Current tropical tuna management at IATTC

3rd IATTC Tropical Tuna MSE Workshop, *by videoconference*, December 08-09, 2022

Topics

- Antigua Convention: Objective
- Other management objectives
- Tropical Tuna fishery management in the IATTC
  - Harvest Control Rule and Reference Points
  - Implementation of Harvest Control Rule
  - Other management measures
- Management Strategies
- Conclusions

Antigua Convention: Objective

ARTICLE II. OBJECTIVE

The objective of this Convention is to ensure the long-term conservation and sustainable use of the fish stocks covered by this Convention, in accordance with the relevant rules of international law.

… ensure the long-term **conservation** and **sustainable use** of the fish…

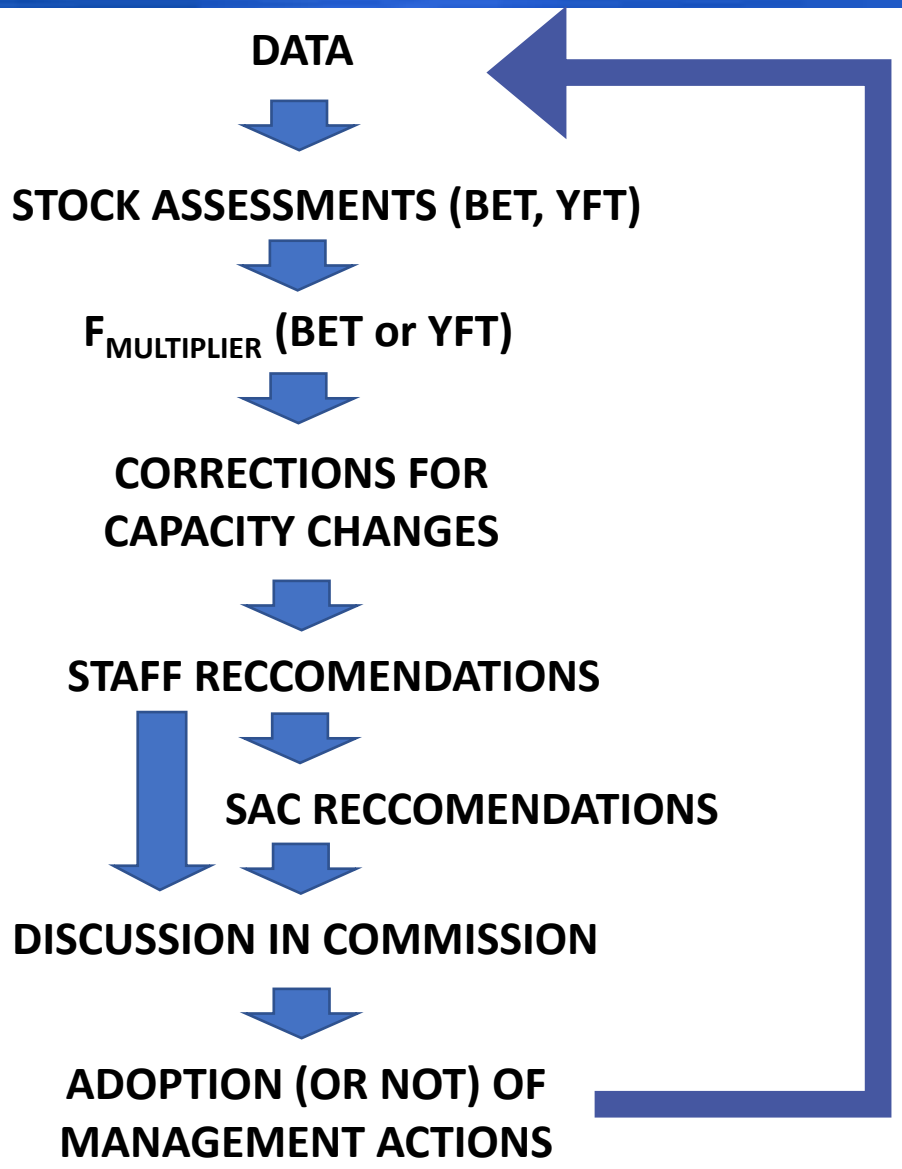
- Maintain or restore the populations of harvested species at levels of abundance which can produce the **Maximum Sustainable Yield** (MSY)
- Apply the **Precautionary Approach**:

"…be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures."

Other objectives (explicit or implicit)

- Maintain healthy fishing resources and viable industries
- Objectives:
  - Vary among stakeholders and countries
  - May change over time
  - May be in conflict

Tropical Tuna management in the IATTC



Harvest Control Rule Implementation

- Limited entry for new purse-sein vessels
- Fishing Capacity should remain constant
- Recommendations of IATTC Scientific Staff to implement Harvest Control Rule using a time closure of the fishery (vessels can choose among two periods)
- Duration of closure calculated using an *F* multiplier from the stock assessments of YFT and BET, adjusted given changes in fleet capacity.

Harvest Control Rule Implementation

- “Corralito”: spatial closure (Sep. 29 to Oct. 29)
- Equivalent to 3 closure days for all EPO (SAC-05-16)

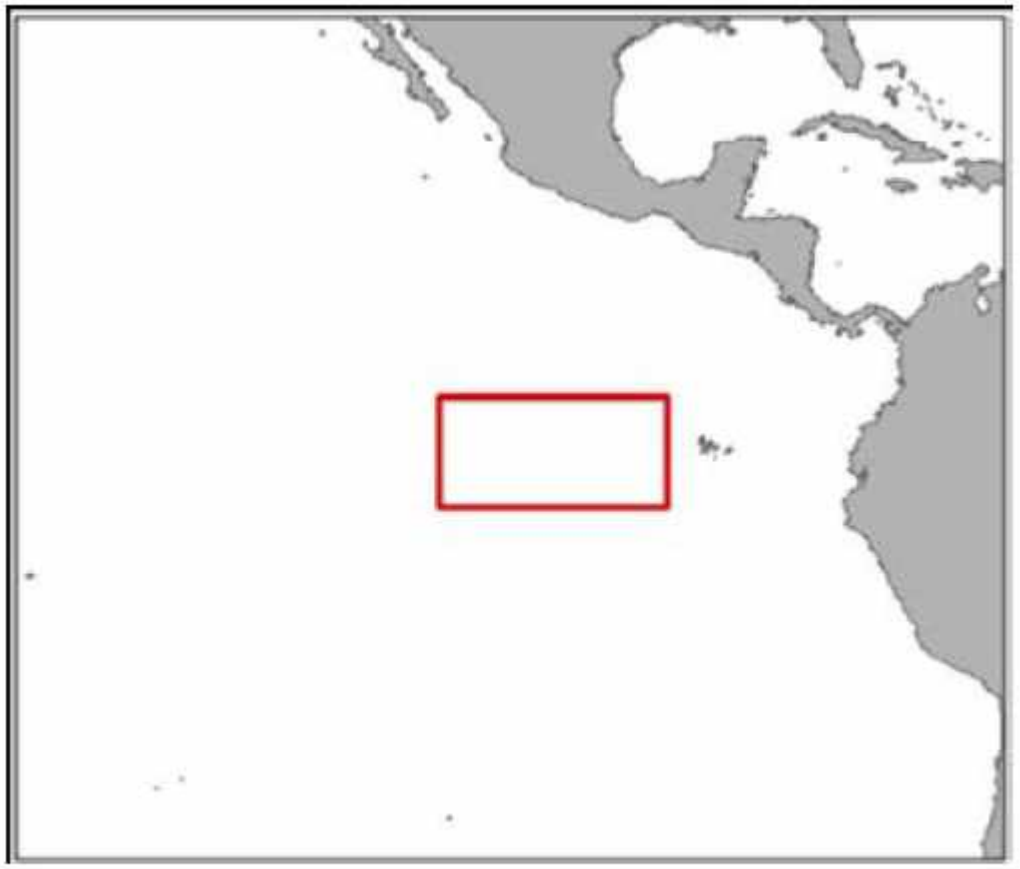


Figure 1. Closure area

Harvest Control Rule Implementation

- Longline catch quotas by CPC

Other measures in place

- Fishing on FADs
- Total retention

Measures not adopted or adopted but changed over time

Some examples only, list is not complete

- Combination of temporal and spatial closures for purse seine (e.g. 2003, 2004)
- Individual vessel limits on purse seine BET catches (e.g. 2003)
- Additional closure days for the floating object fishery catching BET (e.g. 2006)
- Purse-seine catch limits (adopted, then back to closures 5 months later, 2017)
- Limits on the number of floating object and unassociated sets (2018, 2019)
- Limits on the number of floating object sets + ind. vessel daily active FADs (2020)

Relationship with Management Strategies

Management Strategies are the combination of pre-agreed data, specific analyses applied to those data and the harvest control rule used to determine management measures based on the results of those analyses (Punt et al 2016)

- In the IATTC context, data and analyses change as new research is conducted
- Management measures (e.g. closures) and other recommended management actions can change in their adoption (or not) or their implementation over time.
- Therefore, although there are elements of a Management Strategy in the IATTC, those elements could be defined and improved towards a more defined strategy, along with alternatives.

Tropical Tuna management in the IATTC

DATA

STOCK ASSESSMENTS (BET, YFT)

1. Problems with the BET assessment (2018)
2. Problems with the YFT assessment (2019)

$F_{MULTIPLIER}$ (BET or YFT)

CORRECTIONS FOR CAPACITY CHANGES

STAFF RECCOMENDATIONS

SAC RECCOMENDATIONS

DISCUSSION IN COMMISSION

ADOPTION (OR NOT) OF MANAGEMENT ACTIONS

Tropical Tuna management in the IATTC

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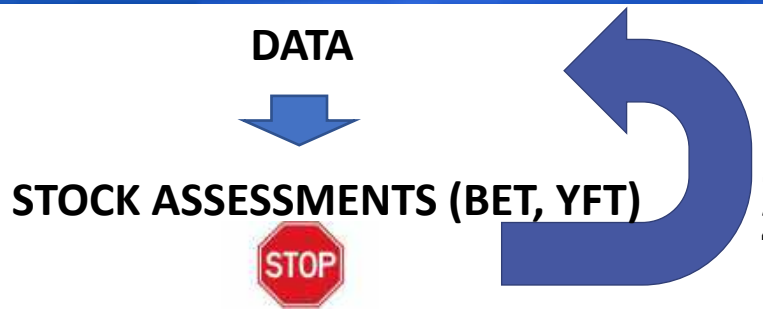
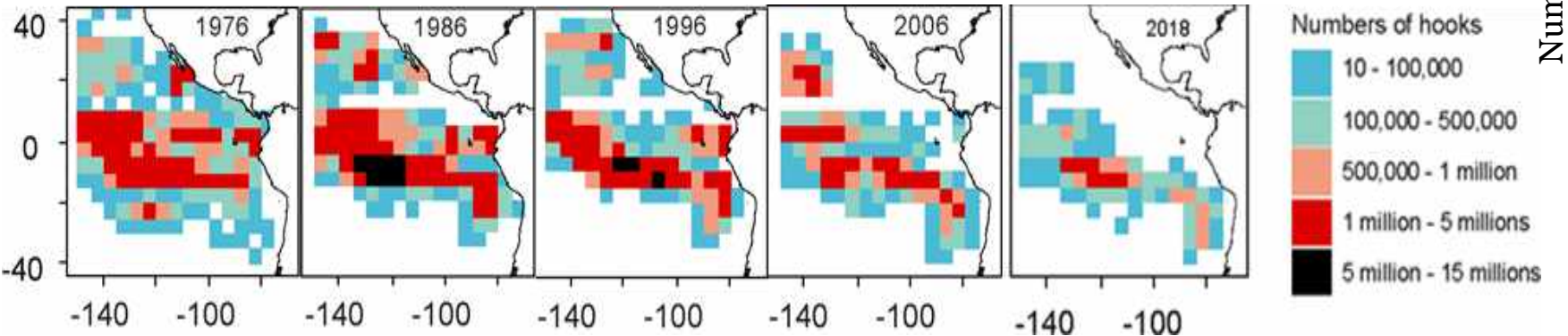
Tropical Tuna management in the IATTC



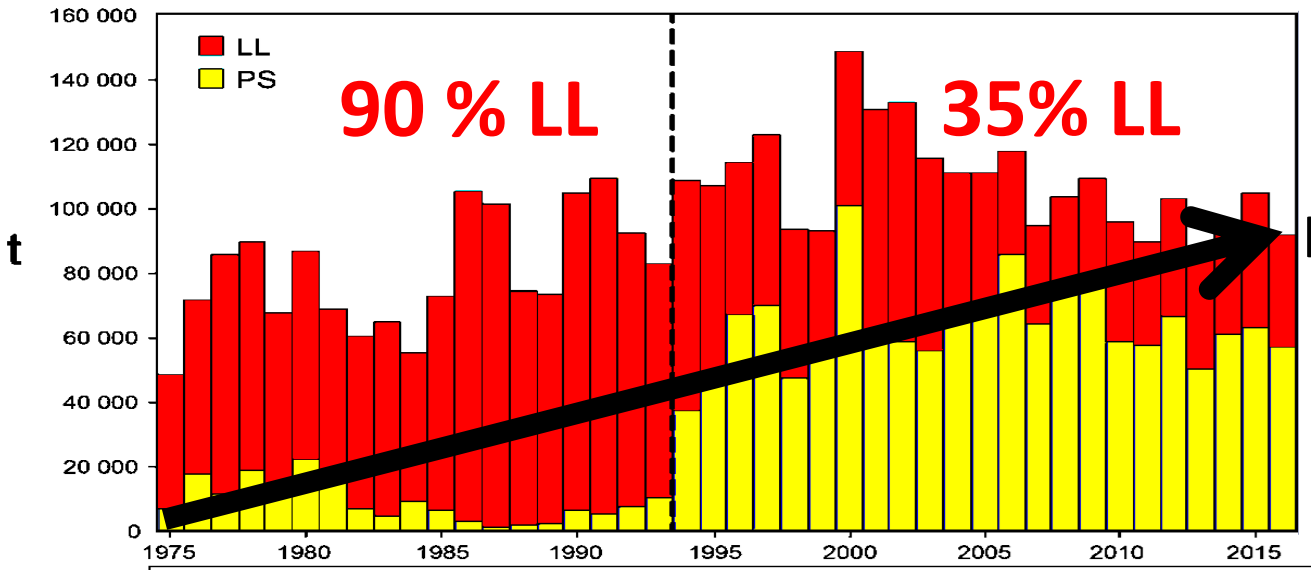
1. Problems with the BET assessment (2018)
2. Problems with the YFT assessment (2019)

- BET and YFT assessments in the EPO depend on Japanese longline CPUE to estimate trends and status of stocks
- There has been a decrease of longline fishing.

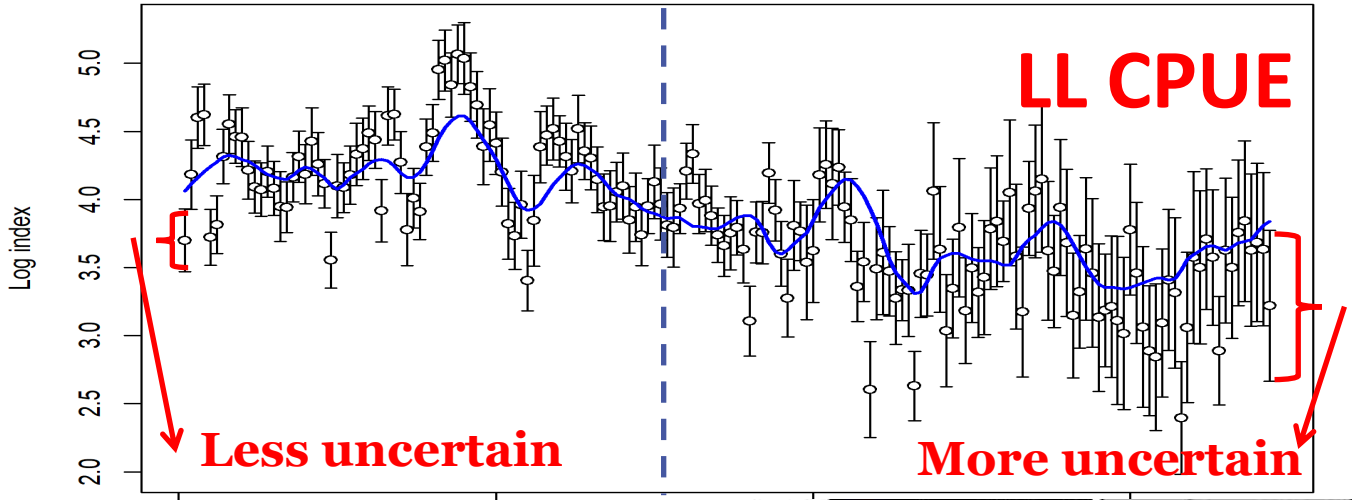
Longline spatial contraction



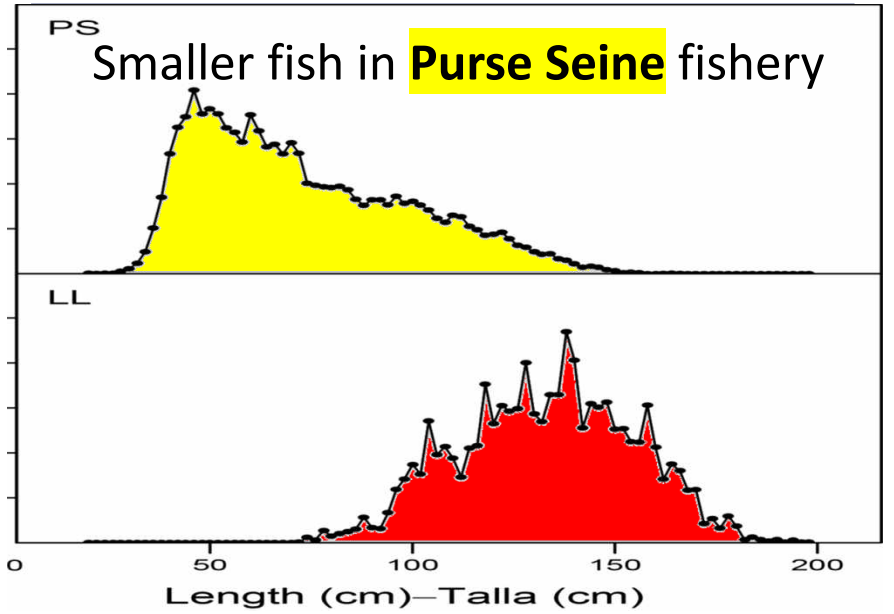
Decrease in Longline (Bigeye tuna)

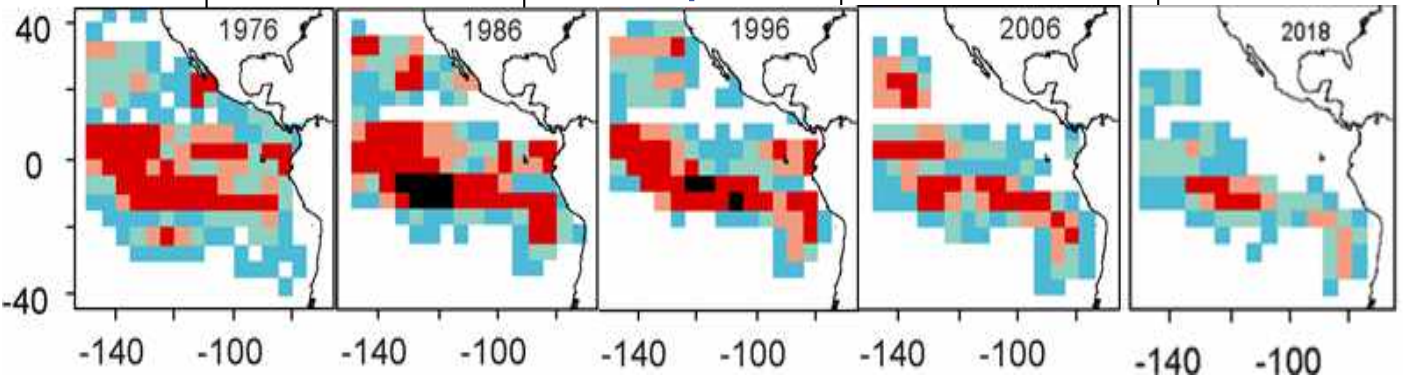


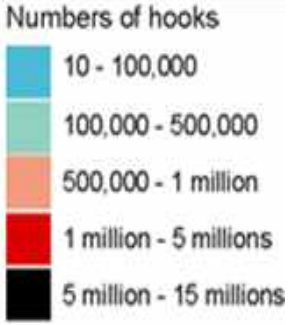
Increased **TOTAL** catch



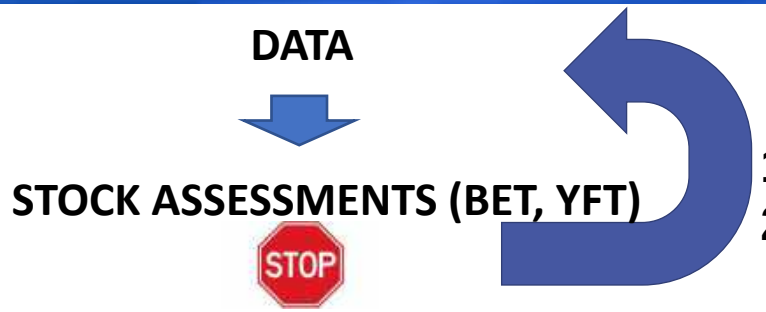
Expansion of **Purse Seine**







Tropical Tuna management in the IATTC

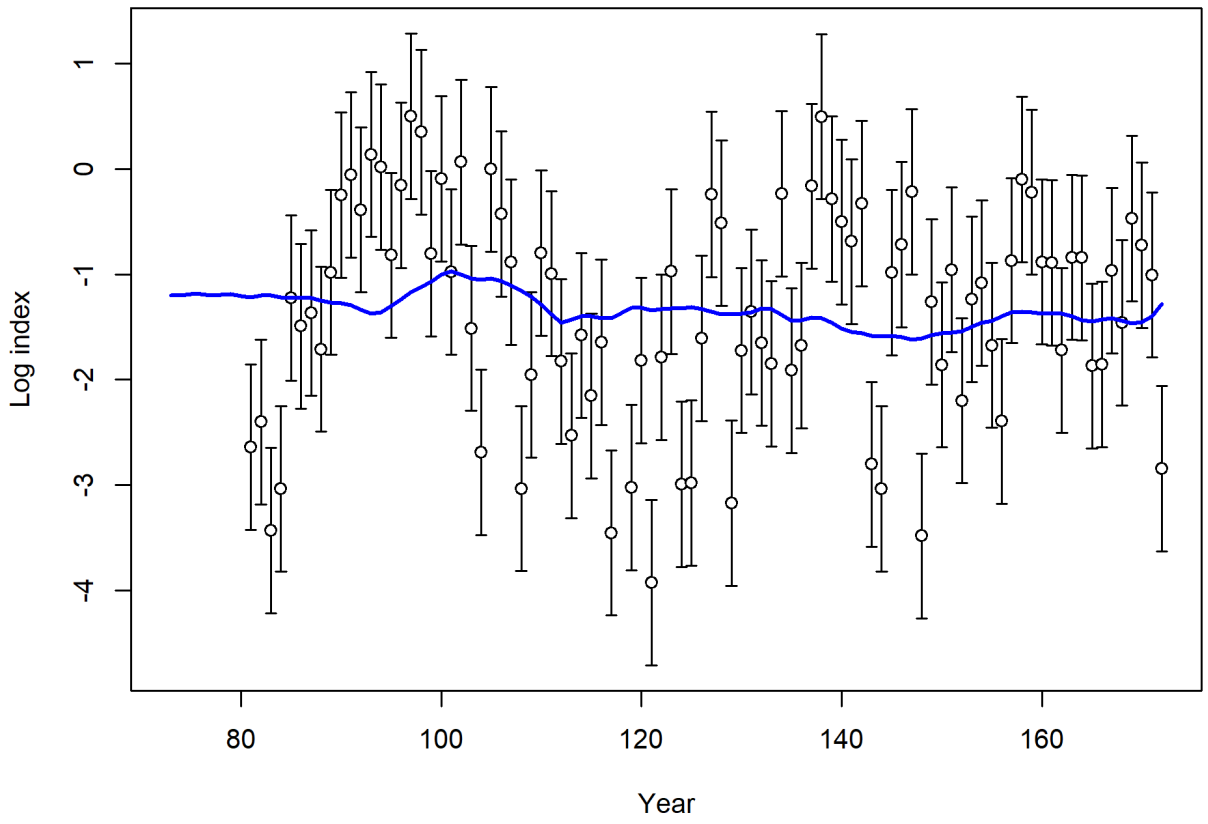


1. Problems with the BET assessment (2018)
2. Problems with the YFT assessment (2019)

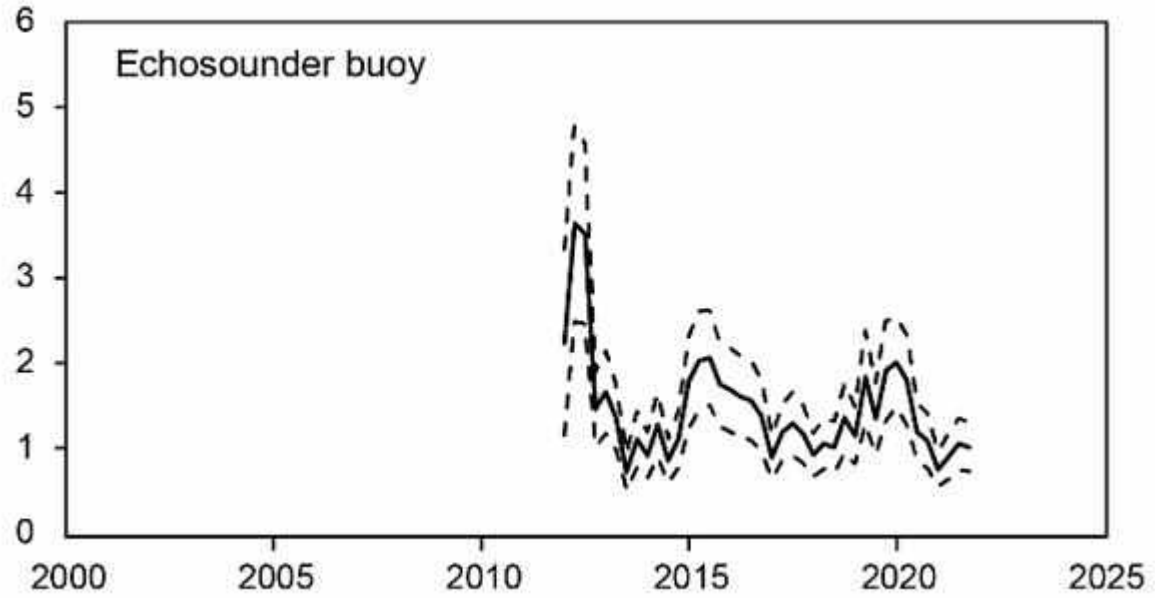
- BET and YFT assessments in the EPO have depended on Japanese longline CPUE to estimate trends and status of stocks (not YFT in 2020)
- There has been a decrease of longline fishing.
- Increase of purse seine fishing on FADs, but:
  - No reliable standardized FAD CPUE,
  - Need for additional information about FADs to interpret/standardize
  - No standard measure of effort for FADs.

Purse-seine CPUE on FADs for BET

No reliable standardized FAD CPUE, lack of additional information about FADs, no standard measure of effort for FADs.



Promising recent work on SKJ Buoy index



IATTC Tropical Tuna management since 2019

DATA

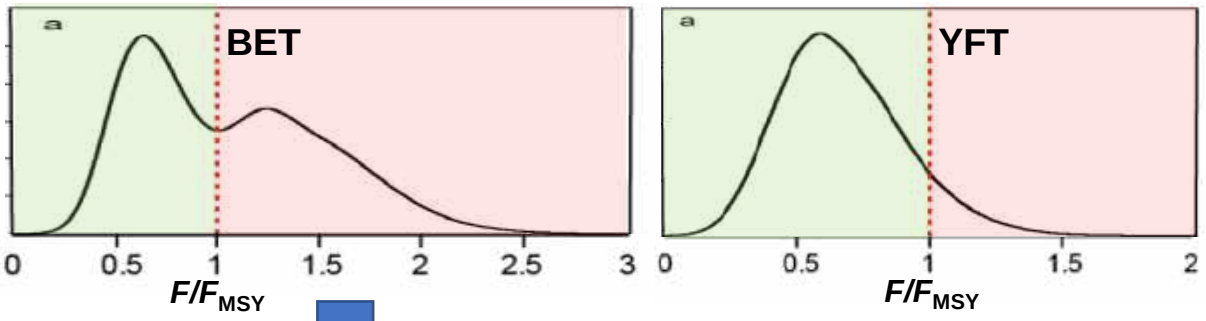
STOCK ASSESSMENTS (BET, YFT)

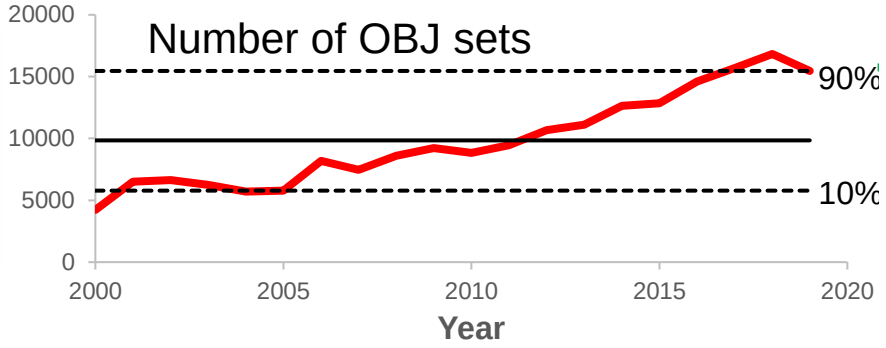
1. Problems with the BET assessment (2018)
2. Problems with the YFT assessment (2019)

IATTC Tropical Tuna management since 2020

DATA

MULTI-MODEL STOCK ASSESSMENTS (2020)





CORRECTIONS FOR CAPACITY CHANGES

STAFF RECCOMENDATIONS

~~**INCLUDING PRECAUTIONARY LIMIT ON OBJ # of SETS**~~

SAC RECCOMENDATIONS

DISCUSSION IN COMMISSION

2022-2024 MANAGEMENT CYCLE
(72 days PS closure + BET IVL)

~~**ADOPTION**~~ **(OR NOT) OF MANAGEMENT ACTIONS**

ADOPTION (~~OR NOT~~) OF MANAGEMENT ACTIONS

Current approach: some uncertainties

- The new risk analysis approach incorporates a range of stock assessment uncertainties into the BET and YFT assessments.
- Negotiations about management decisions creates management uncertainty. If objectives are not clear and stable over time, the decisions are not part of a proper, complete strategy.
- The need to decide by consensus* can create political/industrial uncertainty. No guarantee appropriate management will continue once a Resolution expires.

** Article IX of Antigua requires consensus. Just 1 of the 21 members that is not in agreement is enough to halt a decision.*

Current approach: Summary

- IATTC has many years of experience following this approach. It has worked.

Things that could be improved:

- Perception of stock can change rapidly: changes in methodology and data.
- Management inconsistencies could occur if rules / objectives not fully specified.
- Difficult to evaluate long term consequences of alternative decisions.
- Need to consider additional uncertainties, in addition to assessment uncertainty.
- Difficult to evaluate how alternative strategies achieve management objectives.
- By default, there is a tendency to a system of minimal management changes.
- The process can be contentious at times.
- Costly in the long-term: many assessments and many meetings.

Conclusions

Current IATTC approach

- Current IATTC tropical tuna management advice depends on stock assessments
- Stock assessment can have problems:
  Bigeye (2018) and yellowfin tunas (2019)
- There is an interim SKJ assessment (2022)
- The process can be contentious and costly in the long-term: many assessments and many meetings.

Management Strategies

- IATTC adopted elements of a management strategy for tropical tunas
- Only general objectives adopted
- Complex management: several measures in addition to closures, not clear how to include this measures and alternatives in an MSE

CIAT
IATTC

Questions?