

15 | Harvest Strategy in development

Indian Ocean Bigeye Tuna



Management Authority:

Indian Ocean Tuna Commission

Expected Adoption Year:

2022

Management Objectives:

General: Maintain the stock biomass in the green zone of the Kobe plot (not overfished and not subject to overfishing) while maximizing the average catch from the fishery and reducing the variation in the total allowable catch (TAC) between management periods.

- The bigeye tuna spawning stock has a 60% probability of achieving the target reference point of SB_{MSY} by 2034-2038;
- The bigeye tuna spawning stock biomass avoids breaching the interim limit reference point of $50\%B_{MSY}$ with a high probability

Reference Points:

- **Interim Limit Reference Point:** $50\% B_{MSY}$ and $130\% F_{MSY}$
- **Interim Target Reference Point:** B_{MSY} and F_{MSY}

Candidate Harvest Strategies:

Adopted in 2022, IOTC adopted a fully specified harvest strategy. An exceptional circumstances protocol still needs to be specified.

Specifications:

- **Type:** Model-based
- **Management cycle:** 3 years
- **Data inputs:** Total catches of bigeye tuna, longline CPUE data
- **Management output:** Quota
- **Harvest control rule:**
The MP uses a hockey-stick HCR that constructs a harvest rate based on biomass depletion (measured relative to carrying capacity) from a simple biomass dynamic model. The pivot points are at 40% and 10% of carrying capacity, with the HCR multiplier linearly decreasing from 1 to almost zero between those pivot points.
- **Other:**
Maximum quota change: 315%

Progress Update & Workplan:

The harvest strategy-derived TAC will first be implemented in 2024. A mechanism to control catch will be developed in 2025 if an allocation scheme has not yet been agreed.

Link to relevant policy document or update:

- [Conservation and Management Measures Adopted by the IOTC at Its 26th Session](https://iotc.org/documents/conservation-and-management-measures-adopted-iotc-its-26th-session): (<https://iotc.org/documents/conservation-and-management-measures-adopted-iotc-its-26th-session>) Navigate to Resolution 22/O3 to view the 'Management Procedure for Bigeye Tuna in the IOTC Area of Competence'
- [Bigeye Tuna Management Procedure for Adoption](https://iotc.org/documents/bigeye-tuna-management-procedure-adoption): (<https://iotc.org/documents/bigeye-tuna-management-procedure-adoption>) A summary outlining the final two harvest strategies considered for adoption. MPI_Harvest is the one that was eventually adopted.