

Bluefin Tuna Biological Sampling Program: Commercial and Recreational fisheries

(Updated: 5/6/2013)

- Primary Objective – Collect bluefin tuna otoliths representative of the catches in each fishery, to permit assignment of stock origin and direct ageing.
- Secondary Objectives –
 - collect additional hard parts (spines, vertebrae) from bluefin tuna
 - collect reproductive and muscle tissues from bluefin tuna, to permit the evaluation of reproductive status
 - collect biological samples from other tunas

This program was initiated in 2010, taking a multi-pronged approach to try to achieve representative biological sampling of the U.S. bluefin tuna fisheries along the eastern seaboard (the Pelagic Observer program collects samples from bluefin caught in the Gulf of Mexico). The SEFSC began funding the Large Pelagic Biological Survey (LPBS), an add-on to the ongoing Large Pelagic Survey covering the rod and reel fishery (both commercial and recreational) from Virginia through Maine, June-October. The SEFSC also began funding an add-on to the ongoing NMFS-NER Port Biological Sampling Program (REMSA Inc., contractor).

A number of obstacles were encountered. Landings of bluefin can be scattered across widely distributed small fishing pressure landing sites, and occur sporadically, making it difficult to efficiently collect samples. Bluefin are landed without heads in the longline fishery, and are frequently landed without heads in the rod and reel and the harpoon fisheries. Even when dealers or fishermen are willing to set aside heads for later processing by the samplers, cuts are frequently made so as to preserve the maximum amount for sale; such cuts often destroy the otoliths. Samplers from the NMFS-NER Port Biological Sampling Program (PBSP) also often found that their sampling efforts overlapped those of academic researchers in the New England area (from the Gulf of Maine Research Institute [GMRI] and the Large Pelagics Research Center [LPRC]), who had established a rapport with the local fishermen and dealers.

A number of refinements were introduced in 2011 in order to improve sampling levels:

- Improved coordination of sampling effort (LPBS, PBSP, GMRI, LPRC)

- Opportunistic sampling initiated for LPBS component (samplers could respond to info on BFT landings)
- For the recreational component (covered by the LPBS), large coolers were placed at key sites where anglers could leave fish after cleaning

Collaborative arrangements were made with GMRI and LPRC researchers, with whom NOAA has a history of research collaborations, through which the collected specimens would be shared within a research team coordinated by the SEFSC. The PBSP collections of bluefin samples were suspended beginning in 2012, after deferring to the GMRI/LPRC researchers to collect the bulk of the New England specimens (a judgment was made that it would be impractical to sample the remaining scattered landings not covered by the GMRI/LPRC efforts). Further improvements might be gained by increased outreach, involvement of dealers/fisherman, collaborations with researchers, etc.

2010 & 2011 Commercial Bluefin Fisheries Sampling Results

(NMFS-NER Port Biological Sampling Program / REMSA Inc.)

| Year | No. Fish | Otoliths | Spines | Vertebrae |
|-------------|----------|----------|--------|-----------|
| 2010 | 160 | 26 | 149 | 18 |
| 2011 | 262 | 75 | 196 | 65 |
| Grand Total | 422 | 101 | 345 | 83 |

NOTE: Sampled fish were landed primarily in Gloucester MA (North Atlantic Traders)

A small number were from other ports

2010 - 2012 Sampling Results, NMFS Large Pelagics Biological Survey

(Primarily recreational, but may include commercial)

| Year | No. Fish | OTOs | Spines | Vertebra | Gonad |
|-------------|----------|------|--------|----------|-------|
| 2010 | 32 | 13 | 29 | 27 | 13 |
| 2011 | 234 | 218 | 217 | 212 | 58 |
| 2012 | 235 | 220 | 206 | 185 | 55 |
| Grand Total | 501 | 451 | 452 | 424 | 126 |

NOTE:

2010: 7 school, 25 large school

2011: 1 young school, 146 school, 69 large school, 17 small med., 1 lrg. med.

2012: 131 school, 83 large school, 20 small med., 1 lrg. med.

Sampled fish 2010-2012 landed in Maryland (38%), Massachusetts (46%), Virginia (8%), New Jersey (5%), New York (2%), and Delaware (1%)

The LPBS has also collected hard parts from other tunas, primarily yellowfin.

In addition to these samples, the GRMI/LPRC labs have over 1300 bluefin tuna samples collected 2010-2012. At this time, they have provided ages from 330 specimens from 2010 and 370 from 2011.