 5 of 21



## Albacore - CPUE



ETBF indicators: Slide 6 of 21



## Bigeye tuna - catch

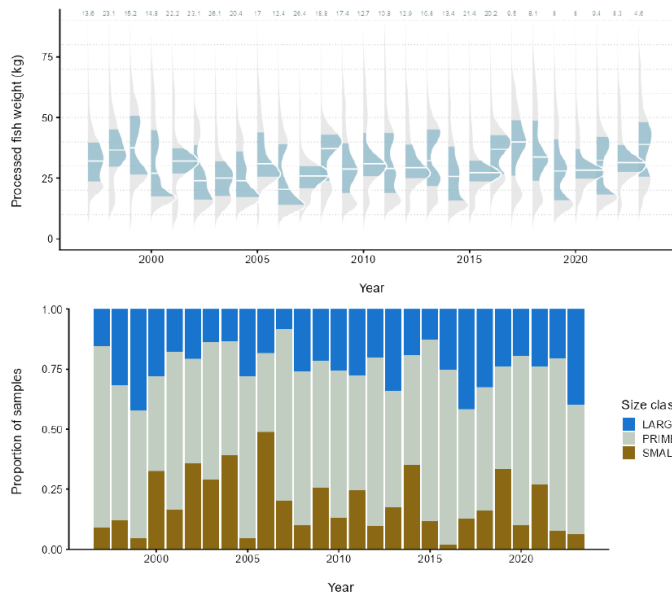
15.4% of catch in Region 5 in 2023



ETBF indicators: Slide 7 of 21



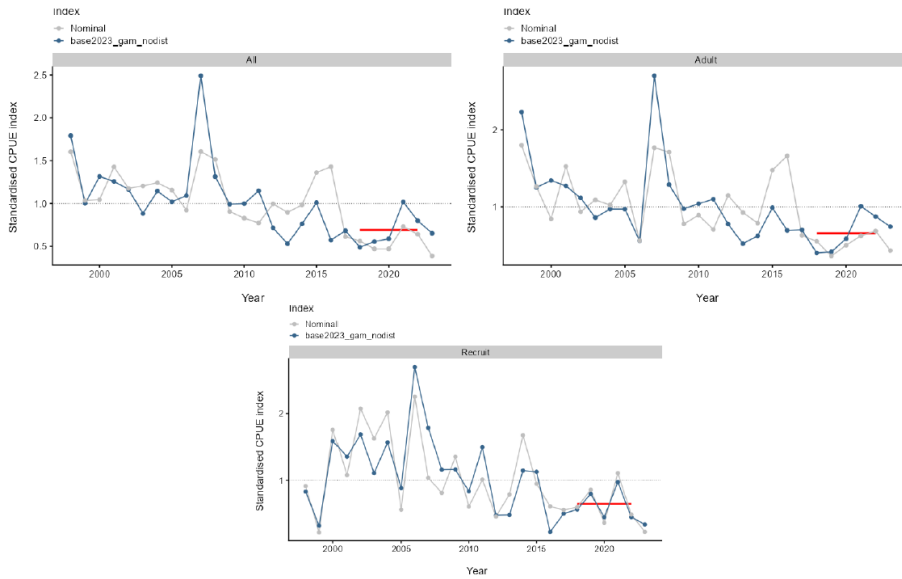
## Bigeye tuna - size



ETBF indicators: Slide 8 of 21



## Bigeye tuna - CPUE

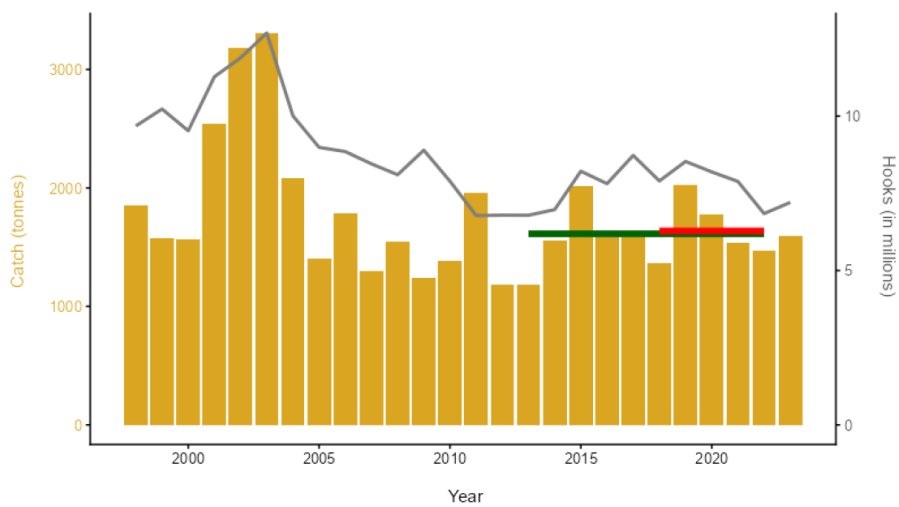


ETBF indicators: Slide 9 of 21



## Yellowfin tuna - catch

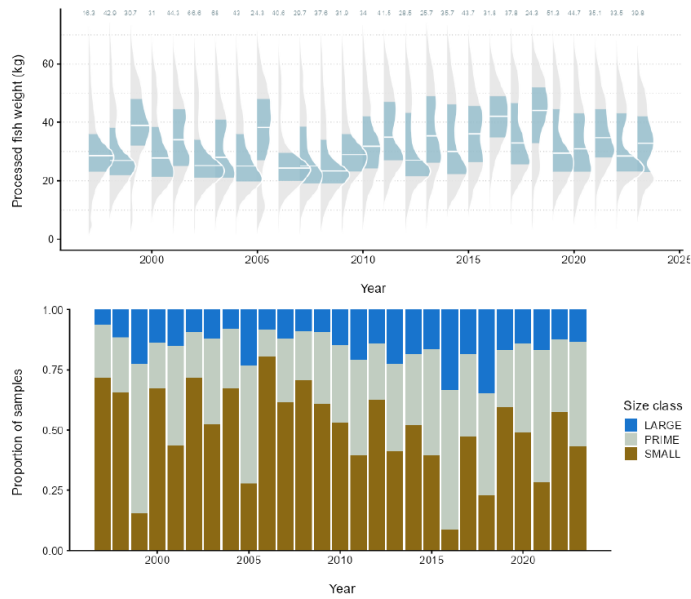
13.3% of catch in Region 5 in 2023



ETBF indicators: Slide 10 of 21



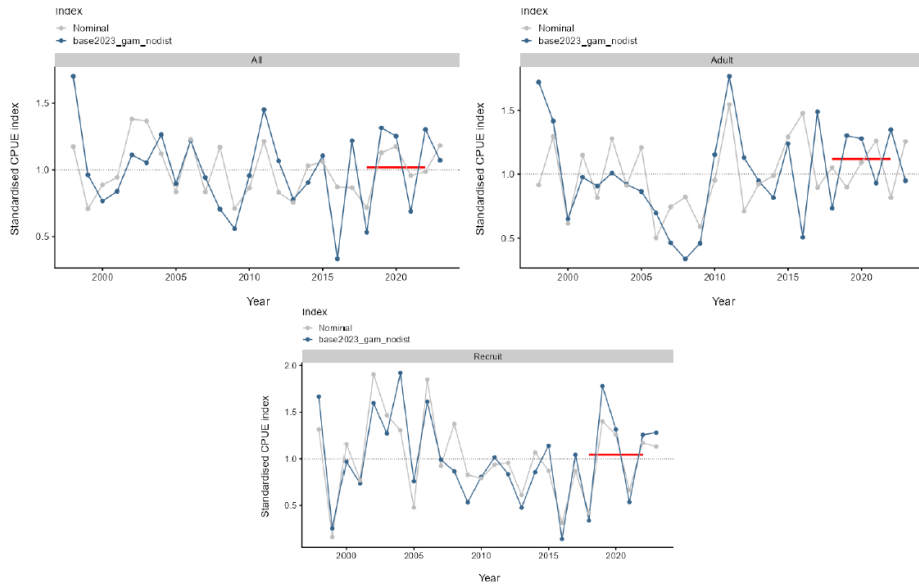
## Yellowfin tuna - size



ETBF indicators: Slide 11 of 21



## Yellowfin tuna - CPUE



ETBF indicators: Slide 12 of 21





## Broadbill swordfish - catch

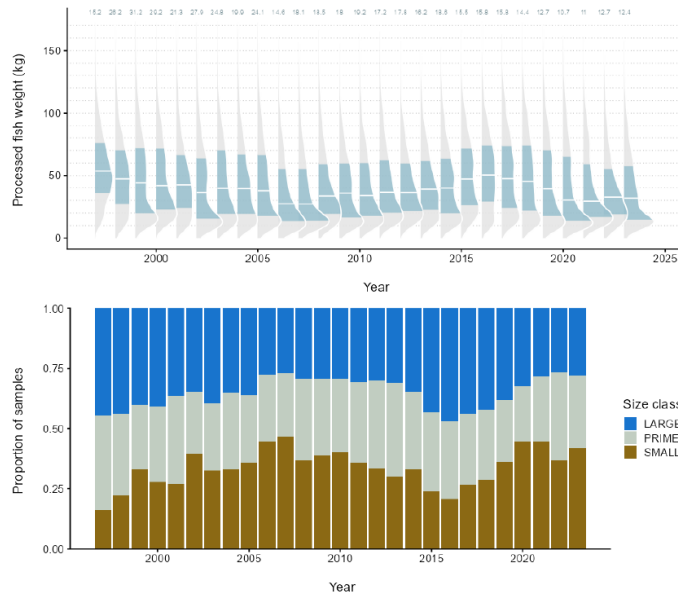
63.6% of catch in Region 1 in 2023



ETBF indicators: Slide 13 of 21



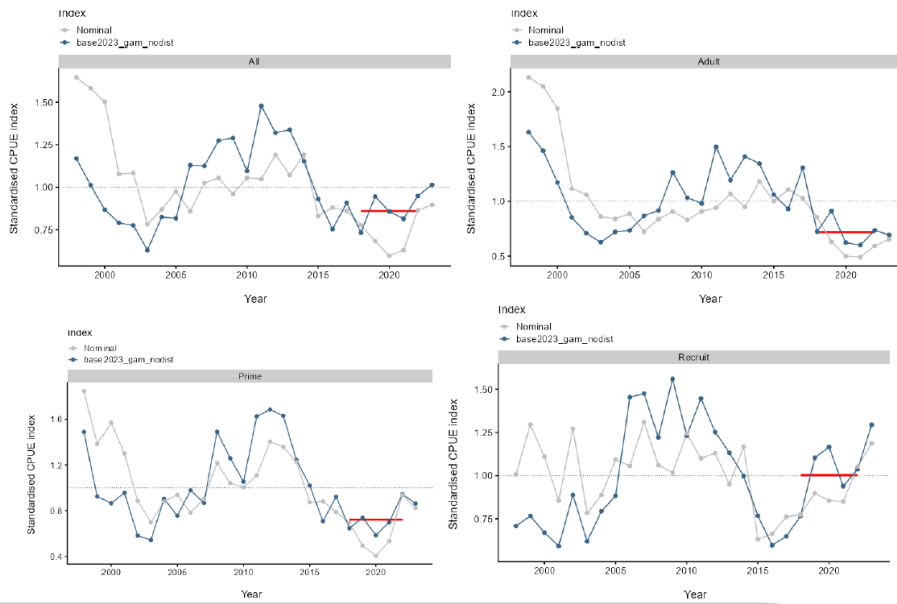
## Broadbill swordfish - size



ETBF indicators: Slide 14 of 21



## Broadbill swordfish - CPUE



ETBF indicators: Slide 15 of 21



## Striped marlin - catch

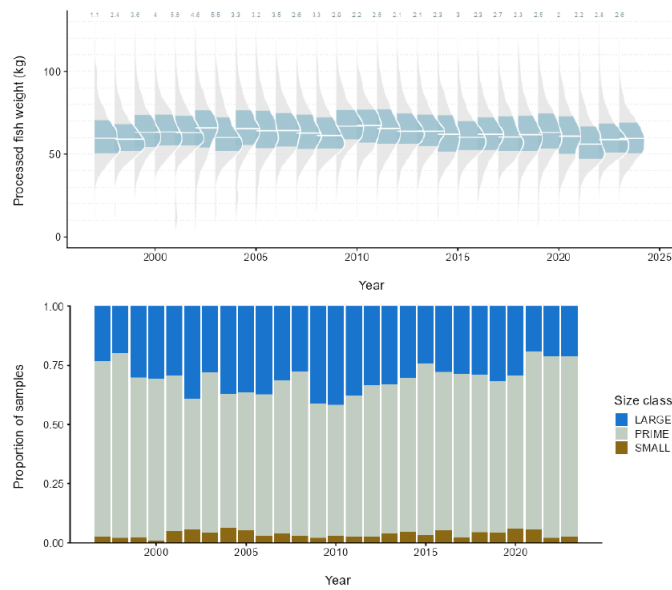
49.1% of catch in Region 1 in 2023



ETBF indicators: Slide 16 of 21



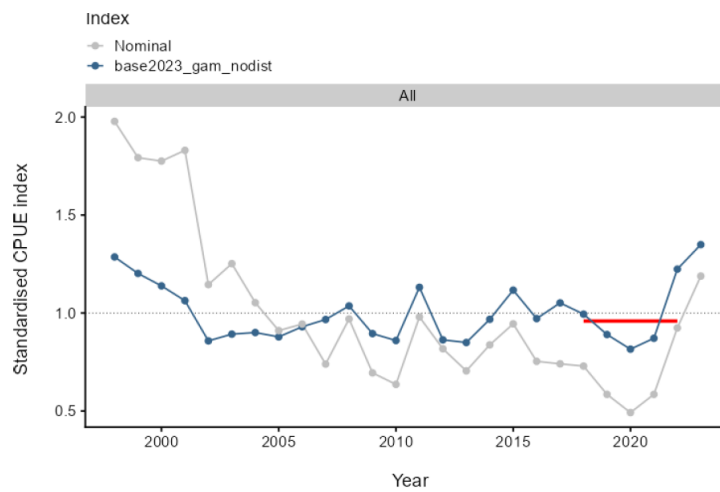
## Striped marlin - size



ETBF indicators: Slide 17 of 21



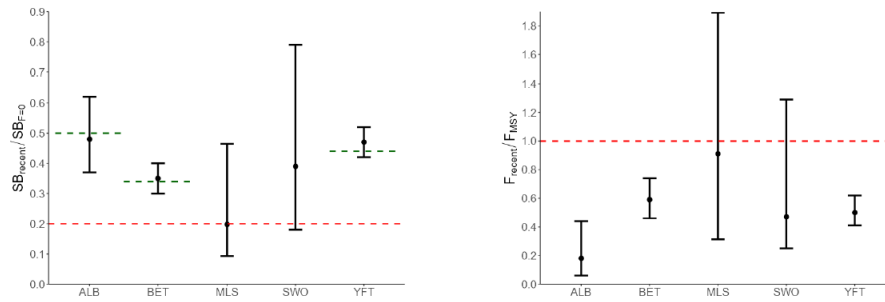
## Striped marlin - CPUE



ETBF indicators: Slide 18 of 21



## WCPFC Stock assessment summary



Species	Year	Depletion ( $SB_{recent}/SB_{F=0}$ )	Fishing Mortality ( $F_{recent}/F_{MSY}$ )
Albacore tuna	2024	0.48	0.18
Bigeye tuna	2023	0.35	0.59
Yellowfin tuna	2023	0.47	0.50
Swordfish	2021	0.39	0.47
Striped marlin	2019	0.20	0.91

ETBF indicators: Slide 19 of 21



## Questions?

WTBF indicators: Slide 14 of 15



# Thank You

## CSIRO ENVIRONMENT

Rich Hillary

t +61 3 6232 5452

e rich.hillary@csiro.au

w CSIRO Environment website

ENVIRONMENT  
[www.csiro.au](http://www.csiro.au)



## Attachment 8 – WTBF indicators presentation

# Summary of status indicators for WTBF target species: 2024 update

Ashley Williams

Presentation to TTRAG 42—24 September 2024

ENVIRONMENT  
[www.csiro.au](http://www.csiro.au)



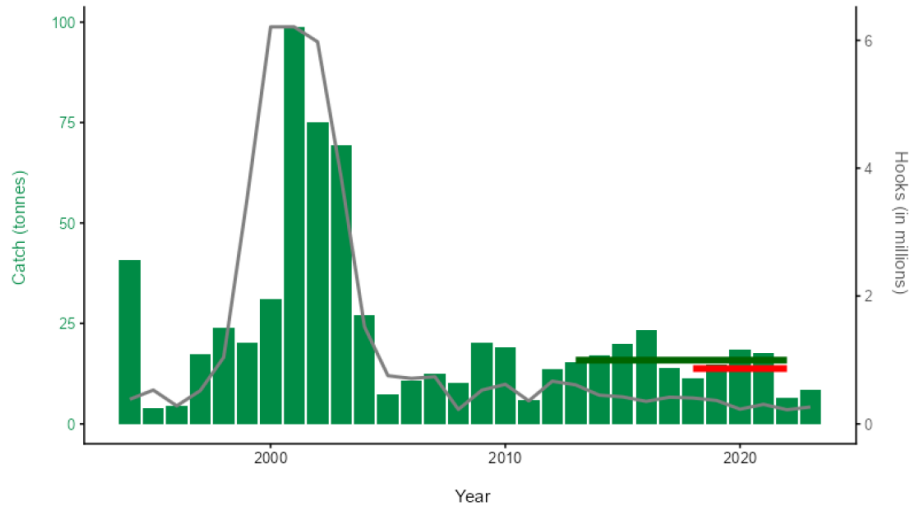
## Overview

- Annual update of regional indicators
- Review trends in catch, and nominal cpue for each of the 5 key species
- Review stock status from IOTC assessments



## Albacore - catch

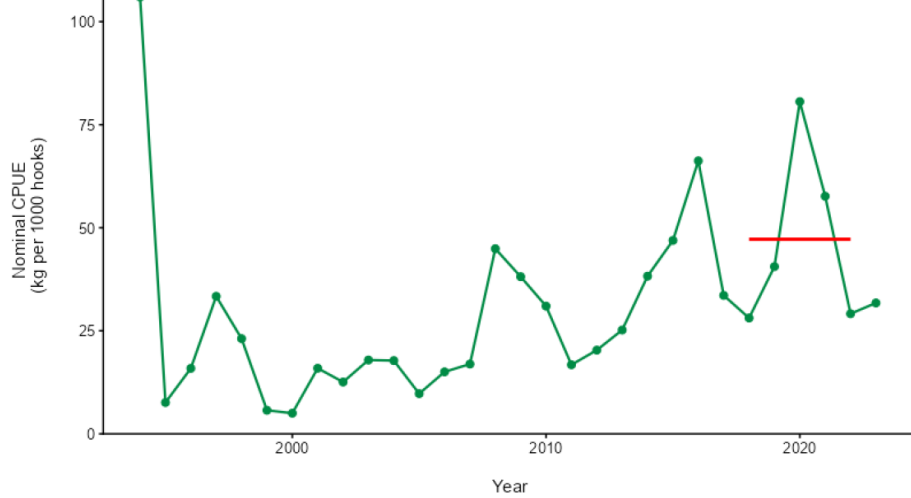
0.03% of IOTC catch in 2022



WTBF indicators: Slide 3 of 15



## Albacore - nominal CPUE

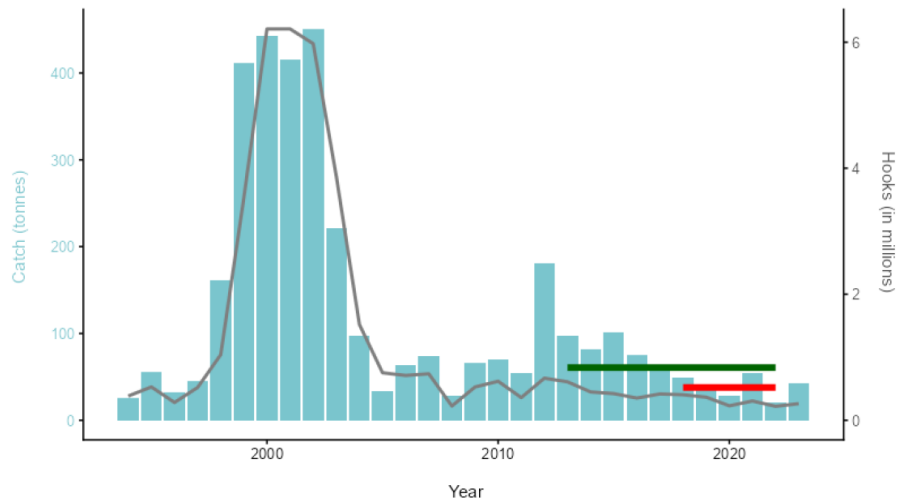


WTBF indicators: Slide 4 of 15



## Bigeye tuna - catch

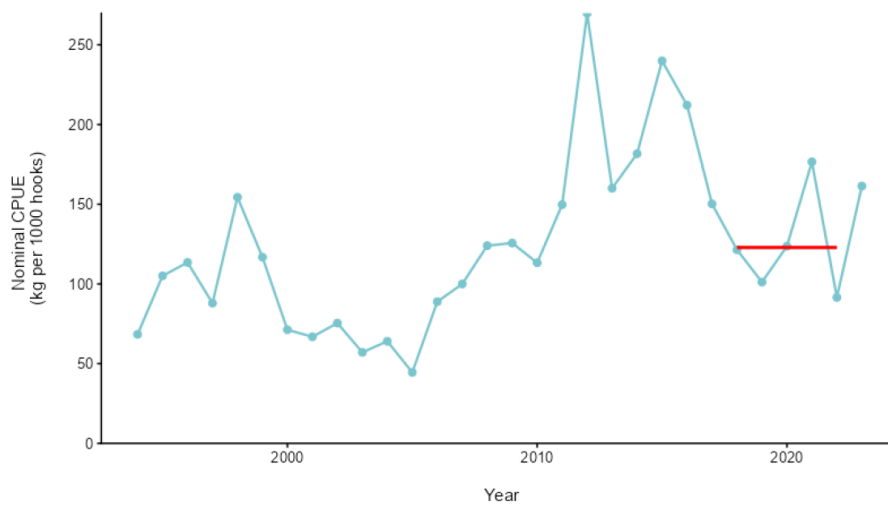
0.02% of IOTC catch in 2022



WTBF indicators: Slide 5 of 15



## Bigeye tuna - nominal CPUE



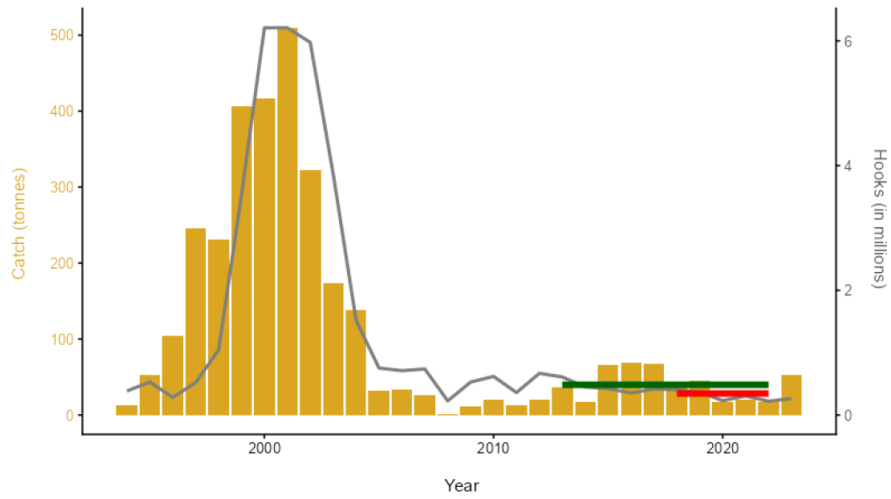
WTBF indicators: Slide 6 of 15





## Yellowfin tuna - catch

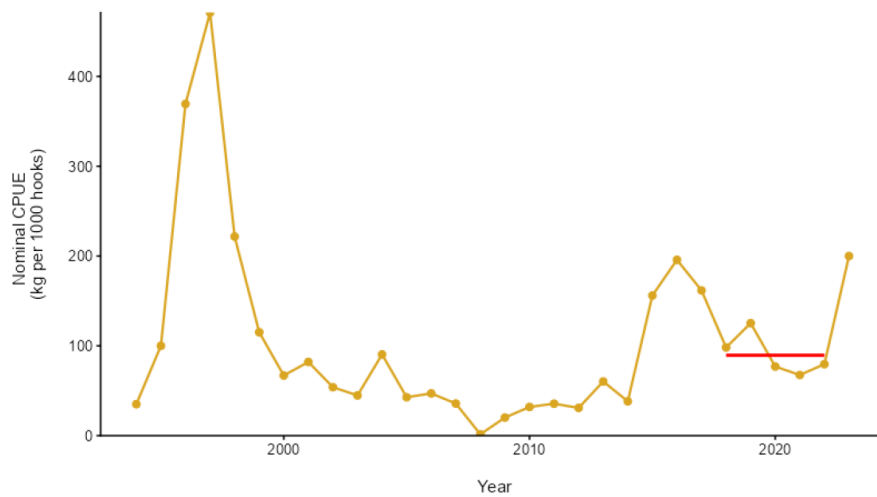
0.004% of IOTC catch in 2022



WTBF indicators: Slide 7 of 15



## Yellowfin tuna - nominal CPUE

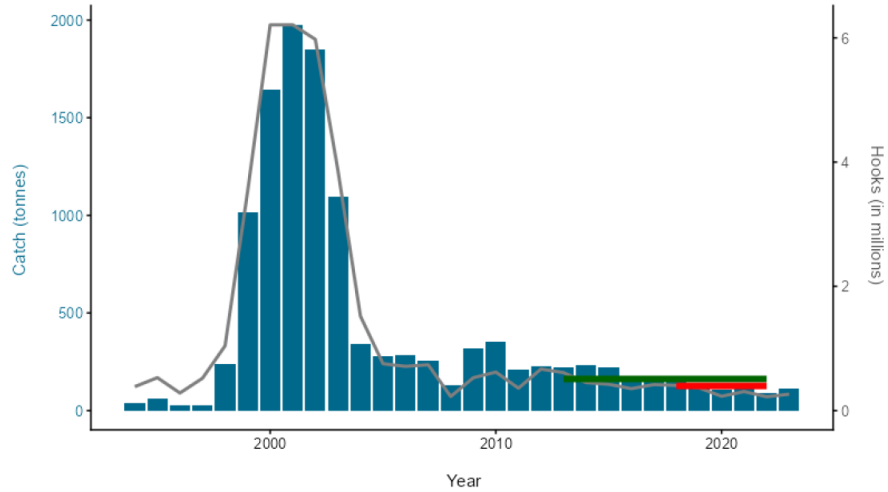


WTBF indicators: Slide 8 of 15



## Broadbill swordfish - catch

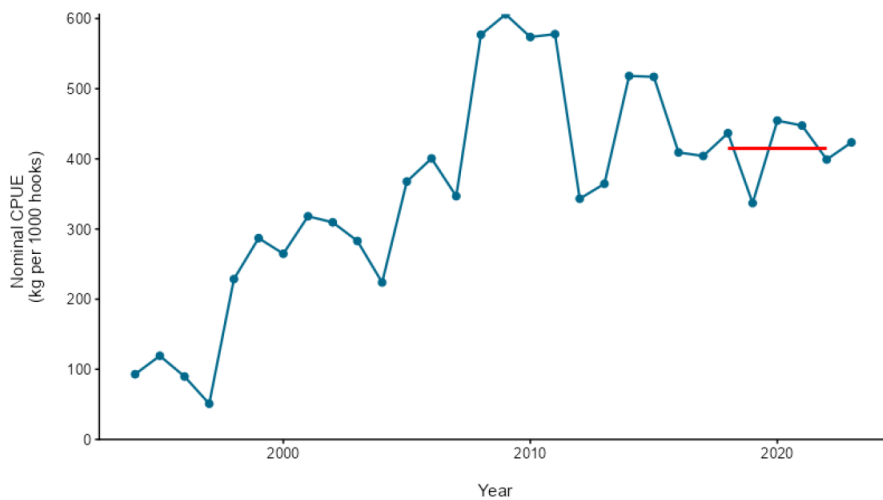
0.36% of IOTC catch in 2022



WTBF indicators: Slide 9 of 15



## Broadbill swordfish - nominal CPUE

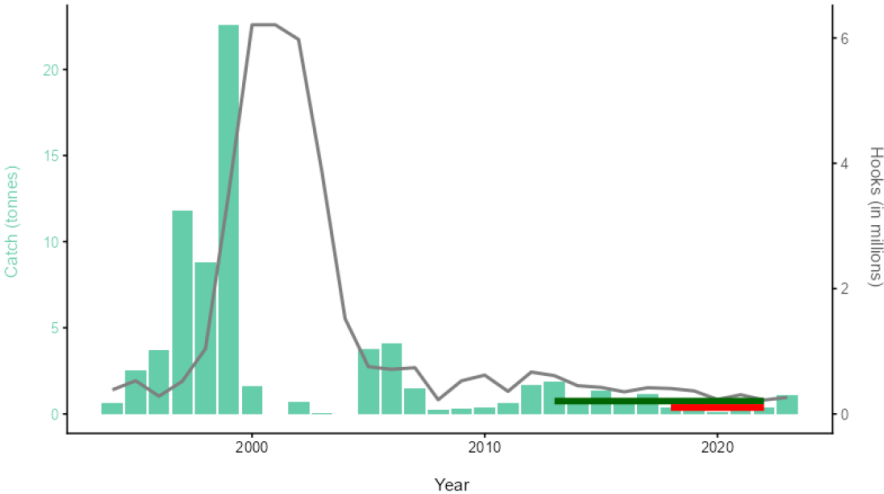


WTBF indicators: Slide 10 of 15

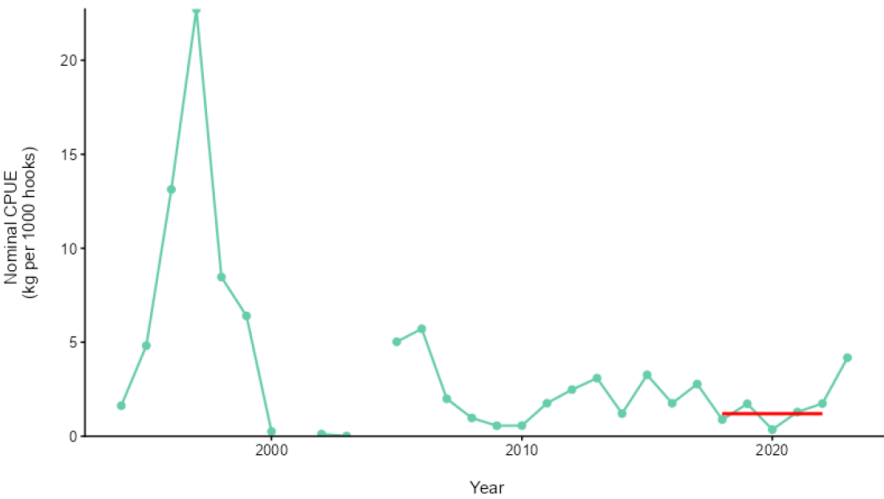


# Striped marlin - catch

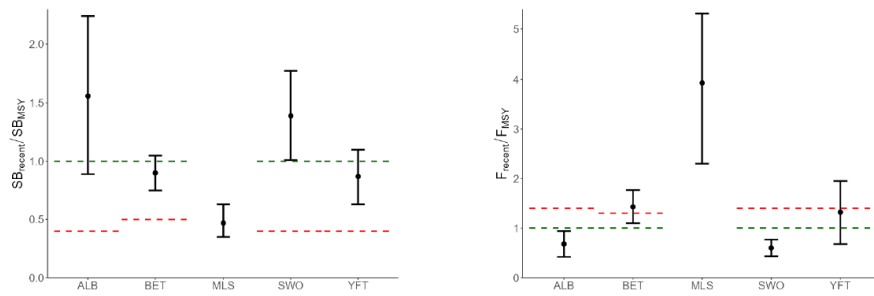
0.03% of IOTC catch in 2022



# Striped marlin - nominal CPUE



## IOTC Stock assessment summary



Species	Year	Depletion ( $SB_{recent}/SB_{MSY}$ )	Fishing Mortality ( $F_{recent}/F_{MSY}$ )
Albacore tuna	2022	1.56	0.68
Bigeye tuna*	2022	0.90	1.43
Yellowfin tuna	2021	0.87	1.32
Swordfish	2023	1.39	0.60
Striped marlin	2021	0.47	3.93

\*BET MP set a TAC 80,583 t for 2024 and 2025. BET MP will be run again in 2024.

WTBF indicators: Slide 13 of 15



## Questions?

WTBF indicators: Slide 14 of 15



# Thank You

## CSIRO ENVIRONMENT

Rich Hillary

t +61 3 6232 5452

e rich.hillary@csiro.au

w CSIRO Environment website

ENVIRONMENT  
[www.csiro.au](http://www.csiro.au)



## Attachment 9 - Swordfish RBCC presentation

# Calculation of broadbill swordfish Recommended Biological Commercial Catch in 2024

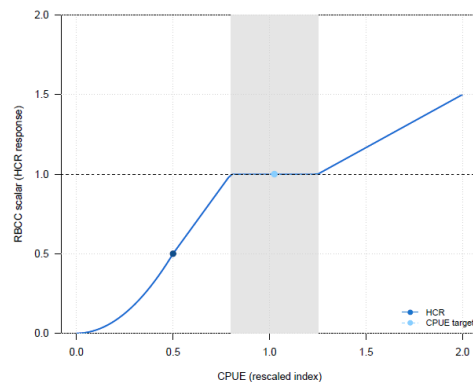
Rich Hillary, Laura Tremblay-Boyer and Ashley Williams  
Presentation to TTRAG 42—24 September 2024

ENVIRONMENT  
www.csiro.au



## Overview

- Harvest strategy for broadbill swordfish adopted in 2020
- Generates RBCC from scalar applied to recent TAC based on the ratio between recent (4 years average) CPUE compared to target period (2012-2015)
- RBCC changes are not allowed to exceed more than 10% in either direction



## Modified harvest strategy

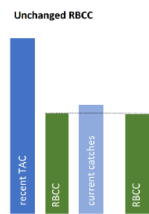
- Adopted in 2022 to account for undercatch (below TAC) since 2019
- Original HS run as is, then:
  - If  $RBCC > \text{recent TAC}$ , original HS applies
  - If  $RBCC < \text{recent catches}$ , original HS applies
  - If  $RBCC < \text{recent TAC}$  but  $> \text{recent catch}$ :
    - \* Next year's under catch is predicted based on difference between  $RBCC_{orig}$  and last year's catches
    - \* Predicted under catch is added back to  $RBCC$  to produce  $RBCC_{modif}$
    - \* But,  $RBCC_{modif}$  is not allowed to exceed recent TAC

ETBF fishery characterisation: Slide 3 of 8

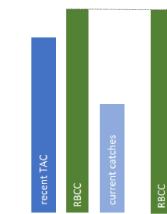


## Illustration

Unchanged RBCC

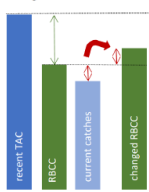


If the  $RBCC < \text{current catches}$ , the RBCC stays unchanged

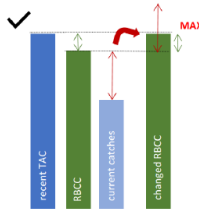


If the  $RBCC > \text{recent TAC}$ , the RBCC stays unchanged

Changed RBCC



If the  $RBCC < \text{recent TAC}$  BUT greater than current catches, the predicted undercatch is added to the RBCC...



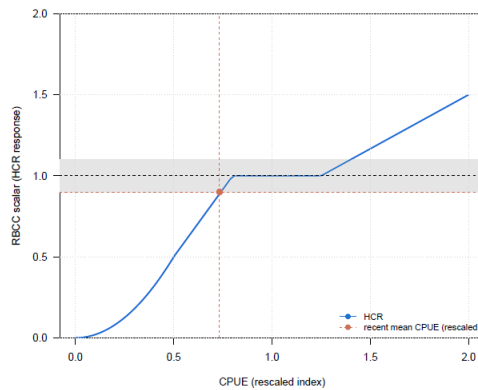
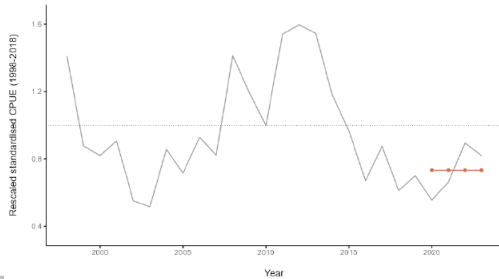
... up to a maximum value of the recent TAC

ETBF fishery characterisation: Slide 4 of 8



## This year's update to the RBCC

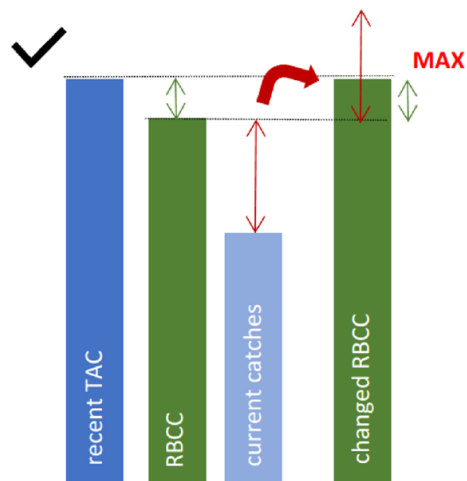
- Input to Harvest Control Rule is standardised CPUE time-series accepted at TTRAG 41
- Recent CPUE average = 0.733<sub>(2020-2023)</sub>
- RBCC scalar = 0.888 ( $\Delta < 10\%$ )
- Recent TAC = 1047t
- $RBCC_{orig} = 942t$



## Application of modified HS

Recent TAC = 1047t  
 $RBCC_{orig} = 942t$   
 Recent catch = 792t  
 Predicted undercatch =  $150t_{(942-792)}$

$RBCC_{modif} =$   
 $\min(TAC_{recent}, 942 + 150) =$   
**1047t, i.e. no change**





## Summary

- Based on the modified HS, 2025 RBCC for broadbill swordfish is 1047t
- No exceptional circumstances were identified

ETBF fishery characterisation: Slide 7 of 8



# Thank You

## CSIRO ENVIRONMENT

Rich Hillary

t +61 3 6232 5452

e rich.hillary@csiro.au

w CSIRO Environment website

ENVIRONMENT  
[www.csiro.au](http://www.csiro.au)

