

Red Drum (*Sciaenops ocellatus*) Fin Clip Program
and
Tarpon (*Megalops atlanticus*) Genetic Recapture Program

FWC AGREEMENT NO. 07144

1ST PROGRESS REPORT
OCTOBER 1 – OCTOBER 31, 2007



PREPARED FOR:

LUIZ R. BARBIERI, PH.D.

PROGRAM ADMINISTRATOR
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SUBMITTED BY:

CAROLE NEIDIG

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NOVEMBER 14, 2007

MML TECHNICAL REPORT NO. 1227

November 14, 2007

Luiz R. Barbieri, Ph.D.
Program Administrator
Marine Fisheries Research Section
FWC - Fish & Wildlife Research Institute
100 Eighth Avenue SE
St. Petersburg, FL 33701-5095

Re: 1st Progress Report, Red Drum (*Sciaenops ocellatus*) Fin Clip and Tarpon (*Megalops atlanticus*) Genetic Recapture Programs. October 1- October 31, 2007, FWC Agreement No. 07144.

Dear Dr. Barbieri,

Please accept the enclosed document as our 1st Progress Report to the Florida Fish and Wildlife Conservation Commission for the above referenced project. The report covers work performed from October 1 through October 31, 2007. Section headings included in this report are as follows: (A) Collaborate in Research to Demonstrate the Benefits of Red Drum Stock Enhancement in a Large Estuarine Ecosystem, and (B) Collaborate in Research to Estimate Recapture Rates and Examine the Interconnectivity of Tarpon among Florida Estuaries.

The invoice for this report was mailed under separate cover to your attention by the MML business office. On behalf of the Mote Marine Laboratory Center for Fisheries Enhancement we look forward to continuing our successful partnership with the Florida Fish and Wildlife Conservation Commission on these two valuable projects.

Sincerely,

Carole L. Neidig
Staff Scientist
Center for Fisheries Enhancement

Cc: Ken Leber, Ph.D., Terri Deppe, Rusty Holmes (MML Research Office)

Red Drum (*Sciaenops ocellatus*) Fin Clip and Tarpon (*Megalops atlanticus*) Recapture Programs

**DRAFT FINAL REPORT
OCTOBER 1 – OCTOBER 31, 2007**

A. Collaborate in Research to Demonstrate the Benefits of Red Drum Stock Enhancement in a Large Estuarine Ecosystem

The Angler Red Drum Fin Clip Program based at Mote Marine Laboratory is a component of Project Tampa Bay (PTB), a FWC Florida Fish and Wildlife Research Institute (FWRI), FWC Stock Enhancement Research Facility (SERF), and Mote Marine Laboratory (MML) partnership. The goal of PTB is to demonstrate the effectiveness and benefits of responsible stock enhancement in a large estuarine system. Since 1999, 4.2 million red drum were reared at FWC SERF and released by SERF and FWRI staff into the Alafia and the Little Manatee River's located on the eastern shoreline of Tampa Bay.

To evaluate survival, distribution, and contribution of the hatchery-reared red drum to the fishery, MML, in collaboration with FWRI and SERF staff, developed the Angler Fin Clip Program (AFCP) as one of the assessment components of the project. The goal of the MML- AFCP is to engage anglers in providing tissue samples and corresponding capture information for the evaluation of hatchery-reared red drum contribution to the fishery and for the determination of their optimal size at release, and optimal release habitat. Resulting data from all PTB assessment components will be used to formulate management recommendations to develop an effective and responsible approach to use hatchery-releases as a tool to enhance and restore fisheries state-wide.

Participants

The AFCP was directed by C. Neidig (MML). Partnerships with agencies and local businesses were important in helping to keep the angler community informed and increasing angler participation in the Fin Clip Program. Primary partners were FWC- FWRI and FWC - SERF. Additional partnerships included Progress Energy (PE), as well as guide organizations, angler clubs, bait and tackle shops, marinas, regional radio programs, and boater and angler supply shops from Citrus to Lee County.

G. Russo (SERF) and SERF volunteers assisted with promoting the program at angler events, through the media, and by visiting participating bait and tackle shops in Pinellas, Hillsborough, and Manatee Counties. B. Wheat (FWRI) Fisheries Dependent Monitoring (FDM) provided program information and fin clip kits to anglers during creel surveys in Hillsborough County and assisted with sampling red drum at tournaments.

C. Armstrong (PE) promoted the program in Citrus and Hernando Counties by visiting participating bait and tackle shops and providing kits and handouts at angler presentations. R. DeBruler, Charlotte County Sea Grant promoted the program by encouraging angler involvement and distributing Fin Clip Kits community presentations in Charlotte County.

The AFCP included MML and SERF volunteers and college interns who provided their valuable time and support. The volunteer AFCP Redfish Team were instrumental in assembling Fin Clip Kits, processing fin clip samples, visiting bait and tackle shops, providing information to anglers, posting signage, collecting fin clip samples and angler information at tournaments, promoting public support, participating in the 1st Hunt for Reds in October Kids Fishing Clinic and tournament, encouraging angler fish data retrieval at angler and community events, and obtaining products from local and national businesses for the angler reward program. Redfish Team members that included MML and SERF staff, volunteers and college interns as well as professional guides during this report period included: John Angiolini, John Arbuckle, Fran Bays, Don Catero, Capt. Ric Ehlis, Capt. Fred Everson, Sondra Fox, Capt. Ron Harter, Capt. Bobby Hilbrunner, Thomas King, Capt. Ray Markham, Joe Mazza, Cindy McClure, Jack Rounds, Capt. Geoffrey Page, Gina Russo, Diana Skapura, Bob Steskal, Maki Tabuchi, Karina Vega, Ellen White, Heather White, Billy Wheat, Sean White, Janice Wojick, and Bernie Waxman.

Project Posters

Posters reflecting the extended fin clip sampling area from Tampa Bay north to Citrus County and south to Lee County continued to be distributed. Posters were mailed or delivered to participating bait and tackle shops, marinas, and angler and boater suppliers. A letter was included with each poster to describe the program and requested that shop managers and their staff help to inform anglers of the range expansion.

Angler Educational Materials

Several handouts supplemental to the Fin Clip Program were distributed to anglers requesting Fin Clip Kits, provided to anglers at events, and provided to bait and tackle shops. These included:

- FWC "Regulation" publication,
- Participating Bait and Tackle Shop list,
- PTB stick-on measuring tape,
- "Project Overview (Figure 1) and How To Take a Fin Clip", and
- "Project Update" (Figure 2) including highlights of hatchery-reared redfish returns from the AFCP and FWC Fisheries Dependent Redfish Creel Sampling. The Project Overview and Update handouts were also distributed to Bait and Tackle shops for display, as well as distributed at angler events.

In October, the Project Overview and Project Update hand-outs were updated. The Project Update included hatchery fish capture information, including highlights of hatchery-reared redfish returns from the AFCP and the FWC Fisheries Dependent Creel Sampling. Electronic versions were sent to G. Russo (SERF) and to C. Armstrong (PE) for additional distribution.

Fin Clip Kits

Fin Clip Kits were modified as needed based on angler feedback. Kits contain the supplies needed for anglers to take tissue samples from red drum, were easy to use, and could be easily stored in the angler's tackle box or cooler. Each Kit consisted of a 5 "x 7 " 2.0 ml thick medium duty zippered plastic bag (Rand, Pawtucket, RI) which contained:

- instruction postcard - (5" x 6 ½ ") included the following: a schematic of "How to Take a Fin Clip" with written instructions, a schematic of "How to Measure A Red Drum", and the Redfish Hotline phone number,
- scissors,
- hotline telephone number decal,
- pencil, and
- 2" x 3" 2 ml thick medium duty zippered plastic bags (4) each displaying two printed adhesive labels:
 - fish information label for anglers to record fish capture information - date, time, total length, weight, and whether fish was kept or released,
 - angler information label - name, address, telephone number. In addition, the Redfish Hotline number was displayed on the bottom of the label.

The outside of each Fin Clip Kit displayed a Project Tampa Bay decal and a label informing anglers of the extended sampling range of Citrus to Lee County. In addition, a label on the back of each bag recognized Progress Energy for a donation made to the Redfish Fin Clip Program.

In October, MML volunteers and T. King assembled more than 600 Fin Clip Kits and 3,000 fin clip sample bags. G. Russo provided volunteer assistance at SERF in producing additional kits for outreach events and for bait and tackle shops when needed.

Bait and Tackle Shops

Monthly, MML volunteers phoned participating bait and tackle shops to promote the AFCP, ask if fin clips needed to be retrieved, offer laminated project posters, Fin Clip Kits, and fin clip sample bags. In addition, G. Russo coordinated with MML/SERF volunteer J. Rounds to visit bait and tackle shops located in the Ruskin and Riverview areas to pick up fin clips and bring the samples to SERF for MML pick-up. G. Russo also assisted with collecting samples from shops located in Clearwater, St. Petersburg, and Tampa. Because of employee turnover at many of the shops, shop visits were valuable for keeping staff and angler customers involved in the program.

C. Armstrong (PE) assisted with calling or visiting shops in Citrus and Hernando Counties. T. King (MML) assisted with collections in Pinellas and Manatee Counties and retrieved samples brought to SERF and transported them to MML for processing.

As of October, there were 99 participating bait and tackle shops (Figure 3). Shops were located from Yankeetown in Citrus County to Naples in Lee County. Additional shops were also contacted and will be listed upon confirmation.

To help to prevent the loss of fin clip samples in bait shop freezers, plastic boxes (4"x 5"x 2.5") were purchased and distributed to each shop. Each box displayed a PTB logo and a Hotline telephone number sticker provided by G. Russo.

Outreach

During the report period the following events were attended to promote the Project Tampa Bay Redfish Fin Clip Program:

October 13, B. Wheat (FWRI-FDM) represented the Fin Clip Program at the **Capt. Mel Spring Tournament** held at Fort DeSoto. He collected more than 30 fin clips, distributed project hand-outs and Fin Clip Kits to anglers.

October 13, C. Neidig presented the Project Tampa Bay Fin Clip Program and promoted the Hunt for Reds in October Red Drum Tournament on the "**Afishinado**" Fishing Radio Show WTAN 1340AM.

October 14, C. Neidig presented the Project Tampa Bay Fin Clip Program on "**Let's Talk Fishing**" WQYK 1010AM.

October 20, C. Neidig presented the Project Tampa Bay Fin Clip Program on the "**Capt. Mel Berman Show**", WFLA 970AM and on the "Florida Sportsman Fishing Show" WBNA 1040AM.

October 21, C. Neidig presented the Project Tampa Bay Fin Clip Program on "**Let's Talk Fishing**" WQYK 1010AM.

October 27, C. Neidig presented the Project Tampa Bay Fin Clip Program at the **1st Annual Hunt for Reds in October** Captain's Meeting, St. Petersburg.

October 28, 57 red drum fin clips, fish capture data, and angler information were collected by T. King, C. McClure, E. White, Capt. R. Ehlis, and Capt. R. Markham at the **1st Annual Hunt for Reds in October** Spot Catch and Release Spot Tournament, St. Petersburg.

Reward Program

B. Steskal and F. Bays (MML volunteers, Donation Coordinators) acquired items for the Angler Reward Program from numerous local and national businesses. Businesses providing in-kind or cash donations were sent a thank you letter, tax deduction information, Mote Aquarium passes, and if the in-kind contribution was over \$500.00, they received a Mote Laboratory Corporate Membership.

Angler Contributions

As of October 2007, more than 1,500 anglers participated in the PTB AFCP by providing more than 7,000 red drum fin clip samples and fish capture information. At MML the fish capture data and angler information were recorded in an Excel Database. Data recorded included: fish capture information (date, time, and location of capture), fish length (standard and total) and if the fish was released or kept. Each fish sample was assigned an identification code which included a unique code for the angler that collected the sample. The angler name and address were also recorded in the database. Samples processed at MML were delivered to FWC Genetics on a regular basis.

As of October 1, 2007, 51 fin clips contributed by anglers were determined to be from hatchery releases in Tampa Bay. Of the hatchery fish, 49 were released in the Alafia River and one (out of sync phase I) was released in the Little Manatee River. Of the hatchery fish identified as released in the Alafia River, 87 percent were released as phase I's. Capture lengths ranged from 152 mm TL to 1,000 mm TL. Sixty-five percent of the fish sampled were within the legal slot size of 18-27 inches TL, 28.9 percent were reported as under slot and 5.8 percent were over slot. Hatchery fish were captured from north Tampa Bay to south Sarasota Bay. The farthest distance from the original release site was 88 km. Days-of-freedom ranged from 210 to 1,144 days post-release.

T. King prepared Genetic Result / Thank You cards to the participating anglers that provided samples. The cards included the month and year of capture, fish length (SL and/or TL), and whether the fish sample was determined to be hatchery or wild.

B. Collaborate in Research to Estimate Recapture Rates and Examine the Interconnectivity of Tarpon Among Florida Estuaries

The Tarpon Genetic Recapture Study is a FWC Florida Fish and Wildlife Research Institute (FWRI) and Mote Marine Laboratory (MML) partnership. In the past, scientists from FWC FWRI collected most of the tarpon data from the possession tag program and from interviews with recreational anglers throughout the state (Kathy Guindon, FWRI, personal communication). The biological data collected was insufficient and incomplete and a new approach was necessary to provide information for assessing the success of tarpon stocks and determine if tarpon "mix freely" between different bodies of Florida waters (K. Guindon, FWRI, personal communication).

In 2003, FWRI commenced a program to collect tarpon tissue samples for DNA analysis from fish caught primarily on Florida's west coast. In 2007, FWRI partnered with MML in an effort to increase angler participation in the tarpon sampling program and establish anglers as stakeholders by having them contribute DNA samples and well as corresponding capture data from fish caught around the state.

Participants

The MML portion of the Tarpon Genetic Recapture Program (TGRP) included C. Neidig, T. King (Senior Biologist) and MML volunteers J. Arbuckle and J. Mazza. T. King and MML volunteers called bait and tackle shops, provided information to anglers, posted signage, promoted public support, encouraged angler fish data retrieval at angler and community events, and obtained products from local and national businesses for the Tarpon angler reward program.

Posters

A project poster was developed by FWRI to advertise the new collection method of using a jaw scrape rather than a fin clip to collect DNA. Posters were distributed to participating bait and tackle shops.

DNA Sampling Kits

Sampling kits consisting of:

- (3) data form slips printed on waterproof paper for the angler to record fish capture date, time, location, approximate total length, time it took to capture the fish, and angler name,
- pencil,
- (3) 20mL plastic vials of alcohol preservative,
- (3) rectangular pieces of 3M[®] scrub pad, and
- Instructions printed on waterproof paper.

Each sample vial included a label with a preprinted reference number provided by FWRI. Anglers were requested to record on the included data form slip for each sample. The outside of each Tarpon Sampling Kit displayed a Project decal. Kits were prepared by FWRI and MML for distribution to anglers and to participating shops for distribution.

Kit Distribution and Sample Collection Locations

Staff at FWRI established an initial group of bait and tackle shops in six regions of Florida to promote the Tarpon Program to local anglers, to provide sampling kits, and to accept samples from anglers. T. King and MML volunteers contacted additional bait and tackle shops to enlist their participation in the Tarpon Program. As of October 2007, there were 79 participating shops. The state regions and the number of shops in each were as follows:

Florida Panhandle (10),
Nature Coast (7),
Tampa Bay (26),
Southwest (18),
Southeast/FL Keys (7), and the
Northeast/East Central (8).

A current list of kit distribution and / or sample collection locations established by FWRI and MML is presented in Figure 4.

Most shops were called monthly, though some shops that had samples more frequently were called twice a month by MML to confirm if samples needed to be retrieved or if sampling kits or handouts were needed. Many shop managers called the Hotline or T. King directly to request a pre-paid mailer to mail samples directly to MML or FWRI. A record of shops by area was kept to track phone calls to shops and shop requests. Shop forms included: the name of the person

contacted, date, request made by shop employee, number of kits or handouts sent, number of tarpon samples at the shop, information on whether the shop would mail the samples or if they MML would need to retrieve samples.

To help prevent the loss of samples in bait shops, plastic boxes (12"x 5"x 3.5") were purchased and distributed to each shop. Each box displayed a Tarpon Project logo and a FWC Hotline telephone number sticker provided by G. Russo.

Outreach

To promote project awareness and engage angler participation, an outreach campaign was conducted by MML and FWRI. Outreach included displaying posters, distributing project information and DNA sampling kits to bait and tackle shops and direct contact with anglers at angler events. During October there were no speaking engagements concerning the Tarpon project.

Angler Contributions

K. Guindon provided the following update for the Tarpon Genetic Recapture Project. A total of 220 anglers returned samples in 2007 out of 683 who were provided kits; 32% of those who took a kit mailed in a tarpon sample. From January 2007 to Nov. 7, 2007, 898 samples were returned by 220 anglers compared to 280 samples by 42 anglers at the same time last year (as of Nov. 11, 2006). There are presently 848 anglers and more than 1,500 tarpon DNA samples in the FWRI database.