# Workshop continues the development and implementation of SPC's key tuna stock assessment software: MULTIFAN-CL

In March 2016, the Stock Assessment and Modelling Section of the Pacific Community's Oceanic Fisheries Programme (OFP) hosted Dr Dave Fournier in Noumea. Dave is a world-renowned fisheries modeller and software developer, and a few years ago was a recipient of the American Fisheries Society's prestigious Ricker Award[1]. He is a pioneer of the field that has come to be known as "integrated fisheries stock assessment" and published the seminal article on the topic in 1982[2].

Dave has worked with SPC, initially as a staff member, and later as a contractor, since the 1980s primarily developing the fisheries stock assessment programme MULTIFAN-CL, which at the time represented the first serious attempt to implement integrated fisheries stock assessment in a general way. During his visit to SPC, Dave worked with Nick Davies (another key MULTIFAN-CL developer) to further enhance MULTIFAN-CL and ensure it remains at the cutting edge of tuna fisheries assessment.

The MULTIFAN-CL assessment software (www.multifan-cl.org) has been used since the 1990s to assess the western and central Pacific Ocean's tuna stocks, in particular, skipjack, yellowfin, bigeye and south Pacific albacore. The results from the model form a key part of OFP's provision of the best possible scientific analyses to underpin our advice to members of the Western and Central Pacific Fisheries Commission and the Pacific Community. The software has been specifically tailored for western and central Pacific Ocean (WCPO) tuna fisheries to make the best use of the specific fishery and biological datasets SPC has, in particular: catch, effort and fish length and individual weight data of tuna from different fisheries in the WCPO; information on fishery catch rates over time; our understanding of key biological characteristics of the tuna; and movement information (as well as other features) from the extensive tagging programmes that have occurred within the WCPO over many years[3].
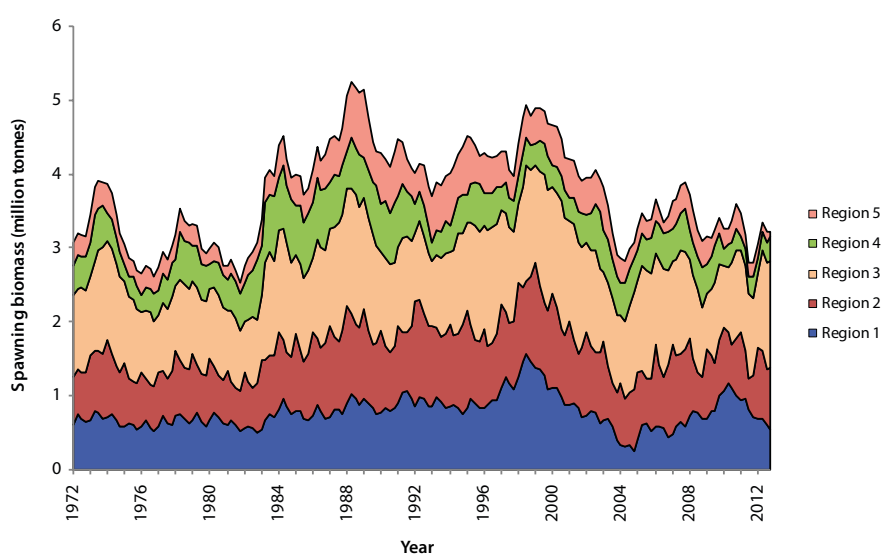
MULTIFAN-CL estimates of skipjack spawning biomass in the western and central Pacific Ocean, by five model regions.

During their stay in Noumea, Nick and Dave also held a four-day training workshop on using MULTIFAN-CL software and its new features, for scientists from both SPC's Oceanic Fisheries and Coastal Fisheries programmes. The workshop was extremely well received and gave our scientists a considerable step forward in developing stock assessments for skipjack and southwest Pacific blue shark, which that will be presented at the 12th Scientific Committee of the Western and Central Pacific Fisheries Commission this year.

For more information:

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[1] http://www.admb-project.org/news/dave-fournier-received-the-american-fisheries-society2019s-ricker-award
[2] Fournier D.A. and Archibald C.P. 1982. A general theory for analyzing catch at age data. Canadian Journal of Fisheries and Aquatic Sciences 39:1195–1203.
[3] See, for example : http://www.spc.int/tagging/
     http://www.spc.int/DigitalLibrary/Doc/FAME/InfoBull/FishNews/118/FishNews118.pdf
     http://www.spc.int/DigitalLibrary/Doc/FAME/InfoBull/FishNews/141/FishNews141_04_Leroy.pdf