INTER-AMERICAN TROPICAL TUNA COMMISSION

103rd MEETING

Panama City, Panama
01-05 September 2025

DOCUMENT IATTC-103 INF-A

ADDITIONAL INFORMATION SUPPORTING THE EFFECTIVENESS OF THE IVT MEASURE TO REDUCE BIGEYE CATCHES IN THE EPO TROPICAL TUNA FISHERY

EXECUTIVE SUMMARY

There is accumulating evidence that the Individual Vessel Threshold (IVT) measure has reduced the fishing mortality on bigeye tuna in the eastern Pacific Ocean (EPO). Given the estimated healthy status of yellowfin and skipjack stocks, there is potential to increase fishing effort in the EPO purse-seine fishery. The most recent empirical confirmation of the IVT's success is the increase in the 2024 longline CPUE index of relative abundance for bigeye, as juvenile fish from the period coinciding with the introduction of the IVT in 2022 were expected to enter the longline fishery that year. Observer longline length composition data support that these fish are consistent with the size related to individuals passing through the floating object fishery during the first year of the IVT.

INTRODUCTION

Resolution C-24-01 established conservation measures for tropical tunas in the eastern Pacific Ocean (EPO) for the biennial period of 2025-2026. As the best available scientific information, this resolution relied on a full risk analysis for bigeye tuna (SAC-15-02), a benchmark assessment for skipjack tuna (SAC-15-04), and an exploratory assessment for yellowfin tuna (SAC-15-03). The adopted package of management measures was essentially a rollover of those in the previous Resolution C-21-04. No changes were made partially due to the preliminary nature of the yellowfin assessment. For this reason, paragraph 14 of the Resolution directed the scientific staff to analyze the conservation measures currently in force and submit to the Commission for consideration new measures that consider, among others, reducing the number of closure days or eliminating the corralito.

In 2025, the staff has completed a full benchmark assessment and risk analysis for yellowfin tuna (SAC-16-03) which are now available to update the management advice. Also, for the first time, a risk analysis for skipjack tuna (SAC-16-04) is available. The results of these analyses did not change the estimated status of the skipjack and yellowfin stocks, both of which remain healthy. Therefore, under the current harvest control rule (Resolution C-23-06), management advice continues to be based on bigeye tuna. With respect to bigeye, the risk analysis indicates a significant improvement in stock status coinciding with the implementation of the Individual Vessel Threshold (IVT) measure to reduce bigeye catches. The IVT measure, introduced in 2022 through Resolution C-21-04 and subsequently maintained in Resolution C-24-01, was designed to prevent fishing mortality on bigeye from increasing. Analyses indicate that the IVT has been successful in reducing the fishing mortality on bigeye tuna (SAC-15 INF-K, SAC-16 INF-S).

In this document, the staff evaluates recently submitted longline CPUE and length composition data, updated through 2024 to assess whether they support previous analyses indicating that the IVT management measure has successfully reduced fishing mortality on bigeye tuna (SAC-15 INF-K, SAC-16 INF-S).

LONGLINE CPUE

Longline CPUE is the basis for the index of abundance used in the bigeye stock assessment (SAC-15-02) and is also used as a stock status indicator (SAC-16-02). The longline CPUE index reflects trends in adult abundance and should provide a delayed measure of the impact of the IVT on the fishing mortality exerted by the purse-seine floating-object fishery on juvenile bigeye. A range of ages of bigeye are caught in the floating-object purse-seine fishery and the longline fishery. However, the assessment indicates that most fish are vulnerable at around 3 months to 1.5 years old in the floating-object fishery, and at 3 to 5 years old in the purse seine fishery (**Figure 1**). This implies that the impact on juvenile bigeye of the IVT in 2022 should begin to appear in the longline fishery in 2024 (Figure 1).

The longline based index of abundance used in the stock assessment model is based on data from the Japanese fleet. However, the effort and spatial coverage of the Japanese fleet has been declining over time, reducing the precision of the index in recent years. Alternative indices have been developed that increase the spatial coverage of the data by including other fleets in the analysis. Inclusion of data from the Korean fleet has been particularly useful in increasing the spatial coverage and has been shown to improve the index by increasing the precision of the index for recent years.

Both the Japanese and Korean data, as well as the joint index, show a clear increase in the CPUE during 2024 (**Figure 2**). CPUE have increased to levels comparable to the peaks seen in the mid-2010s and late 2000s. The observer length composition for these fleets indicate that the increases is due to smaller fish, particularly in the Korean fleet (**Figure 3**). This provides evidence that the IVT has reduced fishing mortality on juveniles, allowing more individuals to reach the longline fishery, consistent with the external analyses presented in SAC-15 INF-K and SAC-16 INF-S. Data from 2025 should provide more definitive evidence.

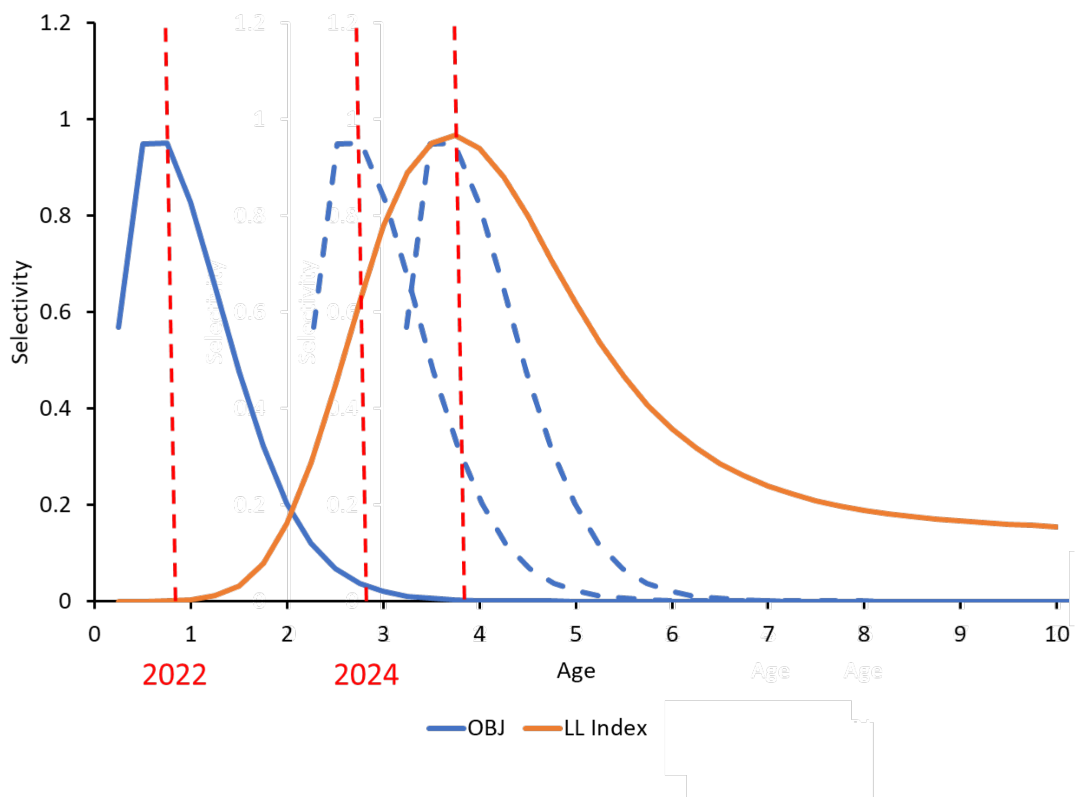

FIGURE 1. Comparison of age-specific selectivity for the purse-seine fishery on floating objects (OBJ) and the longline fishery (LL Index). The dashed curves show the projected ages that fish selected in the OBJ fishery in 2022 would reach in 2024 and 2025, indicating when those fish would be selected by the longline fishery.
FIGURA 1. Comparación de la selectividad por edad en la pesquería cerquera sobre objetos flotantes (OBJ) y la pesquería palangrera (índice LL). Las curvas discontinuas muestran las edades previstas que alcanzarían en 2024 y 2025 los peces seleccionados en la pesquería OBJ en 2022, lo que indica cuándo serían seleccionados por la pesquería palangrera.

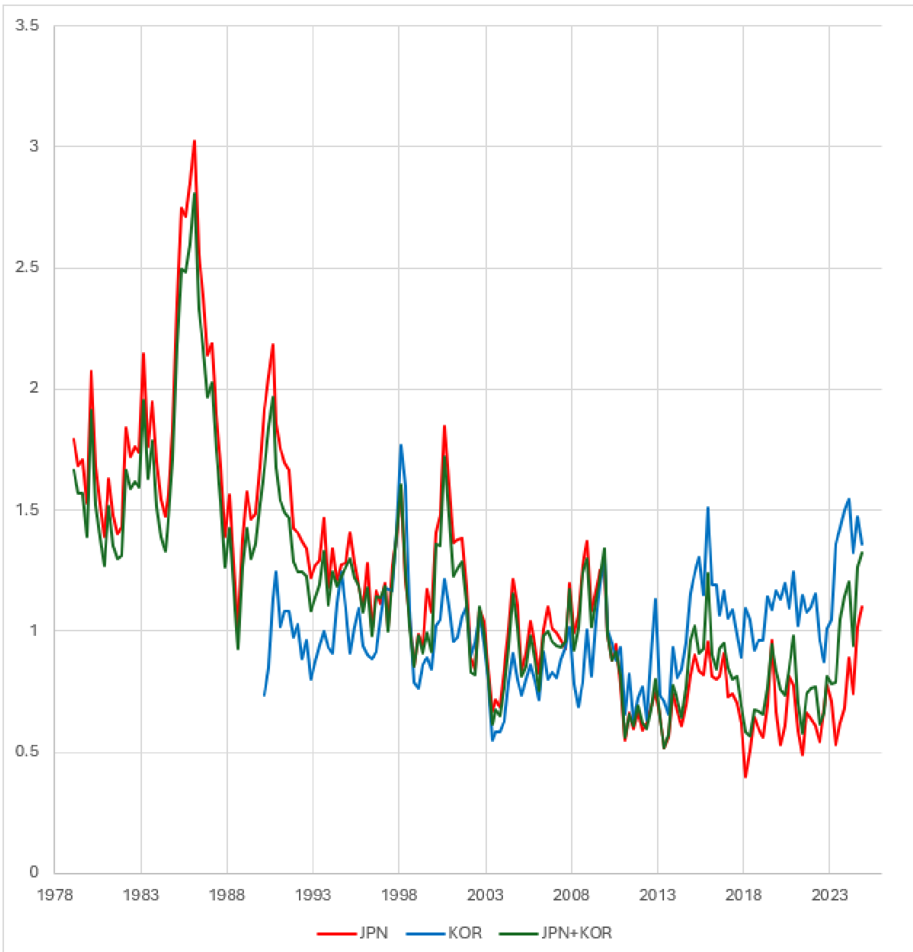

FIGURE 2. Indices of relative abundance from the Japanese (JPN), Korean (KOR) and combined (JPN+KOR) longline CPUE data standardized using spatio-temporal models.
FIGURA 2. Índices de abundancia relativa a partir de los datos de CPUE palangrera de Japón (JPN), Corea (KOR) y combinados (JPN+KOR) estandarizados mediante modelos espaciotemporales.

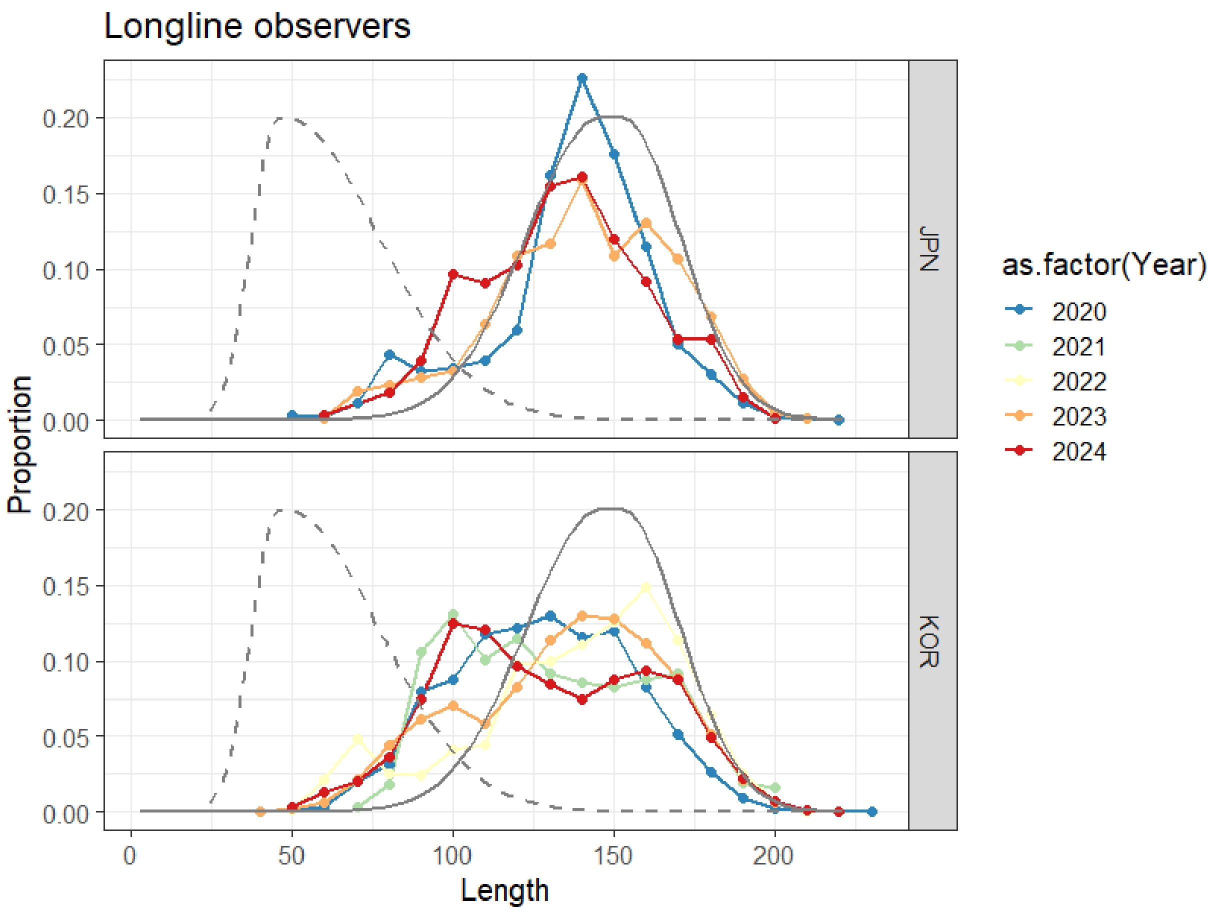

FIGURE 3. Observer length composition data from the Japanese (JPN) and Korean (KOR) longline fleets. The dashed line indicates the size of fish selected by the floating object purse seine fishery. The solid line without dots indicates the size of fish selected by the Japanese longline fishery.

FIGURA 3. Datos de observadores de composición por talla de las flotas palangreras de Japón (JPN) y Corea (KOR). La línea discontinua indica la talla de los peces seleccionados por la pesquería cerquera sobre objetos flotantes. La línea continua sin puntos indica la talla de los peces seleccionados por la pesquería palangrera de Japón.