

ALBACORE ARCHIVAL TAGGING PROGRAM

2017 Newsletter

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Progress in 2017

Over the past six months, meetings were held at Southwest Fisheries Science Center, four recovery reports were provided for the backlog of recovered tags that had previously not been analyzed, and a comprehensive progress report was written and submitted to both the AFRF board as well as Gerard Dinardo, director of the Fisheries Resources Division at Southwest Fisheries Science Center. For access to the meeting minutes, recovery reports and/or the program progress report please contact the AFRF board*. **Dissemination of these materials is at AFRF board's discretion.*

Recovery Reports Summary

All recovered tagging data have now been processed. There were four tags that had not been analyzed. Two of these tags were recovered in 2014 and the other two in 2016. The maps, migratory behavior, diving behavior, oceanography, and physiology information from the remaining four recoveries are now available in the recovery reports.

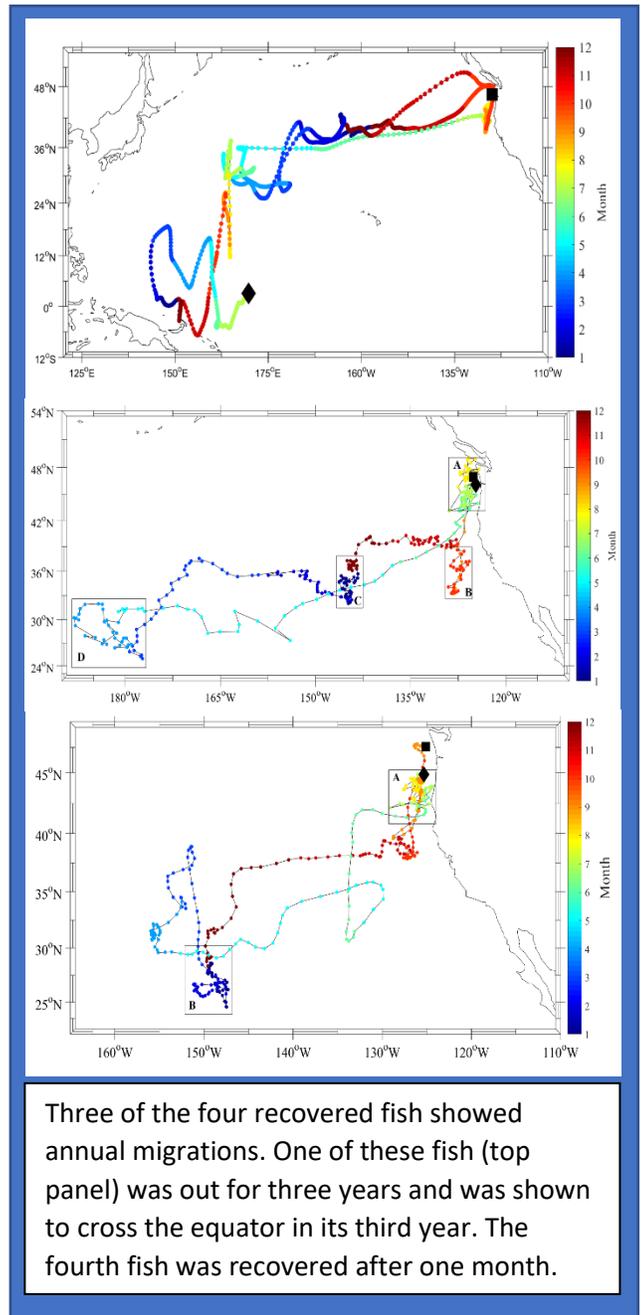
The big highlight from these recoveries was the three-year deployment of tag 1490108 (pictured on the top panel to the right). This tag showed a 'normal' north-off-north migration for its first year then remained east of 180° in the second year. During its third year, the fish migrated below the equator. While there is always some uncertainty in the locations of these fish, the corresponding shift in temperatures for this fish support this movement. Information like this is crucial to understanding stock structure.

Along with the reports, videos of these tracks are also available through the AFRF board. Again, dissemination of these videos is at the board's discretion.

Progress Report Summary

A progress report detailing all the work completed to date was submitted to the board as well as to Gerard Dinardo, director of the Fisheries Resources Division. The report detailed all migration patterns, deployment and recovery information, physiological and behavioral responses to temperature, as well as productivity to date.

Some highlights given in this report included the following: (i) 1,086 tags have been deployed along the U.S. west coast, (ii) 37 of those tags have been recovered providing detailed environmental, physiological, and behavioral data for 42 annual migrations, (iii) Description of the timing and routes associated with 6 different migration types have been recorded, with movements across the North Pacific, (iv) Documentation of ontogenetic recruitment to different fisheries including a 3-year track that shows movement across the equator into the South Pacific. (v) Detailed physiological and behavioral response to environmental



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temperatures revealing a mechanistic understanding of thermal habitat limitations, (vi) 3 peer-reviewed publications, 1 dissertation, and at least 12 conference presentations, (vii) The first publication resulting from the AATP is cited 3 times in the current stock assessment report and provides information on stock structure and movement patterns, and (viii) The data from the AATP addresses the simplified spatial structure of North Pacific albacore, one of the key uncertainties in the current stock assessment.

Privacy and Trade Secrets

The sharing and analysis of the electronic tagging data raised concerns at the AAFA meeting. Due to the Public Access to Research Results (PARR), results from the electronic tagging program must be shared with the general public. However, there is some leeway in how the data are shared. In meeting with Gerard in June, it was agreed that only processed data (i.e., in the form of maps or graphical summaries of the data) would be shared with the public – not the raw locations and data. It should also be stressed that the electronic tagging data does not provide enough information to tell someone unfamiliar with the fishery where to catch fish. The locations are not real-time, meaning we only get the location data after the fish has been caught and the tag has been returned to SWFSC. Also, these locations are not as precise as those in the logbook data and are only accurate to ~300 km on average. Research using this data can give fishermen and scientists insights into which oceanographic conditions are optimal for catching albacore and how albacore move in and out of the United States EEZ. The tagging data does not, however, disclose the exact location of a school of albacore.

2017 Deployments and Recoveries

Unfortunately, no tags were deployed. AAFA put out an official recommendation to their vessels to not participate in the tagging program. While other boats stepped up, trips were not conducted due to logistical issues between these boats and the Southwest Fisheries Science Center. Because the trip did not go this year, the program has approximately 80 tags as well as charter money for a trip next year.

No recoveries were made this year. Thus, the next recovery will come with a free recovery report, given the current tag analysis agreement.

Plans for 2018

At this point in time, no proposal has been submitted for additional funds (as far as I am aware). This means that, although funds and tags exist for next year's tagging trip, further funding opportunities must be found in order for the tagging program to continue. We plan to present both a program update as well as a scientific presentation at the Tuna Conference in May at Lake Arrowhead this year. It is our hope that these presentations will raise awareness and reinvigorate interest in the tagging program.

Also in May, a scientific report will be available that uses all of the archival tagging data to investigate diving behavior of albacore in different oceanographic conditions. This study examines the depths of albacore and the probability that they will encounter surface fishing gear as a function of sea surface temperature, turbidity, chlorophyll and mixed layer depth. Understanding how oceanography changes susceptibility to fishing gear will provide a mechanistic (i.e., based on fish behavior) rather than statistical approach to calculating catchability.

