

Ecosystem approach to monitoring pelagic fisheries in the western and central Pacific Ocean

Valerie Allain, Neville Smith, John Hampton, Peter Williams, Graham Pilling, Tim Park, Bruno Leroy, Francois Roupsard, Sylvain Caillot, Deirdre Brogan, Siosifa Fukofuka, Elodie Vourey, Thomas Peatman, Caroline Sanchez, Aurore Receveur, Malo Hosken

Pacific Community (SPC), BP D5, 98800 Noumea

valeriea@spc.int

### Abstract

Long-term collection of data and samples appears critical to contribute to our understanding of the impacts of fisheries and climate change on the marine ecosystems, and for the implementation of management measures for sustainable use of the resources. In the western and central Pacific Ocean, the source of 50% of the worldwide tuna catches, several tools have been implemented to monitor the fisheries and the tuna pelagic ecosystem. Since the 1990's fisheries observers of 15 Pacific Island countries, which are now operating under a regional standardised framework, collect data on fishing effort, catch and bycatch to monitor, among others, changes in biodiversity. This network of 800 observers also collect biological samples (stomachs, muscles, otoliths...) that constitute a biological tissue bank of pelagic fish with more than 95 000 samples available to scientists for biological studies. Since the 1970's tuna tagging programmes have been implemented to monitor the fishing pressure and tuna movements and growth. Fishing-independent data have also been collected during scientific cruises to monitor the lower levels of the trophic web. These multiple initiatives at the scale of half of the Pacific represent a unique opportunity to understand the impact of fisheries and climate change on the tuna ecosystem.