

Track and understand the results of stock assessment of Pacific saury, EPO bigeye tuna and south Pacific blue shark

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1. South Pacific blue shark

The result of the 2022 Southwest Pacific blue shark stock assessment indicated that, considered against all conventional reference points the stock on average does not appear to be overfished and overfishing is not occurring (detailed as annex 1).

2. EPO bigeye tuna

The most recent stock assessment of the East Pacific bigeye tuna took place in 2020. For bigeye, the overall results of the risk analysis, which include 441 reference models, indicate a 50% probability that F_{MSY} has been exceeded and a 53% probability that S_{cur} is below S_{MSY} . The probabilities that the F and S limit reference points have been exceeded are not negligible ($P(F_{cur} > F_{LIMIT}) = 5\%$; $P(S_{cur} < S_{LIMIT}) = 6\%$). The bimodal nature of the probability distributions from the bigeye risk analysis for the management quantities of interest indicates that the stock is either well below or well above the levels corresponding to MSY (S_{MSY}). Clearly, optimal management—or even whether the bigeye stock size should be increased or decreased—cannot be determined from the risk analysis. However, the combined probability distribution for the pessimistic models shows only a 10% probability of exceeding F_{LIMIT} for the current EPO-wide closure duration (72 days), indicating that it is unlikely that this limit has been exceeded. Therefore, an extension to the status quo harvest strategy should be appropriate in the short term (detailed as annex 2). The next stock assessment will be conducted in 2024.

3. Pacific saury

According to the NPFC 7th Scientific Committee Meeting report, results of combined model estimates indicate that the Pacific saury stock declined with an interannual variability from near carrying capacity in the mid-2000's after a period of high productivity to current low levels. The results also indicated that B was below B_{MSY} (median average B/B_{MSY} during 2020-2022 = 0.368, 80%CI=0.232-0.564) and F was above F_{MSY} (average F/F_{MSY} during 2019-2021 = 1.192, 80%CI= 0.757-1.883). The results further indicated that recent stock biomass remains at a historically low level

in recent years. The biomass trend shows a small increase in recent years through 2021 and a marked increase in the Japanese biomass survey between 2021 and 2022. The harvest rate has also been declining from a peak in 2018 and was less than F_{MSY} during 2021. However, caution is required in interpreting these results, given historically low nominal CPUEs through 2022, relatively high fishing effort in 2021, and variability inherent in fisheries-independent surveys (detailed as annex 3).