



THE SECOND STOCK AND RISK ASSESSMENTS OF KAWAKAWA (*EUTHYNNUS AFFINIS*) AND LONGTAIL TUNA (*THUNNUS TONGGOL*) RESOURCES IN THE SOUTHEAST ASIAN WATERS USING ASPIC

Marine Fishery Resources Development and Management Department (MFRDMD)

Executive Summary

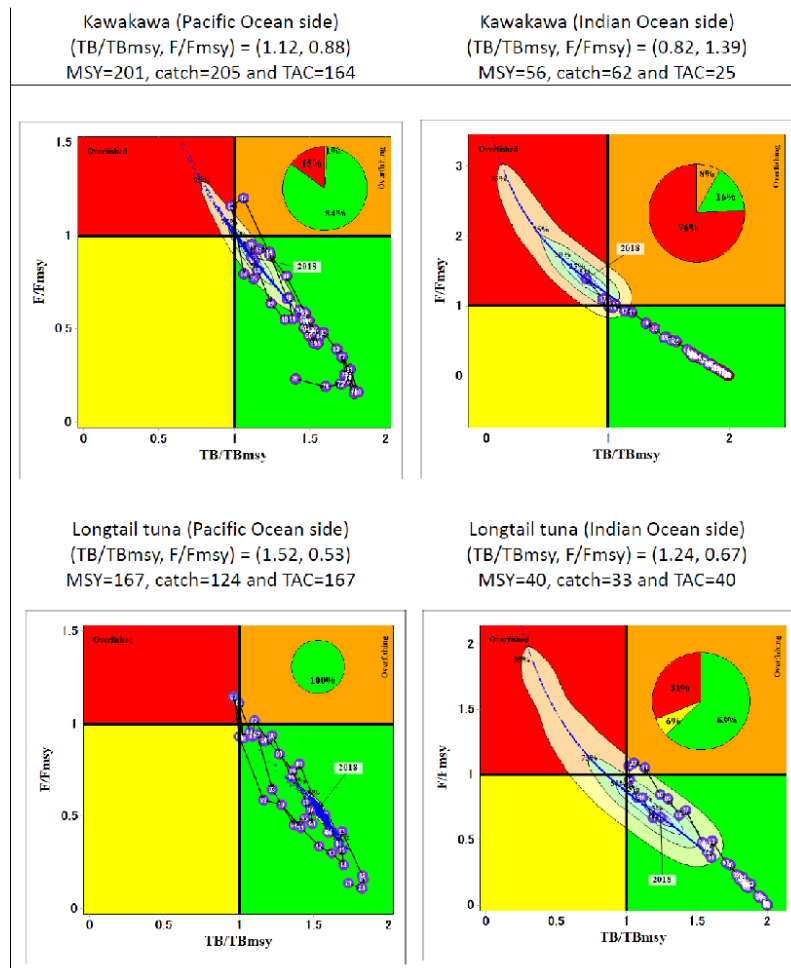
Since the establishment of the Scientific Working Group on Stock Assessment on Neritic Tunas in the Southeast Asian Region (SWG-Neritic tunas) in 2014, one of the tasks of the SWG-Neritic Tunas is to conduct the stock and risk assessments on neritic tunas in Southeast Asia waters namely: longtail tuna (*Thunnus tonggol*), kawakawa (*Euthynnus affinis*), narrow-barred spanish mackerel (*Scomeromorus commerson*) and Indo-Pacific king mackerel (*S. guttatus*) during 2014-2019. The results of the study were reported through the SEAFDEC Council and ASEAN mechanism.

In 2020, SEAFDEC organized the Practical Workshop on Stock Assessment of Longtail Tuna (LOT) and Kawakawa (KAW) in the Southeast Asian Waters in February 2020, at SEAFDEC/TD in Samut Prakarn, Thailand, the final report was finalized at the 6th Meeting of the SWG-Neritic Tunas on 2 December 2020 (**Annex 1**).

This study was conducted to assess the stock status and risk assessments of longtail tuna (LOT: *Thunnus tonggol*) and kawakawa (KAW: *Euthynnus affinis*) resources in the Southeast Asian region. During the SEAFDEC practical workshop in February 2020 in TD, LOT and KAW data from the Pacific Ocean and the Indian Ocean were utilized and compared to the past practical workshop in 2016. The published catch data till 2018 was mainly obtained from the IOTC (Indian Ocean Tuna Commission) and FAO. There are four software used in the practical workshop: i) CPUE Standardization, ii) ASPIC original application and the batch job, iii) Kobe plot and iv) risk assessments. Microsoft Excel is also used in data sorting and compiling. As a result, the stock assessments for LOT in the Indian Ocean was in a safe situation (green zone) compared to previous assessments in 2016, which was in an overfished severe situation (red zone). Based on the risk assessment results, it is suggested that the current catch (33,000 tons) can be increased by 20% (40,000 tons), in which case the risk probability of Total Biomass (TB) and Fishing Mortality (F) violating their MSY levels are less than 50%. However, KAW stock status in the Indian Ocean shows an overfished situation compared to assessment in 2016, which is still in a safe situation. Based on the Intrinsic growth rate of population (r) the current catch (62,000 tons) needs to be reduced by 60% (25,000 tons) to avoid 50% risks of TB and F violating their MSY levels. Next, for LOT in the Pacific Ocean, is also in a safe situation like a previous assessment in 2016. It is also suggested that the current catch (124,000 tons) can be increased to the MSY level (167,000 tons), in which case the probability of TB and F violating their MSY levels is less than 50%. Lastly, KAW stock status in the Pacific Ocean remains in a safe situation as the previous assessments. Based on the risk assessment results, the current catch (205,000 tons) needs to be reduced by 20% (164,000 tons) to avoid a 50% risk of TB and F violating their MSY levels. Although the stock status is in the green zone, the current catch (2018) is still higher than the MSY level. That is why the catch needs to be reduced even though the stock status is safe. One catch of pelagic fisheries in the Southeast Asian region is composed

of multiple species. Stocks of these species are widely distributed and homogeneously mixed, which lead to non-selective exploitation. Thus, the implementation of the total allowable catch (TAC) for a specific species in the Southeast Asian region could not be possible (SEAFDEC/MFRDMD, 2019). As kawakawa and longtail tuna are among the most important fisheries resources in the SEAFDEC member countries, stock and risk assessments need to be updated at least every three years (two years for the stocks in the unhealthy status).

Summary of stock status (2018), MSY, current catch level (average of 2016-2018) and suggested TAC (1,000 tons)



Note The pie chart represents composition (%) of the quadrant of the confidence surface (uncertainties) of the Kobe plot in the final year (2018).

REQUIRED CONSIDERATION BY THE COUNCIL

The Council is invited to endorse the report on Stock and Risk Assessments of Kawakawa and Longtail Tuna in the Southeast Asian Waters and would be circulated to the FCG/ASSP focal persons for endorsement prior to submission to the 29th Meeting of ASWGFi in 2021.

Final Report of the Stock and Risk Assessments of Kawakawa and Longtail Tuna in the Southeast Asian Waters