

SCIENCE – STOCK ASSESSMENT

Stock assessments of the major targeted tuna species in the Western and Central Pacific Ocean are undertaken periodically by the Oceanic Fisheries Programme (OFP) of the Secretariat of the Pacific Community (SPC). Assessments have been completed for South Pacific albacore (*Thunnus alalunga*), bigeye tuna (*Thunnus obesus*), skipjack tuna (*Katsuwonus pelamis*), yellowfin tuna (*Thunnus albacares*), and striped marlin (*Kajikia audax*, formerly *Tetrapturus audax*). The assessments are reported to the Scientific Committee of the Western and Central Pacific Fisheries Commission.

SPC has adopted a common methodology for all of its formal tuna stock assessments. The methodology (MULTIFAN-CL, developed by Dr. David Fournier, Fournier et al. 1998; Hampton and Fournier 2001) integrates data for fishing catch and effort, catch length composition, and tagging into an age-structured population model.

The model is used to estimate the “health” of the stock. Current stock size is compared to a reference point at the level that produces the maximum sustainable yield (B_{MSY}). The current level of fishing mortality (i.e. the proportion of the population being caught each year) is compared to a reference point at the level that produces the maximum sustainable yield (F_{MSY}).

In spite of the large increases in the catches of skipjack, the status of that stock continues to be healthy. The status of albacore tuna is less certain, but there is no evidence for overfishing. The risk of overfishing (i.e. removing fish at too high a rate) for yellowfin tuna continues to be high. For bigeye tuna, current catch levels are not sustainable, and if catches and fishing mortality are not reduced then the population is predicted to decline well below the level that would produce the MSY. Reductions in fishing mortality for these stocks have been recommended by successive meetings of the WCPFC Scientific Committee.