

## American Fishermen's Research Foundation News ©

AFRF has been involved in archival tagging, selenium research, and management and regulatory issues over the past few months. Most of this is ongoing and important to gather data on albacore as we have for 38 years in order to maintain access to the stocks for U.S. albacore fishermen. AFRF was founded in 1971 and continues to promote research and education for Pacific troll and baitboat caught albacore. AFRF appreciates the support from processors and fishermen alike.

**AFRF Board Meeting:** The AFRF board met on November 5<sup>th</sup> in San Diego for its' fall meeting. Tagging and funding, as well as selenium research were the main issues on the agenda. The next AFRF board meeting will be a conference call in January and then a regular board meeting in Astoria during the WFOA/AFRF annual meeting, March 30 - April 2, 2008.

**American Association for the Advancement of Science (AAAS):** AFRF again will donate \$2000 to this event to be held February 14-18, 2008 in Boston, MA. AFRF has taken part in this the past three years. For more information go to: <http://www.aaas.org/meetings/>

**Pacific Fisheries Technologists Conference:** AFRF as well as WFOA are sponsors to the 59th Pacific Fisheries Technologists Conference in San Francisco, CA from February 3-6, 2008 at the Hotel Whitcomb. Over 100 abstracts have been submitted and some of the speakers include Dr. Nick Ralston, Dr. Joyce Nettleton, Dr. Vidar Wespestad. Topics covered will include Aquaculture and Feeds, Biochemistry, Byproducts, Education/Extension, Engineering, Environmental Issues, Fish Harvesting and Handling, Marine Biology, Marketing, Microbiology, Processing, Regulatory Issues, Safety, Shellfish, Value-added Products, Waste Management. This Conference is being organized by Pamela Tom - PFT President, University of California, Food Science and Technology Department. For more information see: <http://seafood.ucdavis.edu/pft2008/>

**Selenium Research Update:** The importance of selenium in seafood evaluations regarding mercury exposure has been emphasized at a recent series of international meetings in Europe and the United States. Selenium's role in counteracting risks associated with mercury exposure has been recognized for over 40 years, but is only recently becoming understood. Selenium is a nutrient that is essential for the normal function and healthy development of brain tissues. Animal studies have demonstrated that mothers exposed to excessive amounts of methylmercury are unable to deliver selenium to the developing brains of their offspring, and the important functions of selenium in the brain become impaired. The research indicates that selenium is the specific target of mercury, which binds to selenium in the body so that it is unavailable to perform its important functions. Therefore, additional dietary selenium is an effective means of overcoming mercury toxicity. Since ocean fish are among the richest dietary selenium these findings coincide with the expectation of nutrition researchers that the health benefits of ocean fish consumption outweigh the potential risks from the relatively small amounts of mercury that are also present.

Recent evaluations of human studies of maternal seafood consumption reveal negative effects if the mercury comes from eating pilot whale or certain varieties of shark meats, but these effects are not seen if the mercury comes from eating normal varieties of ocean fish. These studies find that mothers who eat more ocean fish during pregnancy have children that perform better in school and have better social

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abilities. However, children of mothers that avoided eating fish during pregnancy performed poorly in comparison to children of mothers that regularly ate fish. Pilot whale and certain shark meats are very unusual in that they contain excessive amounts of mercury relative to selenium. For example, in the population studied in the Faroe Islands, the majority of their mercury exposure came from eating pilot whale meat, one of the extremely rare foods known to contain more mercury than selenium. This may explain why children with high mercury exposures had slightly lower test scores than children that were exposed to less mercury. At birth, some of these children had blood mercury levels that were nearly as high as their selenium levels, indicating the selenium in their blood might not have been available at optimal levels to nourish their brain tissues earlier in gestations. Mercury levels in pilot whales are approximately 50 times higher than the amounts present in the codfish that are also commonly eaten by this population. Similar effects were seen in New Zealand where shark meat was the primary source of mercury exposure. Although typical varieties of ocean fish generally contain far more selenium than mercury, certain types of shark are also known to accumulate mercury in excess of selenium. As a result, these varieties of shark may be almost as hazardous for maternal consumption as pilot whale meat.

In the Seychelle Islands where people typically eat up to 20 times more ocean fish than the average American, the average maternal mercury exposure was greater than that observed in the Faroes. However, in a series of studies, no harmful effects have been associated with fish consumption. The amounts of mercury in these fish are small in comparison to the rich amounts of selenium that are also present. Mothers that eat these fish have adequate selenium in their blood required for nourishing the fetus to maintain healthy brain development, and consistently have relatively little mercury present.

The most recent, largest, and best performed study of the effects of maternal fish consumption on child development has been performed in the United Kingdom. The effects of maternal nutrition on their children's IQ and numerous indicators of social and scholastic performance have been monitored since birth throughout the past 16 years. This study has found that the more ocean fish their mothers ate during pregnancy, the better their children are doing scholastically and socially. However, children whose mothers avoided eating ocean fish during pregnancy perform poorly compared to other children. This appears to be due to nutrients such as selenium and omega-3 fatty acids which are essential for healthy brain development. Therefore, the benefits of fish consumption during pregnancy were shown to outweigh the risks associated with the relatively small amounts of mercury that were also present.

Information regarding these newly recognized aspects of seafood and freshwater fish mercury issues have recently been shared with scientists and representatives of regulatory agencies at a series of international meetings including; the EPA Fish Forum in Portland, Maine, the International Society of Trace Element Research in Humans (ISTERH) meeting in Heraklion, Greece, the Society for Environmental Toxicology and Chemistry (SETAC) international meeting in Milwaukee, Wisconsin, and the International Neurotoxicology meeting in San Antonio, Texas. More presentations regarding the mercury-selenium interaction are planned for the coming months.

Based on previous work, toxic effects of methylmercury poisoning are expected to be counteracted by fish supplemented diets, regardless of whether methylmercury exposure is continued or discontinued. Further studies are planned that will investigate the interactions and the effectiveness of selenium from ocean fish in preventing and treating methylmercury toxicity. However, it is important to recognize that unlike ocean fish, fresh water fish can vary in their mercury and selenium contents depending on the regional concentrations of these elements. Likewise, regional selenium levels have shown to have an effect on methylmercury bioaccumulation. Far more attention needs to be devoted to assessing risks of mercury exposure from freshwater fish.

**Archival Tagging:** 109 tags that were going to be deployed in 2007 never made it on the albacore. The weather and other factors contributed to having the fish biting just when the F/V Nightwind left port. Thus the tags will have to be deployed in 2008. The preference is to combine them with other tags and

deploy them in the central North Pacific if logistics and costs can be worked out. Other wise they will most like be tagged along the coastal zone.

AFRF & NMFS - SWFSC has been tagging since late 2001 and over 500 tags have been deployed. The data and information however has been piling up at SWFSC due to budget issues. SWFSC has hired a person to do the data compilation and she has been working on this since Mid-August and I am told making good progress. A full draft report is scheduled to be available about the time of the annual WFOA/AFRF meeting.

## **MANAGEMENT ISSUES:**

**Peter Flournoy's Report of the 4<sup>th</sup> WCPFC Meeting - Guam 2007:** The first thing to report is that AFRF was **accepted as an observer** to the WCPFC for this 4<sup>th</sup> annual meeting of the Commission. There were several other observers, however, it is believed that AFRF may be the only observer ENGO ro both the IATTC and the WCPFC. Being an observer has the advantage of getting new Commission documents at the same time as the U.S. Commissioners, and also allows the making of statements, with the Chairman's permission.

The USG accomplished most of its objectives for the meeting relating to the adoption and implementation of monitoring, control and surveillance measures since the Commission adopted a framework and schedule for implementing a Regional Observer Program, agreed on housing the Commission's VMS system in Australia at a lower cost, and decided on an active/inactive list of fishing vessels in association with the vessel register and authorization to fish. The Commission also adopted a revision to the Conservation and Management Measure (CCM) describing the process for putting fishing vessels on the IUU list. After lengthy and contentious discussions over a three day period, the Commission put two Ecuadorian purse seine vessels on the IUU list, and one Taiwanese vessel (which may be removed from the list intersessionally whenever FSM settles the case with Taiwan. The Commission also declined to put two Senegalese and one Taiwanese longline vessel on the IUU list.

The most serious issue for AFRF at this meeting was the continuing attack by the EC, Australia, New Zealand, Greenpeace and others on **high seas transshipment**. Even though AFRF and WFOA negotiated a provision in the Treaty (ART. 29(5)) to permit our traditional high seas transshipping arrangements to continue, at every meeting there is a push for a general ban on high seas transshipping, with no exceptions, as a necessary weapon against IUU fishing. This year the Republic of the Marshall Islands suggested a very clean and workable resolution from which troll vessels would have been exempted, while Australia, working with Japan, came up with a very complicated and burdensome resolution from which it was not clear that troll vessels would have been exempt. It wasn't until the last day of the meeting that Glen Hurry, the Chair of the Commission announced that since no agreement could be reached and the measure would be put off until the Technical and Compliance Meeting 4 next year. For some inexplicable reason, the U.S. seems unable to just push for a simple exemption, similar to what the IATTC, with EC concurrence, passed two years ago.

The **resolutions dealing with North Pacific and South Pacific albacore were continued** with no discussion. The South Pacific albacore resolution is still without any scientific basis, however, since it does not yet affect the U.S. albacore troll fleet there was no reason to put it in the spotlight.

While not directly affecting albacore, but boding ill for agreement on any future management measures for that species, the **Commission members were once again unable to agree on management measures for the purse seine fishing and long line catch of big eye tuna, or the purse seine or long line catch of yellowfin tuna**. A proposal for a 90-day purse seine closure on fish aggregating devices (FADs) and a longline catch reduction of 25% from 2001-2004 or 2004 (US and PRC) catch levels was not accepted because the Asian bloc countries would not agree to a FAD closure longer than 1 month and that further

longline closures not be considered until next year. Although, the US supported the proposal for the FAD closure, concern was expressed regarding whether the measure could be adequately and equitably enforced until an observer program was fully operational. The U.S. and New Zealand, Australia, and the FAA continued to push for a three month closure on FAD fishing.

The most contentious issue at the meeting was consideration of **applications for cooperating non-member (CNM) status**. The Commission denied the applications of Ecuador, El Salvador and Senegal when the FFA, Australia and New Zealand, concerned about increasing capacity in the convention area, refuse to separate that issue from the one of qualifying to be a CNM. The US took the position that the membership decision should be based solely on the Commission's existing criteria and that capacity concerns should be addressed through the application of current and new CMMs. The Commission provided Kiribati with a 1-year exemption from Convention requirement that only vessels from member or cooperating non-member countries could be licensed, so that they could continue to license Ecuadorian and El Salvador vessels to fish within their EEZ. The decision to deny CNM status to the flag states of these vessels creates great confusion as to the status of those vessels fishing on the high seas areas within the Convention area.

Largely due to the manner in which the CNM application were mis-handled, the most disappointing, and perhaps dangerous, event for AFRF and WFOA was the **absolute breakdown in cooperation between members of the IATTC and the WCPFC**. Hopefully the scientist and the two secretariats can continue to strengthen their cooperation. However, the WCPFC's refusal to admit El Salvador and Ecuador as Cooperating Non-Members set the stage for a very fruitless meeting of the two Commissions, where the Mexican Chair of the IATTC apparently refused to cooperate in anything but the exchange of the most basic statistical information. Since the U.S. albacore troll fleet is subject to both Commissions, this is a very troubling development.

Sean Martin, Marija Vojkovich, and Paul Krampe received appointments as Alternate Commissioners running through 2009 right before the meeting. The Commissioners seemed to work well together, although Steve Grasso, the ENGO Commissioner was absent. The next meeting of the **Commission will be in Busan Korea, December 8-12, 2009**.

An issue around the edge of the meeting was those high seas areas which are surrounded by the EEZs of coastal states and given the nickname **high seas "donut holes"**. There are many of these out in the western and central Pacific, probably the best known to our fishermen is the one off of American Samoa surrounded by our EEZ and that of the Cook Islands and Kiribati. Recently, ENGOs have been pushing to have these areas declared to be Marine Reserve areas with no fishing.

A more worrisome development at this years meeting of the WCPFC was the renewed vigor with which some of the Pacific Island States, particularly PNG, began calling for ALL the high seas donuts in the WCPFC Treaty area to be closed to ALL fishing. This is a development which will have to be followed closely. Again, I am not aware that this would immediately affect any of our vessels, however, who knows what the future will bring.

**AFRF Buyers:** Arrowac Fisheries, Bluewater Fisheries, Bumble Bee Seafoods, Carvalho Fisheries, Chicken of the Sea International, Driscoll's Wharf, InterOcean Fisheries, Island Trollers Inc., Jessie's Ilwaco Fish Company, Ilwaco Landing LLC, Mary-Lu Seafoods, New Day Fisheries, Pacific Seafood Group, Papa George Gourmet Albacore, Pelican Packers Inc., Seafood Producers Co-op, Shamrock Fisheries, Star Kist Seafoods, Starvin Marvin Seafoods, Trident Seafoods, Tri-Marine International, Whole Foods Select Fish

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