

20 | Harvest Strategy in development

EPO Bigeye Tuna



Management Authority:

Inter-American Tropical Tuna Commission

Expected Adoption Year:

2024

Management Objectives:

In development and not officially adopted, but often assumed to be B_{MSY} based on Article VII(1)c of the Antigua Convention.

Reference Points:

Reference points being developed as part of current MSE process.

- **Interim Limit Reference Point:** $F_{0.5RO}$ and $SSB_{0.5RO}$, where steepness = 0.75 (this is equivalent to $8\%SSB_0$)
- **Interim Target Reference Point:** F_{MSY} , SSB_{MSY}

* SSB_0 = spawning stock size that would exist in the absence of fishing

* RO = recruitment (i.e., number of young fish) that would exist in the absence of fishing

*steepness - the fraction of virgin recruitment obtained when a stock is at 20% of its unfished size. A steepness of 0.75 indicates that a stock is productive enough to still produce 75% of its maximum reproductive output, even when it is depleted to just 20% of its initial population size.

Candidate Harvest Strategies:

Candidate model-based harvest strategies are being developed as part of current MSE process.

Current interim HCR developed without MSE testing:

- F should not exceed F_{MSY}
- If $>10\%$ chance that $F > F_{limit}$, reduce F to $\leq F_{MSY}$ with a 50% probability and a $<10\%$ chance of $F > F_{limit}$
- If $>10\%$ chance that $SSB < SSB_{limit}$, take action to get $SSB \geq SSB_{MSY}$ with a 50% probability and a $<10\%$ chance of $SSB < SSB_{limit}$ within 2 generations or 5 years, whichever is greater

Progress Update & Workplan:

- **2020-23:** MSE framework development and refinement; testing of candidate harvest strategies
- **2024:** Finalize MSE; adopt HCR/HS

Link to relevant policy document or update:

- [Resolution C-16-02: Harvest Control Rules for Tropical Tunas \(Yellowfin, Bigeye, and Skipjack\)](https://www.iattc.org/GetAttachment/79173db8-ebc3-49ca-9fa6-c46d0ffe5979/Harvest%20control%20rules) (<https://www.iattc.org/GetAttachment/79173db8-ebc3-49ca-9fa6-c46d0ffe5979/Harvest%20control%20rules>)
- [1st Workshop on Management Strategy Evaluation \(MSE\) for tropical tunas report](https://www.iattc.org/en-US/Event/DetailMeeting/Meeting-WSMSE-01) (<https://www.iattc.org/en-US/Event/DetailMeeting/Meeting-WSMSE-01>)
- [2nd Workshop on Management Strategy Evaluation \(MSE\) for tropical tunas report](https://www.iattc.org/en-US/Event/DetailMeeting/Meeting-WSMSE-02) (<https://www.iattc.org/en-US/Event/DetailMeeting/Meeting-WSMSE-02>)
- [Example Toy Management Strategy Evaluation for Bigeye Tuna](https://valeromaspez.shinyapps.io/tunamse_epo_eng/) (https://valeromaspez.shinyapps.io/tunamse_epo_eng/) A shiny app where users can explore the performance of candidate HCRs