12th Central Pacific tuna tagging cruise: research area shifts west

Since 2008, the tagging cruises organised by SPC have been designed to catch and tag tuna in areas where pole-and-line fishing gear is not efficient due to bait ground absence. Using special trolling gear developed in Hawaii, and targeting the National Oceanographic and Atmospheric Administration's Tropical Atmosphere Ocean (TAO) project buoys anchored between the 180° and the 140°W meridians (Figure 1), the Central Pacific (CP) tagging cruises have improved the overall spatial coverage of the Pacific Tuna Tagging Programme tag releases. Interestingly, they have also greatly increased the number of bigeye tuna tagged to nearly 38,000, which represents more than 92% of the fish captured during this research. Recapture data from tagged bigeye show large-scale movements from the Western and Central Pacific Ocean to the Eastern Pacific Ocean, suggesting that species stocks should be managed at the whole Pacific Ocean scale. The data recovered from archival tagged bigeye (125 fish from 651 releases to date) have provided considerable information on bigeye behaviour and habitat utilisation. This knowledge is important for estimating fish relative abundance and their catchability by type of fishing gear.

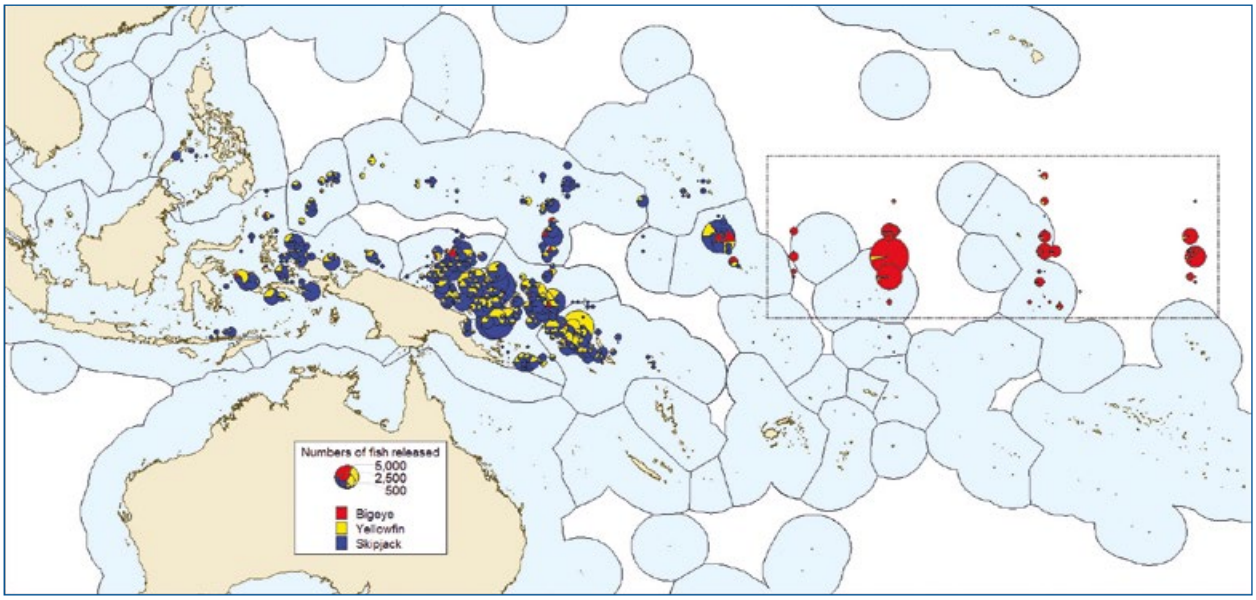

Figure 1. 2006–2015 Pacific Tuna Tagging Programme releases by species; the dotted square shows the Central Pacific releases.

The main goal of the 12th Central Pacific tuna tagging cruise (CP12) is to obtain similar information on the western side of the 180° meridian, where the number of tagged bigeye is considerably smaller than on the eastern side. The research area is along the 165°E meridian where TAO buoys are anchored and along the 5°S parrallel and the 170°E meridian (Figure 2). In addition to these TAO buoys, CP12 will have the opportunity to tag fish associated with drifting fish aggregating devices (dFADs) that two purse-seine companies, Tri Marine and South Pacific Tuna Corporation, have agreed to give us access to. Some of these dFADs will be equipped with acoustic receivers, and tuna and associated species captured around the FADs will be tagged with pressure-sensitive acoustic tags. The information obtained will give us a better understanding of how the dFADs affect these species. The Republic of Korea, the European Union, SPC, the Western and Central Pacific Fishery Commission and the International Seafood Sustainability Foundation (ISSF) are co-sponsoring the research.

FV *Gutsy Lady 4*, the same boat chartered in 2015 for CP11, will be our tagging platform for CP12 (Figure 3). Although its home port is a long way from the targeted fishing zone, the boat is considered to be the best option available in the region to meet the requirements of this type of cruise.

We plan to attach a minimum of 2000 conventional and 50 archival tags to bigeye tuna during the cruise (Figure 4). Depending on the species composition of tuna schools, yellowfin tuna will also be tagged. Five dFADs will be equipped with satellite acoustic listening stations that will each record and send data transmitted by 20 fish implanted with sonic transmitters.

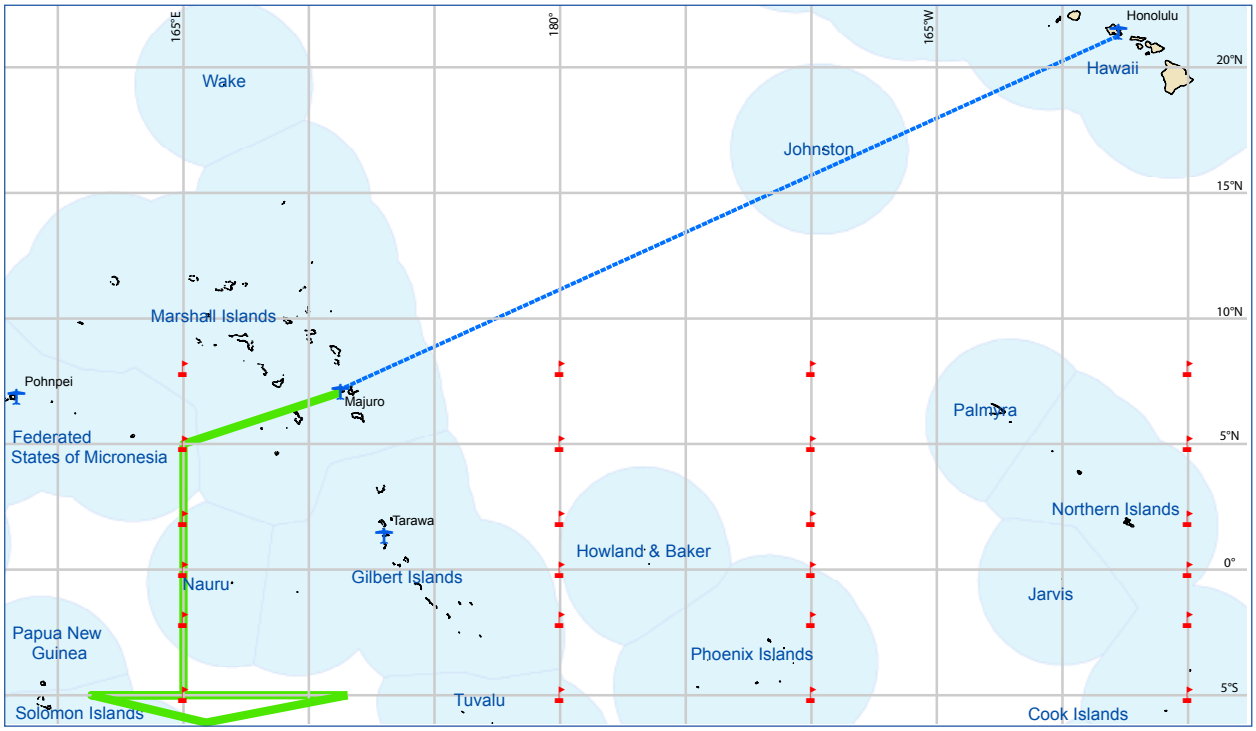

Figure 2. Approximate planned track of the 12th Central Pacific tuna tagging cruise (green line). The red flags are the anchored TAO buoys; the dotted blue line is the transit leg between the boat's home port (Honolulu) and Majuro, which is the departure point for the scientific research.

Figure 3. Seven pepole took part in the 12th Central Pacific tuna tagging cruise aboard FV *Gutsy Lady 4* (image: Fabien Forget).

Figure 4. A bigeye tuna implanted with an archival tag ready to be released (image: Fabien Forget).

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