

Cutting edge science at the 14th meeting of the WCPFC Scientific Committee

Representatives from countries across and beyond the Pacific Islands region met this past August in Busan, Korea for the 14th Regular Session of the Scientific Committee (SC) of the Western and Central Pacific Fisheries Commission (WCPFC). During meetings of the SC, delegates review the latest science relevant to the management of migratory species in the Western and Central Pacific Ocean (WCPO), and make formal recommendations to the WCPFC meetings held in December each year. The SC is an important meeting for the scientific team of the Oceanic Fisheries Programme (OFP) of the Pacific Community (SPC), in part because OFP is the WCPFC's scientific and data management services provider. The papers and presentations for this meeting by OFP scientists (over 45 papers by OFP authors for the 14th meeting) provide the backbone for important discussions on the scientific aspects of the world's largest tuna fishery. It is also the key pathway through which OFP's work translates into concrete outputs for Pacific communities. The OFP team was heavily involved in presentations and working groups for all four themes reviewed by the SC: data and statistics, stock status, management issues, and ecosystems and bycatch mitigation.

SPC, in collaboration with the Pacific Islands Forum Fisheries Agency, provided the latest tuna catch information for the WCPO. The provisional tuna catch for 2017 was estimated to be just over 2.5 million metric tonnes, with a delivered value of over USD 5.8 billion. While this catch level was the lowest in the last six years, it still represented nearly 80% of the total Pacific Ocean catch and over 50% of the global tuna catch.¹ OFP also presented estimates of bycatch within the longline fishery at the regional level, based on the invaluable information collected by regional observers onboard these vessels. Catch was estimated for 45 species or species groups, covering the full range of finfishes, billfishes, sharks and rays, marine mammals and sea turtles that have been recorded in longline observer data. This work represents the first estimates of such a wide range of species catch, although further improvements in the spatial coverage of available observer data and data inputs would help OFP's ability to estimate these.

Following the new stock assessment of bigeye tuna in the WCPO last year² and recommendations for further work, OFP scientists worked with the Commonwealth Scientific and Industrial Research Organisation in Australia to increase the amount of information on the age of larger bigeye tuna. This further improved our understanding of bigeye growth. SC14 agreed that this updated information on growth should now be a key input into OFP's bigeye stock assessments, which are used to provide advice. OFP presented an update to the 2017 stock assessment, incorporating this new information. As seen in 2017, the resulting advice was more positive than in previous years, but was tempered by additional SPC analyses suggesting that under some future conditions, the bigeye stock may decline under allowed levels of fishing.

OFP also presented a new assessment of the South Pacific albacore stock, which further improved on the previous assessment in 2015. The main conclusion is that while the adult stock has been reduced to around half its unexploited level, it is comfortably within biologically safe limits. However, although there have been reduced longline catches in the last four years, and at the same time some improvements seen in catch rates in the fishery, catches in 2017 increased by around a third compared with 2016. Given the new assessment, SPC has been asked to examine what may happen to the stock and fishery in the future if those catch levels continue.

In discussions of management issues, OFP presented work to support the 'harvest strategy' approach for tuna stocks. This approach focuses on longer-term objectives for the fisheries and stocks, and aims to move away from annual short-term decision-making. This effort is ongoing, and OFP's work supported SC's decisions on the work to be done on skipjack and South Pacific albacore in the next couple of years. The harvest strategy approach needs to bring managers and scientists together to discuss and drive the work, and a proposal to set up a new annual meeting to help this process had the general support of SC14 participants.

In collaboration with the Parties to the Nauru Agreement (PNA), OFP scientists presented two analyses of the use and potential impacts of fish aggregation devices (FADs). Tropical purse-seine vessels make use of artificial floating FADs that attract tuna and improve fishery catches; but these devices have potential negative ecosystem impacts.³ PNA's fascinating FAD tracking dataset, which provides the position of a FAD at irregular intervals as it is dropped into the water and drifts through the Pacific, provides new insights

¹ More information on the catch and patterns of fishing are available at: <https://www.wcpfc.int/node/30997>.

² See http://www.spc.int/DigitalLibrary/Doc/FAME/InfoBull/FishNews/153/FishNews153_23_Hampton.pdf

³ See, for example, Leroy et al. 2013. A critique of the ecosystem impacts of drifting and anchored FADs use by purse-seine tuna fisheries in the Western and Central Pacific Ocean. *Aquatic Living Resources* 26:49–61. Available from: www.alr-journal.org/articles/alr/abs/2013/01/alr120033/alr120033.html

into this method of fishing. SPC's analyses highlighted the number of FADs in the WCPO (up to 70,000 FADs were estimated to be in the water in 2017), the rate at which FADs may be 'lost', and how often they may end up beached on the shores of Pacific islands. A discussion of the findings led to recommendations from SC on increasing the use of biodegradable FADs, better measures for FAD control and retrieval, and reducing the number of FADs deployed.

In addition to SPC's work, contributions were also presented by scientists who work across the Pacific on: assessments for Pacific bluefin tuna and North Pacific swordfish by the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC); assessments of sharks by ISC and the Marine Areas Beyond National Jurisdiction project; potential bycatch mitigation measures by scientists from the United States, Japan and New Zealand; and ongoing research on bird interactions by the Agreement for the Conservation of Albatrosses and Petrels.

Next year's proposed assessments for SPC include skipjack, the tuna stock contributing the largest catch in the WCPO, striped marlin in the southwest Pacific, and oceanic whitetip shark. Further work for OFP this year includes the WCPFC's Technical and Compliance Committee (TCC) meeting, and the Commission meeting to be held in Hawaii in December 2018, where recommendation by SC and TCC are reviewed and translated into actual management measures and regulations.

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It is estimated that up to 70,000 drifting fish aggregating devices are in use in the western and central Pacific Ocean. Their environmental impact and ways to reduce it were discussed during the 14th WCPFC Scientific Committee meeting.
Image: Fabien Forget