

American Fishermen's Research Foundation

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Central California Joint Cable / Fisheries Liaison Committee Commercial Fishing Industry Improvement Fund

Attn: Grant Committee / Chris Kubiak
P.O.Box 2033
Morro Bay, CA 93443-2033

DATE SUBMITTED: February 26, 2018

PROJECT TITLE: American Fishermen's Research Foundation Albacore Archival
Tagging Data Processing and Distribution

GRANTEE: American Fishermen's Research Foundation (AFRF)

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EMAIL: WFOA@CHARTER.NET

PROJECT SUPERVISOR: WAYNE HEIKKILA

AMOUNT REQUESTED: \$ 15,000.00

MATCHING FUNDS: YES - SEE BELOW

PROJECT START DATE: JULY 1, 2018

COMPLETION DATE: JUNE 30, 2019

PROJECT DEFINITION: AFRF proposes this request as an extension of the 2017 grant received from the Cable Committee of \$15,000 to supplement the ongoing data sourcing and compilation project by Stephanie Snyder PhD. through 2018. Results so far have exceeded expectations with much more data extracted from the stored tags. (See Attachment). We now have to move forward assimilating results to scientific formats, publications, and presentations (Snyder will be presenting at the 69th Tuna Conference in lake Arrowhead - May 2018) in order to be recognized as a scientific resource backing up other international research and data on North Pacific albacore tuna in the International Science Committee and Albacore Working Group(ISC-ALBWG) when conducting international stock assessments.

This ongoing project requires more effort from AFRF's managing body Western Fishboat Owners Association (WFOA) in managing the project and distribution of the results and also to move toward a larger more comprehensive tuna project for the North Pacific ocean. The funding request is to help with this effort.

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HISTORY: American Fishermen's Research Foundation (AFRF) has been working on a cooperative research project with Southwest Fisheries Science Center (SWFSC) - NOAA/NMFS tagging west coast albacore tuna with archival tracking tags since late 2001. Nearly 1,000 tags have been deployed by U.S. albacore vessels and technicians from the SWFSC in that time frame and over 30 tags have been recovered with very interesting information regarding albacore migration, feeding patterns, and daily movements.

AFRF has realized that a more pro-active approach to processing this data is essential and in 2017 AFRF hired Dr. Stephanie Snyder to process and write reports on the remaining tags that have languished at SWFSC. The processed data is fascinating and would help support the U.S. troll and pole west coast fisheries in management and scientific venues ongoing that look at health and abundance of the stock and try to make regulatory decisions for the future all which affect local fishermen.

Cable Grant Funds Distribution if approved:

2018 - \$ 15,000 - To be used for administration of the project through 2018 as well as project data distribution and presentation to management RFMO's and scientific bodies and general public through printing, mailings, legal review, and social media. WFOA would in most cases invoice AFRF for admin and management and distribution costs.

Matching Funds 2018: AFRF will receive \$76,400 from NOAA/NMFS through 2018 to be directed only to purchase of tags and securing and paying a vessel to deploy 65 tags during the 2018 albacore west coast season. These funds will be invoiced when deliverables are met. All of that funding is directed. Thus, AFRF is requesting a total of \$30,000 from the Cable Committee and Oregon Albacore Commission to take care of the non-directed expenses listed above.

Oregon Albacore Commission - Approved February 2018 - \$ 15,000

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Long Term Comprehensive Program: The following is just in the planning stage, as AFRF is working with Gerard DeNardo PhD Science Director of the SWFSC to develop a comprehensive long term research project. The grant funding we are now requesting will be to help bridge the gap from the focused work we are completing in 2018 to developing the more comprehensive project involving Pacific albacore and other tunas of economic value to US fishermen. Given that part of the 2018 award would be used to set up a future comprehensive plan co-operating with NOAA/NMFS We do not foresee requesting further cable Committee funding for this proposed segment in the future.

DRAFT - AFRF/NOAA Offshore Albacore Tagging and Ocean Awareness Project: March 2018

American Fishermen's Research Foundation
Western Fishboat Owners Association
POB 992723
Redding, CA 96001

Cooperative Research between AFRF and NOAA/NMFS to place archival and traditional dart tags on albacore, collect environmental information, test for ocean acidification, collect information on other fisheries in the region especially IUU vessels targeting albacore tuna, collect ocean debris in the gyre, collect albacore for otolith data.

Background: AFRF has carried out tagging and cooperative research with NOAA-SWFSC for 30 years and tagging since 2001 in which over 1,000 archival tags have been placed on coastal albacore tunas in the summer months. No fish have been tagged offshore do to the amount of time required of a technician

to be onboard (up to 100 days compared to 3-7 on the coast). But such a project if crews are trained can be combined with a number of other.

There has not been a fishery in the offshore/dataline region of the Pacific for about 12 years due to fuel costs, lack of albacore which seem to have shifted to coastal zones and pressure from IUU driftnet vessels. However, more boats are planning on exploring the region once again as it appears the pattern may be shifting back to an offshore fishery similar to the 1990's and early 2000's.

Proposed Dates: May 2019 – July 2019, alternative May 2020 – July 2020

Two Albacore Troll Vessels- Albacore fishing vessels in the offshore area are generally 70-100 feet in length and can remain at areas for up to 100 days or longer. All are well equipped and pass all USCG requirements, registered within the IATTC and WCPFC management areas. The US of existing albacore vessels lowers the cost immensely as opposed to use US Government research vessels which would be cost prohibitive.

Area: 160W – 170E, 35N – 45N

Tagging to be conducted by trained crew onboard albacore vessels. NOAA/NMFS will do training and training videos in 2018 and early 2019. Each tag insertion will be recorded via video camera and if possible live-stream via satellite back to NOAA in real time.

AFRF has a long history of tagging both archival, pop-up, and dart tagging back to the 1980's

AFRF/WFOA vessels can do this much more economically than hiring government vessels

This project description will be expanded with suggestions from SWFSC/NOAA soon as they hold industry meetings with tropical and temperate water tuna groups do develop a long term research plan for Pacific tunas acceptable to the management and scientific bodies.

AFRF wishes again to thank the cable committee for its consideration of this request. It does encompass a vast area of the Pacific Ocean but when tuna's and albacore are considered it affects not only Central California fishermen who fish in many areas, but U.S. fishermen of all types and targeting many species in direct and indirect manners.

Submitted By:



Wayne Heikkila
Executive Director

American Fishermen's Research Foundation (AFRF) founded in 1971, is involved in the ongoing stock assessment of North Pacific albacore as well as the management and regulation in both hemispheres of the Pacific ocean. At considerable expense AFRF continues to represent the U.S. albacore trollers and baitboats at management and scientific forums, and continues to be involved in the scientific process through the International Science Committee - Albacore Working Group (ISC-ALBWG). AFRF represents all U.S. albacore trollers and baitboats in maintaining research and data collection that benefits ALL U.S. albacore vessels. AFRF is funded by a per ton assessment paid by AFRF contracted buyers. AFRF also secures research grant funding in cooperation with NOAA/NMFS for items such as archival tagging expenses.

AFRF Contracted Buyers: Bornstein Seafoods Inc., Bumble Bee Seafoods, Chicken of the Sea International, C2C Fisheries, Driscoll's Wharf, Hag Fish LLC, High Seas Tuna Inc., InterOcean Fisheries, Island Trollers Inc., Jessie's Ilwaco Fish Company, JK Fisheries, Ilwaco Landing LLC, Oregon Seafoods, Pacific Seafood Group, Papa George Gourmet Albacore, Pelican Packers Inc., Seafood Producers Co-op, Star Kist Foods, Trident Seafoods, Tri-Marine International, Wild Planet Foods Inc

ALBACORE ARCHIVAL TAGGING PROGRAM

2017 Newsletter

In this issue:

- Progress in 2017
- Recovery Reports Summary
- Progress Report Summary
- Privacy and Trade Secrets
- 2017 Deployments & Recoveries
- Plans for 2018

Progress in 2017

Over the past sixth 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.

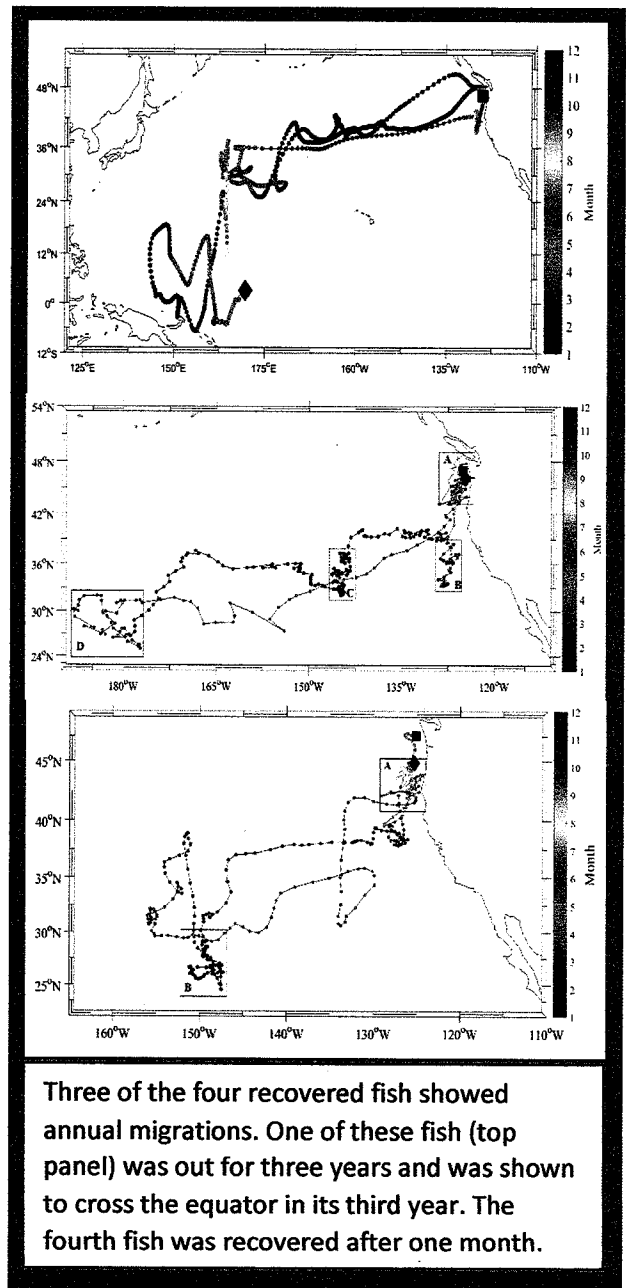
The big highlight from these recoveries was the three-year deployment of tag 1490108 (pictured on the top panel to the right). This tag showed a 'normal' north-off-north migration for its first year then remained east of 180° in the second year. During its third year, the fish migrated below the equator. 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



Three of the four recovered fish showed annual migrations. One of these fish (top panel) was out for three years and was shown to cross the equator in its third year. The fourth fish was recovered after one month.

Stephanie Snyder, albacorettagging@gmail.com

ALBACORE ARCHIVAL TAGGING PROGRAM

2017 Newsletter

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

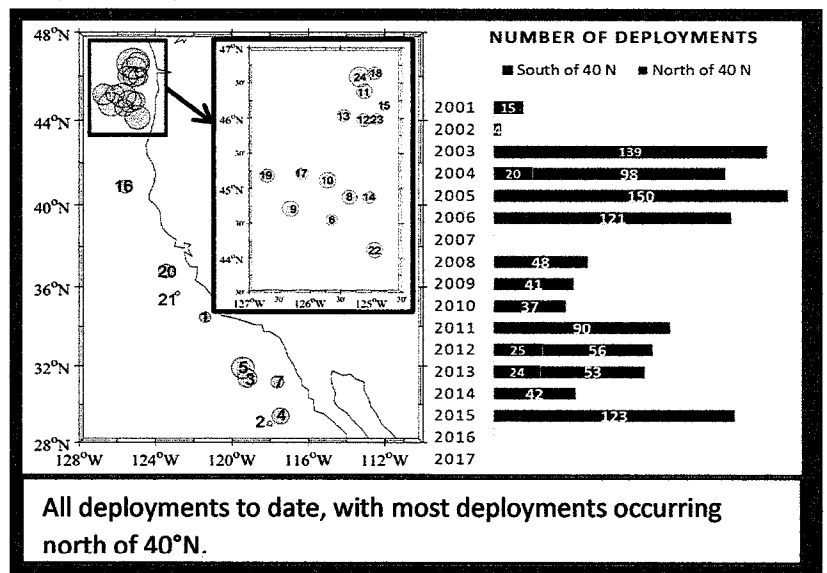
Unfortunately, no tags were deployed. AAFA put out an official recommendation to their vessels to not participate in the tagging program. While other boats stepped up, trips were not conducted due to logistical issues between these boats and the Southwest Fisheries Science Center. Because the trip did 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.



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February 26, 2018

Central California Joint Cable Fisheries Liaison Committee
Attn: Chris Kubiak
P.O. Box 2033
Morro Bay, CA 93443

Re: Funding Request for Albacore Archival Tagging Data Compilation

As the Cable Committee knows, and has generously helped fund a segment of this ongoing research in 2017, American Fishermen's Research Foundation (AFRF) has been working on a cooperative research project with Southwest Fisheries Science Center (SWFSC) - NOAA/NMFS tagging west coast albacore tuna with archival tracking tags since late 2001. More than 1,000 archival tags have been deployed by U.S. albacore vessels and technicians from the Southwest Fisheries Science Center (SWFSC) in that time frame. 36 tags have been recovered with very interesting information regarding albacore migration, feeding patterns, and daily movements. This is even more essential know after a disruption of ocean and climate conditions over the past three years.

This project will cost more than \$75,000 in 2017- 2018 which is all devoted to tags, tagging vessels, and data compilation. The Cable Committee awarded AFRF \$15,000 in 2017 which was devoted to the above costs. To bridge the gap before moving with NOAA to a larger comprehensive program beginning in 2019 we are requesting an additional \$15,000 from the Cable Committee. AFRF also has requested the same from the Oregon Albacore Commission which was recently approved for 2018-2019 to help administer, review, present, and publish information from this project.

In normal seasons AFRF, from tonnage fees, could handle these costs but the 2017 season saw low catches forcing out organizations to severely cut expenses while trying to maintain the integrity of this specific project. If approved, we do not anticipate further requests beyond 2018 from the cable committee for this project.

AFRF realized that a more proactive approach to processing this data is essential and AFRF hired Dr. Stephanie Snyder in 2017 to process and write reports on the remaining tags that have languished at SWFSC. I have submitted a couple reports already to the Cable Committee from her work in 2017 and have attached a short version to this request.

Sincerely,



Wayne Heikkila
Executive Director

AFRF DIRECTORS '2018'

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