

6th annual tuna stock assessment workshops

A record number of participants attended this year's annual tuna stock assessment workshops hosted by SPC's Oceanic Fisheries Programme (OFP). In total, 30 participants from 23 Pacific Island countries attended the workshops, which are recognised as being an important programme in capacity building for fisheries officers and managers in the region. This year, for the first time, participants were introduced to the tuna management simulator (TUMAS), a new software tool developed by OFP that allows fishery managers and advisors to evaluate the performance of different management options.

OFP produces regular assessments of tuna stocks in the western and central Pacific Ocean. These assessments provide information regarding the health of the region's tuna stocks and the potential impact of different management measures on these stocks and the fisheries that target them. These are technically complex assessments that incorporate the very latest scientific developments and innovations. Thus, it is important that fisheries managers from Pacific Island countries and territories have the capacity to interpret the outputs from these assessments, and understand the implications for domestic and regional tuna fisheries management. To assist in building such capacity, OFP has been hosting a series of annual stock assessment workshops since 2006. These workshops are targeted at Pacific Island senior fishery officers who generally play a major role in providing advice to their fisheries managers and who attend the annual Scientific Committee meetings of the Western and Central Pacific Fisheries Commission (WCPFC).

This year, two stock assessment workshops were held at SPC's headquarters in Noumea from 20–25 June and from 28 June–4 July 2011. The first workshop was designed for fisheries officers and managers who have not received significant exposure to stock assessment concepts and principles, while the second workshop was for participants who have attended stock assessment workshops in previous years.

The first workshop focussed on providing participants with an understanding of fish population dynamics, the interaction between fisheries and fish populations, and the fundamental concepts and basic stock assessment principles. The workshop also included a session that introduced participants to the key biological reference points used by WCPFC to determine the status of tuna stocks in the region. Presentations, informal group discussions, and practical computer-based exercises were used to deliver the material during the workshop to ensure that participants received sufficient opportunities to learn and ask questions. The workshop ended with discussions about the key information that can be drawn

from stock assessments to inform management decisions at the national and regional level.

To refresh the memories of returning participants, the second workshop started with a revision of fish population dynamics and stock assessment principles. Participants were then introduced to the concepts of uncertainty and sensitivity analyses, which are key concepts to understand when assessing the assumptions typically made in regional tuna stock assessments.

The major focus of this workshop, however, centred on management option analyses, in particular, the use of TUMAS. Participants were given several days to become familiar with using TUMAS. At the end, each participant developed and reported on their own management options analysis. In this exercise, participants were asked to develop their own management objectives and then explore the performance of a range of management options in meeting these objectives. Responses from participants about TUMAS were overwhelmingly positive, with participants eager to use TUMAS in their countries as a tool to allow stakeholders to visualise how



Donald Bromhead (SPC consultant) providing advice to Efoti Ala (Fisheries Department, Ministry of Natural Resources, Tuvalu) during a stock assessment practical class.

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changes in policy within a region could potentially affect tuna stocks and the fisheries that exploit them.

Invitations to the workshops were sent to all SPC member countries, as well as the Philippines, Indonesia and Vietnam. To maintain participants' comprehension of stock assessment concepts and principles, previous and current workshop material is made available on SPC's website at www.spc.int/oceanfish/en/meetingsworkshops/saw, and online revision exercises are distributed to returning participants during the year.

Funding for participants to attend the workshops was provided by the WCPFC-administered Japanese Trust Fund and West Pacific East Asia Oceanic Fisheries Management Project, the Western Pacific Fisheries Management Council, and the EU-funded SciFish project.

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Elaine Garvilles (National Fisheries Research and Development, Philippines), Lilis Sadiyah (Research Centre for Fishery Management and Conservation of Fishery Resources, Indonesia) and Aketa Taanga (Ministry of Fisheries and Marine Resources Development, Kiribati) work on developing management options using TUMAS.



Valerie Chan (Pacific Islands Regional Office NOAA Fisheries Service, Hawaii) and Bruno Mureret (Service de la Pêche Service Territorial des Affaires Rurales et de la Pêche, Wallis and Futuna), listen and take notes during a stock assessment presentation.



What is TUMAS?

Better-informed fishery managers make better management decisions. This is the idea behind the new software TUMAS (TUna Management Simulator), designed by SPC to support the management of the world's largest tuna fisheries.

Using the same science and models used by SPC, this user-friendly simulator allows the user to evaluate the potential effects of different management options on the region's tuna stocks and the fisheries that exploit them. After the user has defined a fishery management plan, the software predicts how this management option will affect the health of the resources, as well as the performance of the fisheries both in terms of catches and catch rates. For example, the user can choose to change future catch or effort levels for individual fisheries in the western and central Pacific Ocean, and examine the effects of these on bigeye, yellowfin and skipjack tuna stocks, or on catches in their own domestic fishery.

TUMAS also allows members of the Western and Central Pacific Fisheries Commission to gain a better understanding of the consequences of different management options that are discussed and negotiated at regional fisheries meetings.

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For more information, check <http://www.tumas-project.org> or contact: Simon Hoyle, Senior Fisheries Scientist, Stock Assessment Section, SPC Oceanic Fisheries Programme, SimonH@spc.int

