

SCIENCE - DATA COLLECTION

The Pacific Islands Oceanic Fisheries Management Project undertakes activities to strengthen data collection - the corner stone of good fisheries management decisions.

NATIONAL DATA SYSTEMS

National tuna data systems based on the regional tuna data template ensure that countries have efficient and effective data management systems in place.

The regional standard data forms, compiled and issued by the Secretariat of the Pacific Community / Pacific Islands Forum Fisheries Agency (SPC/FFA) Data Collection Committee (DCC), and used by all FFA member countries are one component of national tuna data systems. When strong national fisheries legislation is in place industry readily submits these data forms as a condition of their licence.

The recent introduction of TUFMAN (a tuna fisheries database) allows countries to manage and report on their own data in a timely manner, while data products like CES (Catch and Effort System) continue to provide more detailed information. The final component of a national tuna data system is the National Tuna Data Coordinator who will verify that good quality data is being submitted in a timely manner, and will liaise with industry to continually improve data submissions.

PORT SAMPLING

Port sampling is conducted in 22 ports around the region. All of the fish unloaded from sashimi grade longliners vessels are sampled, while a sub-sample of the fish unloaded from purse-seiners, pole-and-line and the larger frozen-grade longliners are recorded.

Port samplers (they generally work in pairs) collect length measurement and species information. This information is fundamental to the stock assessment work conducted by scientists. Port sampling offers the most convenient and cost-effective method to obtain considerable quantities of these data (compared with observer data, for instance). The length of a fish can indicate its age, and so port sampling helps to monitor structure of the tuna stock.

Stock assessment scientists only require 20% of the total number of unloading vessels to be sampled. However, port sampling can also be used for compliance purposes - to verify the amount of catch declared, and some countries choose to sample 100% of unloading vessels.

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OBSERVER DATA

Observer data is an independent source of data and can be used to verify all other sources of data. It provides information for both compliance and scientific use. It is the only reliable means to determine the extent of non-target catch and discards in the fishery. Additionally, observer data shows information from a wide variety of areas ranging from vessel characteristics, vessel sightings to environmental interactions. It also provides an opportunity for biological sampling. The fact that observer data is an excellent source of varied and independent fisheries data is only tempered by the relatively high cost of deploying observers.

The United Nation's Law of the Sea was the main stimulus for creating observer programmes in the region, and Federated States of Micronesia was the first national observer programme to emerge in 1979. There were some early differences of opinion on how the Law of the Sea should be applied, which eventually led to the treaty between the United States and participating Pacific Island States, and also contributed to the birth of FFA as well as the first regional observer programme. In 1995 the EU South Pacific Regional Tuna Assessment and Monitoring Programme (SPRTRAMP) project allocated funds to record baseline observer data on each of the active fleets and seed funding to start national observer and port sampling programmes.

A new urgent need to increase the capacity of national observer programmes has become apparent with recent efforts to prevent the over-fishing of two of the regions most valuable stocks – yellowfin and, in particular, bigeye tuna. Conservation measures for these stocks require an almost overnight increase from the regionally accepted 20% observer coverage of purse seiners to 100 % coverage before 2010.

TUNA TAGGING

Tagging tuna – releasing them and then seeing where they are recaptured – can provide a lot of additional information about how quickly the fish grow and how far they travel, and the tag-release/recapture ratio can also help in estimating the overall abundance of the stock. Miniaturised electronics and sensors can be incorporated into special tags to provide even more information, including depth and temperature data that provide a great deal about the habits of these open-ocean fish, and how they interact with their ecosystem.

SPC has been tagging tuna in the Pacific Islands region for nearly 30 years. It is not a continuous activity: the tagging has taken place in three main waves in the late 1970s, the early 1990s, and now the mid-2000s. The tagging process itself involves the charter of a commercial pole-and-line fishing vessel for several months and a continuous rotation of SPC's Oceanic Fisheries Programme staff (both past and present) to supervise the tagging operations. The 'recapture' phase is much more complicated, and requires publicity, incentives and rewards at all the potential landing points and canneries for Pacific Island tuna – an intensive follow-up process that lasts for years.