2024

LARGE PELAGICS BIOLOGICAL SURVEY

Contact the Fisheries Research Group of QuanTech, Inc. at:
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Fax all assignment paperwork to 240-489-1843 or 1-877-694-8808 (Toll Free) within 24 hours of completing an assignment.

1.0 Overview of the Large Pelagics Biological Survey

The National Marine Fisheries Service (NMFS) is responsible for monitoring and managing U.S. marine fisheries resources. Large pelagic species (e.g., tunas, billfish, swordfish, and sharks) which are caught in offshore oceanic waters are of particular interest to NMFS as these species support socially and economically important recreational and commercial fisheries. NMFS closely monitors directed effort and catch rates for these highly migratory species, and adjusts management measures as needed to maintain stocks and the fisheries that depend on them. Since 1992, the National Marine Fisheries Service has administered the Large Pelagics Survey (LPS) to collect information about the recreational fishery directed at large pelagic species (e.g., tunas, billfishes, swordfish, sharks, wahoo, dolphin fish, and amberjack) in the offshore waters from Maine through Virginia. Angler participation in the LPS is mandatory and is a condition of obtaining a National Marine Fisheries Service Highly Migratory Species (HMS) or Atlantic Tunas permit. The authority to collect LPS data comes from the Atlantic Tunas Convention Act and the Magnuson-Stevens Fishery Conservation and Management Act. The collection of catch and effort information on large pelagics also fulfills U.S. obligations to the International Commission for the Conservation of Atlantic Tunas (ICCAT).

Because large pelagic species are only sought on a relatively small proportion of the total marine recreational angler fishing trips made in the Northeast Region, the fishing effort directed at such species, and the resulting angler catches are generally not estimated very precisely by the Agency's Marine Recreational Fisheries Statistics Survey (MRFSS). Therefore, the LPS was designed as a specialized survey that would focus specifically on the recreational fishery directed at large pelagic species. This specialization has allowed higher levels of sampling needed to provide more precise estimates of pelagic fishing effort and catches of large pelagic species. The LPS includes two independent, yet complementary, types of surveys which provide the effort and average catch per trip estimates needed to estimate total catch by species. The Large Pelagics Intercept Survey (LPIS) is a dockside survey of fishing access sites, primarily designed to collect catch data from private and charter boat captains who have just completed fishing trips directed at large pelagic species. LPIS data are used to estimate the average recreational catch per large pelagic boat trip by species. The Large Pelagics Telephone Survey (LPTS) collects data used to estimate the total number of boat trips on which anglers fished with rod and reel or handline for large pelagic species. This Procedures Manual is for the Large Pelagics Biological Survey (LPBS).

The 2024 LPBS is conducted for collection of additional length and weight information and collection of biological samples (e.g. otoliths, muscle tissue, dorsal spines, and gonads) from bluefin tuna (BFT) and other large pelagic species.

BFT are top priority.

The primary purpose of the 2024 LPBS is to obtain these hard part and tissue samples as well as length and weight observations of BFT. Length and weight information and biological samples for certain other large pelagic species should be obtained as well, but only if there is no BFT. Biological samples should be collected for white marlin, blue marlin, swordfish, bigeye, yellowfin tuna, skipjack, and albacore. Length and weight information should be obtained **but**

biological samples should **not** be collected from sharks, dolphinfish, wahoo, little tunny, and Atlantic bonito. As previously mentioned, biological samples include sagittae otoliths, first dorsal spine, muscle tissue, and gonad samples. Otoliths will be used for micro-constituent analysis. This could potentially determine the geographic origin of the fish. First dorsal spines may be used for aging studies. Muscle tissue samples may be used for genetic studies. Gonad weights and samples may be used for reproductive studies.

When conducting a LPBS assignment, Samplers should select site(s) to maximize the number of BFT sampled from the assigned site(s). To begin, select a site to maximize the number of observations of fish using the following priority list:

HIGHEST PRIORITY

1. Bluefin tuna *TOP PRIORITY*
2. Bigeye / Yellowfin tuna
3. Marlins (White Marlin, Blue Marlin)
4. Swordfish
5. Skipjack / Albacore
6. Sharks
7. Dolphin
8. Wahoo
9. Little Tunny / Atlantic Bonito

LOWEST PRIORITY

2.0 Overview of LPBS procedures and requirements

- LPBS Samplers shall not conduct LPIS assignments during LPBS assignments. The starting time on the specified date for each assignment shall be determined based on the understanding that a LPBS Fixed Date/Fixed Site, Fixed Date/Roving Site, and Tournament assignment must last four hours.

- There is no set amount of time for samplers to be on assignment for opportunistic assignments. However, there is an expectation that opportunistic assignments will be productive in sampling bluefin tuna.

- Interviewers are responsible for determining the best time of the day to conduct their assignment and should be present at the site(s) at the time of day when boats that land bluefin tuna are most likely to return from fishing.

- The LPBS assignment schedule will include identified tournaments and randomly selected site(s)/date combinations. If a tournament is selected for an LPBS assignment the Sampler should attend the tournament's captains meeting held prior to the tournament. The Sampler should use this as an opportunity to 1) inform tournament captains and organizers of their intent to sample the tournament and 2) discuss the best strategy for sampling the tournament (times, locations etc.).

- The only reason for not completing an LPBS assignment on the scheduled date is if weather

conditions do not allow for offshore game fishing and no boats are out that might be landing a bluefin tuna or other large pelagic species. This type of assignment is referred to as "weathered-out." If there is a small craft advisory (or greater, such as gale, storm, or hurricane warnings) on the assigned date, Samplers should check the fishing activity at the assigned site(s) to confirm that no vessels are out fishing. QuanTech headquarters must be notified as soon as possible if a LPBS assignment is "weathered out".

- Interviewers must “sign-in” and “sign-out” with a Site Representative (e.g. Dockmaster, Site Owner, Site Operator, or the other employee at the fishing access site) at each site, if a Site Representative is present. A professional Fish Cleaner may also serve as a Sign-in/Sign-Out Representative. However, the LPBS sampler must let at least one other Site Representative know that they are there to conduct LPBS sampling, if present.

- Interviewers should move from site to site to maximize the number biological samples and length/weight observations of bluefin tuna. LPBS Interviewers must position themselves to maximize the number of length and weight observations for large pelagics. This is often at the fish cleaning or tournament weigh station.

- An eligible respondent for the LPBS is the captain, owner, mate, or passenger of a boat that just landed a bluefin tuna, other tuna, billfish, sharks, swordfish, dolphin, wahoo, amberjack, or other large pelagic fish. All questions must be asked, all verifiable information should be discussed with the respondent, and all data should be appropriately recorded. All information shall be treated as confidential records.

3.0 General instructions

There are only a few questions that must be asked of the respondent. Just as on the LPIS questionnaire, the questions to be asked during the Large Pelagics Biological Survey interview are written out in full for a purpose. The Interviewer should always read each item on the questionnaire exactly as it is stated. If the Vessel Representative asks for the Interviewer's opinion about an item, the Interviewer should provide a definition for the item in question, rather than supply the actual response.

The following procedures shall be used for the LPBS:

- Each marina operator shall be contacted prior to sampling to obtain permission to sample at the site and to explain the purpose of the sampling.

- The weigh station operator and/or boat owner/captain/mate must also be asked to allow the sampler to examine, count, and measure large pelagic species brought to the station.

- Information from large pelagic fish brought to the weigh station shall be recorded. However, NMFS has specified that the Sampler prioritize data collection for certain species (see page 1 and table on the bottom of LPBS Questionnaire) in instances where the Sampler does not have time to weigh, measure, and collect biological samples all fish.

- Appropriate sub-sampling procedures shall be utilized when a large number of fish are arriving at the weigh station simultaneously.

- The LPBS sampler shall record lengths of LPS species according to the same procedures outlined for the LPIS (Item 31). In addition, samplers should measure the half girth of all large pelagics (except dolphin) in millimeters.

- LPBS samplers must record fish weights only if: (1) the site has an accurate scale, (2) individual fish are weighed, and (3) the sampler actually sees the fish being weighed. Samplers should record the preparation of the fish as well as the weight to the nearest 0.1 kg, if possible, or to the nearest 0.5kg, otherwise (such as when using a handscale). Weights must be recorded for whole and gutted fish, but not from cleaned (filleted or "loined" fish carcasses (hereafter referred to as "racks").

- LPBS samplers must collect biological samples (e.g. sagittae otoliths, first dorsal spine, muscle tissue, and gonad samples) from BFT, white marlin, blue marlin, swordfish, bigeye, yellowfin tuna, skipjack, and albacore. If the fish are mature, then the gonads should be weighed to the nearest 0.1 kg, if possible, or to the nearest 0.5kg, otherwise (such as when using a handscale). Biological samples should be collected in accordance with the procedures described later in this manual.

4.0 Pre-assignment procedures

On some LPBS assignments, Interviewers may be given a menu of sites which they can sample at for that day. Samplers must combine their local knowledge of the fishery with information obtained from calling (or visiting) the sites the morning of the assignment to determine how to sample that day. The goal is to maximize the number of bluefin tuna biological samples collected and lengths/weights obtained.

If weather conditions keep boats from going out fishing, the interviewer should consider weathering out the assignment. Keep in mind that newspaper articles, weekly magazine fishing reports, and large pelagic fishing related web sites may be useful for monitoring what species are being caught and planning for upcoming tournament sampling.

Each Sampler should make sure that he/she knows his/her interviewing schedule.

LPBS Samplers should contact QuanTech headquarters to obtain their assignments. Do not try to memorize your schedule of assignments. Samplers should record the following information for each scheduled assignment:

- Date
- Control Number
- County Code
- Assigned Site Codes
- Site Names for All Site Codes

Keep LPBS assignment information separate from LPIS assignment information.

QuanTech will provide all LPBS Interviewers with certain equipment **on loan.** Each Sampler should make certain that he/she has all of the required materials and equipment for conducting a LPBS assignment, including:

- Pencils;
- Permanent Markers
- Name Badge;
- 25 Kg Chatillon Hand-Held Scale;
- Portable electronic scale (if supplied by NMFS);
- LPBS ASFs/SDFs/Questionnaires;
- Metal Tape Measure;
- Cloth or Plastic Tape Measure;
- Safety Glasses;
- Nitrile Gloves;
- Forceps (or Tweezers);
- Meat Saw;
- Replacement Blades for Meat Saw;
- Knives;
- 2 Gallon Zip-lock Freezer Bags
- 1 Gallon Zip-lock Freezer Bags
- 1 Quart Zip-lock Freezer Bags
- Zip-lock Pint or Sandwich Bags;
- Centrifuge Tubes;
- Sample Labels Printed on Write-in-the-Rain Paper;
- Scalpel;
- Cryovials filled with 1.5 mL non-hazardous preservative;
- 20ml Vials prefilled with 10ml Formalin Buffer for Gonad Samples;
- Screw-top Bucket for Vials containing Gonad Samples;
- Ice-filled Cooler;
- Field Guide to the Tunas, Sharks, & Billfishes of the Atlantic Ocean and Gulf of Mexico;
- Copies of the LPIS "To Whom" Letter from NMFS;
- Other Informational Materials/Brochures;
- HMS Permit List; and
- LPBS Procedures Manual and LPIS Procedures Manual.

All LPBS Interviewers must have the required materials listed above in their physical possession when on site. Never leave required materials in the car!

Interviewers should dress casually but neatly. Shorts are acceptable, but bathing suits are not. T-shirts are acceptable. Closed-toed shoes should be worn while conducting LPBS assignments. Alcohol or illegal drug use or intoxication on assignment is strictly prohibited. Fishing while on-assignment is prohibited. Failure to abide by these rules will result in a loss of future assignments for that Interviewer.

If sampling is to be conducted where there is a Site Representative, such as an owner, manager, supervisor, dockmaster, or other person who works at the site, it is a requirement to "check-in" and speak with that person upon arrival at the site, explain the nature of the survey, its objectives, and how you will be performing your work. If the Site Representative wants more information than is immediately available, he/she should contact either NMFS or QuanTech Headquarters. Contact information is provided on the LPIS "To Whom" letter from NMFS.

4.1 LPBS Assignment Types

NMFS will provide monthly assignment schedules at least three weeks prior to sampling for the following month. The assignment schedule will attempt to maximize the number of landed bluefin tuna, and possibly other high priority species as specified by NMFS, encountered by LPBS samplers. The schedule could include any combination of four different LPBS assignment types as follows:

- Fixed Date/Fixed Site(s) – NMFS specifies the date and site (or combination of sites) for the assignment. The LPBS sampler will conduct the assignment on the assigned date at the assigned site (or sites) during a four-hour period corresponding with the peak hours when vessels normally return from offshore fishing trip for bluefin tuna and other pelagic.

- Fixed Date/Roving Site(s) – NMFS only specifies the date and the state for the assignment. The LPBS sampler is free to rove among sites within the specified state to maximize the probability of sampling bluefin tuna or other high priority species. This is also a four-hour assignment corresponding with the peak hours when vessels normally return from offshore fishing trips for bluefin tuna and other pelagics.

- Tournament – This is similar to Fixed Date/Fixed Site assignments in that NMFS specifies the date and site (or sites). This is also a four-hour assignment corresponding with the peak hours when vessels normally return from offshore fishing trips for bluefin tuna and other pelagics. If a tournament is selected the sampler will attend the tournament's captains meeting held prior to the tournament. The sampler should use this as an opportunity to 1) inform tournament captains and organizers of their intent to sample the tournament and 2) discuss the best strategy for sampling the tournament (times, locations etc.).

- Opportunistic – The site and date for the LPBS assignment is determined by the Field Supervisor or LPBS sampler. Field Supervisors and samplers can trigger an opportunistic LPBS assignment based on direct observation or based on tips from LPBS contacts that bluefin (or other high priority species) are available for sampling. Field Supervisors and samplers are encouraged to establish contacts with captains, anglers, fish cleaners, marina staff and others who may be able to provide timely information that could trigger an opportunistic LPBS assignment. Samplers should also anticipate opportunities for LPBS sampling during tournaments (i.e., those not already scheduled for a Tournament Assignment) based on the NMFS HMS registered tournament list and local knowledge of tournament events. There is no set amount of time for samplers to be

on assignment for opportunistic assignments. However, there is an expectation that opportunistic assignment will be productive in sampling bluefin tuna or other high priority species as specified by NMFS since direct knowledge of fish to be sampled is the trigger for such assignments.

4.2 "Weathering out" assignments

The only reason for not completing a scheduled assignment is if weather conditions do not allow for offshore game fishing and no boats are out that might have caught a large pelagic species. This type of cancelled assignment is referred to as "weathered-out." Interviewers should obtain offshore weather reports to determine if an assignment should be "weathered out."

Consider the following to determine if or when to conduct your assignment and where to begin:

- Weather reports
  - — Small Craft Warning, Gale Storm Warning or Hurricane Nearby?
    If yes, and there are no boats out that might have caught a large pelagic species then "weather out" the assignment and reschedule with QuanTech Headquarters.
  - — Offshore weather is highly variable, a sudden change in sea conditions may force some vessels to return early. Get weather reports from the National Weather Service, your local news "Offshore Report", or the Weather Channel.
  - — Check the Internet links at http://www.quantech.com/weather.htm
- Call the site(s)
  - — Determine if a Site Representative (if there is one) will provide you with reliable information concerning the number of boats that went offshore and the time that they are expected back. Ask if they heard anything over the radio about the type of fish that were caught that day.

5.0 Arrival at the Site(s)

Fixed Date/Fixed Site, Fixed Date/Roving Site, and Tournament assignments shall last 4 hours. To qualify as a completed assignment, the minimum amount of time (4 hours) must be spent at the site(s). You will not be paid for the assignment if you do not conduct the assignment for at least 4 hours.

Interviewers will occasionally receive surprise quality control (QC) visits from a Supervisor, or possibly a NMFS official, so all Samplers must be on-site for this reason, as well.

It is important to be on-site by the appropriate time for each assignment. The appropriate time to arrive on site is before fish are being cleaned from offshore trips. You may need to begin earlier

to “sign-in” prior to sampling or discuss your intentions with the fish cleaner(s).

Samplers should position themselves so that they can measure and weigh as many fish as possible at the site(s). First, determine where fish can best be sampled. This will often be at a fish cleaning station. Fish cleaning stations are recommended because of the concentration of fish at the stations and because cleaning is usually confined to the stations. If dock personnel or a fish cleaner will be weighing and cleaning the fish, let them know what type of information you will want from each fish, and determine how best to work your sampling needs into their procedures.

It is very important to explain the sampling requirements of the LPBS. Many fish cleaners charge by the pound for cleaning fish, so they may want to weigh several fish at once.

Remember:

Fish must be weighed one at a time.

The Sampler must see the fish being weighed.

When you explain this requirement, indicate that you need to collect individual weights so NMFS can compare data with scientific length/weight tables currently used for quota monitoring and stock assessment.

LPBS Samplers should also avoid potential conflict by informing Site Representatives (and fish cleaners), as well as the person who owns the fish, that they intend to measure, weigh, and take biological samples from the fish for scientific purposes, not for enforcement purposes.

LPBS Samplers must also familiarize themselves with the use of the scale at the site(s), if they will be operating the scale in any manner. Always ask permission to use the scale before so much as touching any part of the scale.

QuanTech will not be responsible for damages caused by negligent LPBS Samplers.

5.1 Use of Hand-Held Scales

If certified scales are not present, and the use of calibrated, hand-held scales is appropriate for obtaining fish weights, then a certified scale is not necessary. However, the hand-held scale must be recently calibrated. The use of a hand-held scale is limited to weighing smaller fish (less than 25 kilograms, about 55 pounds). Otherwise, the weights for the LPBS must be recorded from certified scales located at LPBS sites.

While scales should be calibrated at least once or twice a year using a set of certified standard weights, interviewers should also prepare for every assignment by ensuring that their scales are zeroed properly (Figure 1). Most instances of improper zeroing result in rather small errors of between 0.1 - 0.2 kg. This amount may seem insignificant, but when catch estimates are expanded from raw data, these "small" errors can cause a large and undesirable weight bias.

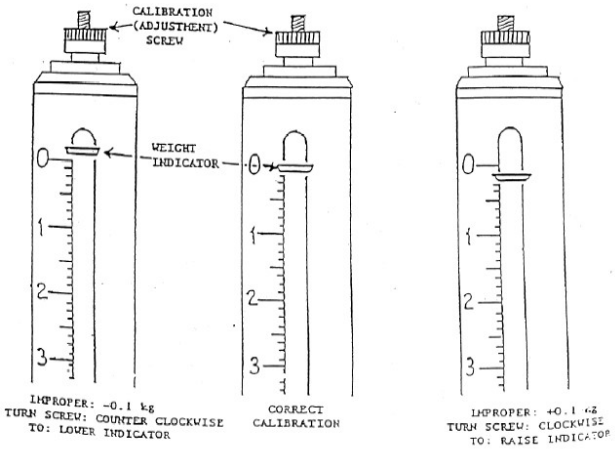


Figure 1

If a scale is not set properly, and reads incorrectly, then the biomass estimates may be biased. Of course, the more out of adjustment the scale, the more significant the error becomes. It is important that interviewers realize that even apparently minute maladjustments can cause bias. Figure 1 shows how to properly calibrate Chatillon spring scales.

Over time, springs inside the scales may stretch and measure inaccurately. If Samplers feel their scale is weighing improperly, they should find an object of known weight (preferable a standard weight, but a meat or deli package with the actual weight marked on it and minimal packaging would also work) and test it on the instrument to see if it conforms to the expected weight. If it does not, then the Sampler should not use that scale and should contact QuanTech Headquarters for a new, verified unit as soon as possible.

5.2 Cleaning and Storing Equipment, Including Hand-Held Scales

LPBS Samplers are responsible for <u>all equipment</u>, which should be wiped clean and dry before finishing a day's work. All interviewers are expected to take good care of their equipment and scales. These scales are expensive, and it is critical to the success of the survey that all Samplers have accurate scales every time they are in the field. Samplers should never store any spring scale by hanging it from the weighing hook as this will stretch the spring. They should avoid contact with water if possible and never leave scales lying in a puddle or bucket of water. If the scales do come in contact with saltwater, Samplers should rinse with freshwater and allow them to dry thoroughly before storing. Spraying regularly with an anti-corrosive grease (e.g., WD-40) is recommended. Spring scales should be protected in sealed, dry, clean zip-lock baggies when not in use.

6.0 LPBS Forms

It is important to follow the coding procedures discussed in this section.

- **NEATNESS COUNTS.**
- **IF YOUR FORMS HAVE ERRORS, ARE ILLEGIBLE, OR FAXED IMPROPERLY WE WILL CALL YOU AND ASK YOU TO FIX THE ERRORS AND/OR FAX THEM AGAIN.**

6.1 LPBS Intercept Form (BIOL): Item by item instructions

PLEASE remember to write legibly in Block Capitals (Upper Case). Take your time while recording data; in other words, be accurate and precise. Please be as neat as possible. Remember, providing quality data is crucial to the success of the study!

Items 1 through 8 are not questions to be asked of the respondent. They are primarily identifying information.

Item 1 INTERVIEWER CODE. Each Interviewer must be given a unique four-digit identification number. This number should be used on all submitted forms.

Item 2 DATE. The Interviewer should record the Month/Day. Two digits for the month and two digits for the day should be used.

Item 3 DOCUMENT. Throughout an assignment, the Interviewer should consecutively number forms completed for the assignment. The first interview for each assignment should be numbered 01; the second interview for each assignment should be numbered 02, etc.

Item 4 TIME. Using military time, record the time that the interview was completed. Military time runs on a 24-hour clock starting at 0001 hours (one minute past midnight) and ending at 2400 hours (midnight).

Item 5 STATE CODE. Enter the two-digit numeric code for the state of intercept. FIPS state codes to use are as follows:

Connecticut	CT	09
Delaware	DE	10
Maryland	MD	24
Massachusetts	MA	25
New Hampshire	NH	33
New Jersey	NJ	34
New York	NY	36
Rhode Island	RI	44
Virginia	VA	51

Item 6 COUNTY. Enter the three-digit FIPS number assigned to the county of the intercept. The county code should be listed on the Interviewer assignment listing, as well as on the LPIS cluster lists.

Item 7 SITE. Enter the four-digit number of the site where the interview is being conducted. The site number should be listed on the Interviewer's assignment schedule as one of the sites within the assigned cluster, as well as on the LPIS cluster lists.

Item 8 CONTROL. Each assignment is given a four-digit identifying number. The first digit of all LPBS assignment control numbers is 3.

NEVER LEAVE THE CONTROL NUMBER BLANK.
BE SURE THAT YOU HAVE THE CORRECT CONTROL NUMBER.

Item 9 WHAT IS THE NAME OF YOUR BOAT?
If the name of the boat is evident (e.g., if it is written on the boat itself), then the Interviewer must still verify the information with the respondent, and fill in the name on the coding form. If the boat name is not apparent, the Interviewer should ask the respondent "What is the name of your boat?" and fill in the information. If the boat has no name, the Interviewer should leave the long row of boxes at Question 9 blank and fill in the "no name" oval underneath.

HMS PERMIT #
Look up the vessel in the HMS PERMIT LIST. If the vessel is listed in the HMS permit list, then record the 8 digit HMS permit # in the boxes below Item 9. It may be necessary to verify the HMS permit # if there are multiple boats with the same name.

Item 10 WHAT TYPE OF FISHING GEAR WAS PRIMARILY USED?
Fill in the appropriate oval. If another gear type was primarily used, fill in the oval for "Other" and specify on the line provided.

Item 11a. WERE YOU PARTICIPATING IN A TOURNAMENT TODAY?
Fill in the appropriate oval. If "Yes", continue with Item 11b. If "No", then go to Item 12.

Item 11b. WHAT WAS THE NAME OF THE TOURNAMENT?
Fill in the appropriate oval. Both the name and tournament code should be filled in if the respondent was participating in a tournament. Tournament codes are given in Appendix G of this document.

Item 12 WHERE WERE YOU FISHING FOR LARGE PELAGIC SPECIES?
Indicate the name of the main fishing area that was used to fish for large pelagic species. Even if the fishing area is listed in the Fishing Areas List (Appendix D), ask the respondent if they know the latitude and longitude. If the respondent can

provide the latitude and longitude, then enter the coordinates provided by the respondent.

If the respondent says they do not know the coordinates and the coordinates are **not** listed in Appendix D, then latitude and longitude should be coded 9998 and 9998. If the respondent refuses to provide the coordinates and the coordinates are **not** listed in Appendix D, then latitude and longitude should be coded 9999 and 9999. However, if coordinates are listed for the fishing area in Appendix D **for your interviewing State** and the respondent did not know or refused to provide them, then the latitude and longitude listed in Appendix D should be entered.

There are fishing locations with similar names in different States. Do not use coordinates for a fishing area from Appendix D unless it is listed in your State.

If the respondent provides a fishing location name and does not know the latitude and longitude but instead provides LORAN (*LO*ng *RA*nge *N*avigation) coordinates, then record the location name and write the LORAN numbers after the name. Then, if the fishing location provided by the respondent is in Appendix D, fill in the latitude and longitude from Appendix D. However, if the location is not in Appendix D, then record 9998 for latitude and 9998 for longitude.

Item 13 FISH LENGTHS IN MILLIMETERS, WEIGHT, PREPARATION, AND GENDER.

All large pelagic fish should be measured and weighed, and biological samples should be collected, if possible. However, due to time constraints it may not always be possible to obtain all information and all biological samples for all available fish. Samplers need to budget their time and maximize the number of BFT observations and specimen collections. If there are so many fish that individual measurements cannot be obtained, then a representative sample of fish should be measured. To randomly sub-sample the fish, interviewers should blindly determine which fish to inspect rather than purposely try to pick the fish that look "average."

If the LPBS sampler can obtain the SFL, CFL, half girth, and weight before the fish is cleaned, and the sampler does not lose sight of the fish while it is being cleaned, it would be acceptable for the LPBS sampler to obtain the biological samples from the cleaned fish carcass (or rack). Samplers should record weights from whole and gutted fish, but not racks. If only the rack is available SFL should be measured. Pectoral straight fork length and pectoral curved fork length should be recorded if the head has been removed. If only the head is available, a snout measurement should be recorded. If more than 6 fish are available for sampling, additional pages are needed. If additional pages are needed because there are more than 6 fish, the additional pages should have the same document

number as the first page and a note in the comments should indicate the page number. Use as many forms as necessary per vessel.

For the purposes of LPBS, bluefin tuna size classifications and codes should be determined by its curved fork length (CFL) as indicated in the table on the questionnaire.

See Appendix E for more information on measuring various types of fish.

SPECIES NAME.

Write the name of the fish species on the line provided. Abbreviations such as BFT [SIZE CLASS], YFT, SKIP, etc. are acceptable entries.

EXAMPLES OF ABBREVIATIONS INDICATING BFT SIZE CLASS:

1. BFT YS – for young school BFT
2. BFT S – for school BFT
3. BFT LS – for large school BFT
4. BFT SM- for small medium BFT
5. BFT LM – for large medium BFT
6. BFT G – for giant BFT

SPECIES CODE. Use the four digit species codes provided in the table located on the LPBS questionnaire; if the species code is not listed, record the species name and look up the species code in the list provided in Appendix F. Bluefin tuna size classifications and codes should be determined by its Curved Fork Length (CFL) as indicated in the table on the questionnaire.

LENGTH. DO NOT MEASURE OR WEIGH ANY NON-LARGE PELAGIC FISH SPECIES (SUCH AS BLUEFISH, STRIPED BASS, BLACK SEA BASS, TILEFISH, ETC.)

DO MEASURE THE LENGTH (SFL) OF ALL LARGE PELAGIC SPECIES IN MILLIMETERS.

For tuna species, obtain straight fork length, curved fork length, and half girth.

Fish lengths should be measured and recorded to the nearest millimeter (do not measure in inches and then convert)! Do not measure in centimeters.

1) STRAIGHT FORK LENGTH (SFL):

a) Whole or gutted fish:
Measure using a metal measuring tape and record only the straight fork length of the fish in millimeters. Make sure the metal measure tape is

straight when measuring SFL. Straight fork length must be taken in a straight line, as close as possible to the fish without tracing the contour of the body from the most anterior tip of the longest jaw (mouth closed) or end of snout, whichever is terminal, to the posterior tip of the tail at its center line. The resulting length is therefore a straight fork length.

b) Fish rack:
Measure using a metal measuring tape and record only the straight fork length of the fish in millimeters. Make sure the metal measure tape is straight when measuring SFL. Straight fork length must be taken in a straight line from the most anterior tip of the longest jaw (mouth closed) or end of snout, whichever is terminal, to the posterior tip of the tail at its center line. The resulting length is therefore a straight fork length.

c) Headed large medium or giant BFT
This length should only be recorded if the fish had its head removed prior to sampling. Measure using a metal measuring tape and record only the pectoral straight fork length of the fish in millimeters. Make sure the metal measure tape is straight when measuring pectoral straight fork length. Pectoral straight fork length must be taken in a straight line, as close as possible to the fish without tracing the contour of the body from the dorsal insertion of the pectoral fin to the posterior tip of the tail at its center line.

d) Head only
This measurement should only be recorded if only the head is available and no other length measurements can be taken. Measure using a cloth or plastic measuring tape to the nearest millimeter. The snout measurement is taken from the tip of the upper jaw to the anterior-most edge of the eye (orbit). For a diagram, see Appendix C.

2) CURVED FORK LENGTH (CFL):

a) For a whole or gutted fish:
Measure using a cloth or plastic measuring tape and record only the curved fork length of the fish in millimeters. Curved fork length must be taken in a line, tracing the contour of the body from the tip of the upper jaw to the fork of the tail, which abuts the dorsal insertion of the pectoral fin and the dorsal side of the caudal keel. The measuring tape must pass over (and touch) the pectoral fin and the caudal keel.

*** Appendix A displays SFL vs. CFL.**

b) For a headed large medium or giant BFT
This length should only be recorded if the fish had its head removed prior to sampling. Measure using a cloth or plastic measuring tape and record only

the pectoral curved fork length of the fish in <u>millimeters</u>. Pectoral curved fork length must be taken in a line, tracing the contour of the body from the dorsal insertion of the pectoral fin to the posterior tip of the tail at its center line.

3) HALF GIRTH

Measure using a cloth or plastic measuring tape and record only the half girth length of the fish in <u>millimeters</u>. Half girth measurements must be taken in a line perpendicular to the length of the fish, tracing the contour of body half way around the fish. The measurement should begin on the body underneath the peak of the first dorsal fin to the middle of the pelvic fins. See measurement # 9 in Appendix B.

Interviewers should record only those measurements that they took themselves. Occasionally, especially if the fish is very large, you may need to ask for assistance to measure the fish. If this is the case, you must be very deliberate in your instructions to the helper (who might be a fish cleaner or angler) to make sure the measurement is taken to LPIS specifications.

For billfish, straight upper-bill-to-fork length and straight lower-jaw-to-fork length measurements must be obtained (Record <u>straight</u> upper-bill-to-fork length in the SFL boxes and <u>straight</u> lower-jaw-to-fork length in the CFL boxes. Don't forget to obtain half girth and individual weight!

WEIGHT (KG)

If a scale on the site premises is used to obtain weight, LPBS Samplers must record fish weights only if: (1) the site has an accurate scale, (2) individual fish are weighed, and (3) the Sampler actually sees the fish being weighed.

If a hand-held scale is used to obtain weight, the Sampler must weigh the fish and the scale must be properly calibrated/zeroed (see Section 5.1).

- **Record the whole or dressed weight of the fish in kilograms!**
- **Record weight to the nearest 0.1 kg if possible.**
- **Samplers using a handscale should record weights to the nearest 0.5 kg.**

1 pound = 0.45359237 kilogram

PREP Record the preparation of the fish (0=whole, 2=gutted, 4=rack, 6=pectoral length, 3=head only). Ideally, only fish that are whole or gutted will be measured (prep= 0 or 2). However, if only the rack (head, spine, and tail naturally attached) is available, then measure the SFL of the rack and place a 4 in the PREP code box. If the fish is a large medium or giant category bluefin tuna and the full body

length cannot be obtained because the head has been removed, measure the pectoral SFL and CFL lengths and place a 6 in the PREP code box. Fish that have had their head and tail completely cut off should not be measured. If the tails have been trimmed but the fork is still intact the fish should be measured. If only the head is available place a 3 in the PREP code box and record the snout length in the SFL box (The snout measurement is taken from the tip of the upper jaw to the anterior-most edge of the orbit with a flexible measuring tape. A diagram can be seen in Appendix C).

GENDER Samplers should inspect the gonads of each fish and record the gender of each fish (1=male, 2=female, 8=undetermined).

The following instructions for obtaining gonad weight and biological samples (e.g. sagittae otoliths, first dorsal spine, muscle tissue, and gonad samples) are similar to standard procedures recommended by ICCAT and those used by the NOAA Fisheries Pelagic Observer Program. The instructions and images for collection of gonad weight, otoliths, dorsal spine, and gonad samples are excerpted and adapted from Beerkircher et al., (2010). The protocol for muscle tissue collection contains adapted instructions and images by Peter Grewe, CSIRO Oceans & Atmosphere, Hobart, Tasmania.

GONAD WEIGHT (KG)

The gonad is the only bi-lobed organ in the abdominal cavity dorsal to the anus, and will be attached to the upper-rear abdominal wall. Depending on the stage of reproductive development the ovaries of females will appear as elongated lobes which may be orange, yellow or pinkish-red in color. The testes appear as triangular lobes that are usually whitish in color.

Gonad removal via the abdomen

a. Use a sharp knife and insert its tip just inside the anus. Make a shallow cut through the ventral abdomen up to the base of the pelvic fin; pull the blade out away from the abdomen as you cut so that the knife is less likely to slice into the gonad.

b. Grab the two lobes and carefully pull them away from the abdominal wall. Cut the posterior end from the abdominal wall without cutting either of the lobes.

Gonad weighing instructions

c. The weight of the whole gonad must be recorded. Please remove any excess attached connective tissue and attached fat prior to weighing.

d. Place the gonad in a 2-gallon zip-lock freezer bag as shown in Figure 1. Make sure the hanging scale is zeroed (if not, zero the scale by turning the screw at the top). Use the hook on the scale and make a puncture near the top of the 2-gallon zip-lock freezer bag and record gonad weight. Gonads of large bluefin tuna may weigh over 10 kg, therefore, the gonad may need to be weighed one lobe at a time or sectioned and weights summed to determine whole gonad weight. It is important to get an accurate gonad weight, if the gonad is too heavy please section and sum weights. Collect three subsamples from the gonad using the procedure described later in this manual, then discard the gonad and the 2 gallon bag.

Figure 1: Weigh gonads in a 2 gallon freezer bag.

OTOLITHS

Sagittal otoliths are small (between 7 and 20 mm in size approximately) calcified structures found in the semicircular cavities of the inner ear, situated at the base of the brain. The sagittal otolith is the largest of the three otoliths found in each inner ear of the bluefin tuna. There are two main techniques of removal: transverse head section (Figure 2) and frontal head section. In the second, a frontal section of the superior part of the cranium is made, passing above the eye and parallel to the major axis of the fish. Only, the transverse technique is detailed here.

Transverse head section:

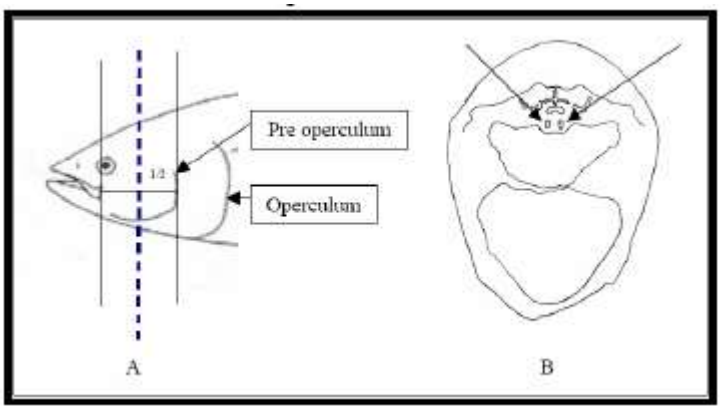


Figure 2: Transverse head sectioning to remove otoliths.
A. Tracing the imaginary line (dotted) along which to make the cut.
B. View of the cavities where the pair of otoliths is found in the back of the head.

a. Trace an imaginary line perpendicular to the horizontal fish, which passes through the mid-point between the corner of the mouth and the pre-operculum (**Figure 2A**). A ruler is recommended for dividing this distance in two.

b. Once this point is marked, make a cut in the top part or back of the head at the level of the imaginary line (**Figure 2A.**).

c. Use a metal saw and cut down through the head perpendicular to the horizontal axis of the fish (**Figure 2B.**). The sectioned part of the head contains the otoliths. The cavities below the brain in the upper part of the head should be searched to find the otoliths. If they are not found here, it may be that they are in the other part of the sectioned fish.

d. Using fine forceps and with great delicacy to avoid breaking these fragile pieces, extract each otolith. Both otoliths should be collected from each specimen. If the otolith has broken, try to recover the pieces and keep them all together.

e. The otoliths must then be removed from the very fine transparent capsule. Once extracted, rinse them in water and pat them dry with a clean cloth/paper towel.

f. Place the dried otoliths in a centrifuge tube. Place the centrifuge with the dried otoliths in a zip-lock sandwich bag along with a sample label. Make sure the correct date, control #, document #, fish #, species, and SFL are recorded on the label, and then seal the bag.

g. Fill in one oval for each otolith collected from the fish under "OTOLITHS" on the LPBS questionnaire.

h. Please do not store the otoliths in a refrigerator or freezer, cold temperatures will increase the potential for breaking

DORSAL SPINE

a. The first spine of the first dorsal fin should be collected. The spine must be pulled out whole from the base.

b. Using a knife, cut the membrane joining the 1st and 2nd dorsal fin rays (**Figure 3**). Push the spine forward progressively until the ligament breaks. Twist the spine left and right alternatively until it comes loose and pull to finally extract it (**Figure 4**).

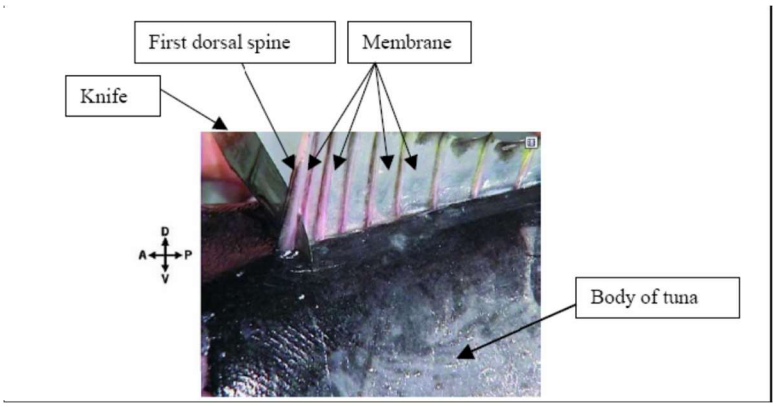


Figure 3: Insert the knife into the membrane separating the first two spines of the 1st dorsal fin.

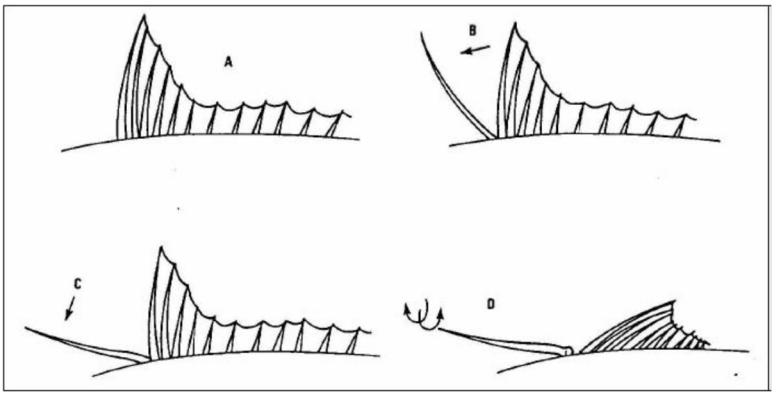


Figure 4: Technique of extraction of the first spine of the bluefin tuna dorsal fin.

Remember that the piece forming the base of the spine is the most important since it is the part used for age interpretation.

c. Fill out a sample label. Make sure the correct date, control #, document #, fish #, species, SFL, CFL, and Type (DORSAL SPINE) are recorded on the label, place in a sandwich bag, and seal. Place the spine and the sandwich bagged label in an appropriate size freezer bag, and then seal the freezer bag.

d. Fill in the oval for the collected "DORSAL SPINE" on the LPBS questionnaire.

e. Spines should be kept on ice and then stored frozen.

MUSCLE TISSUE SAMPLES

a. Avoid cross-contamination of muscle tissue samples. Wash your hands and work area. Rinse thoroughly prior to sampling each fish. Use clean hands or wear clean latex or nitrile gloves.

b. Clean a knife or scalpel to ensure that no tissue remains from prior fish. To clean the knife or scalpel rinse thoroughly with water and then wipe dry with a fresh paper towel to remove any blood or tissue. If replacing a scalpel blade, the handle should also be thoroughly rinsed with water and then wiped dry with a fresh paper towel prior to attaching a new, clean blade.

c. Using the clean knife or scalpel, collect one cube of muscle tissue, at least 2-inch x 2-inch x 2-inch in size near the caudal peduncle. If there is an insufficient amount of muscle near the caudal peduncle, muscle tissue may be collected from behind the head or from the "loin" (**Figure 5**).

Figure 5: A picture of a tuna "loin" is shown in a 2x2 inch square. Muscle cube samples should be taken from the caudal peduncle. However, samples taken from behind the head or from the loin are also acceptable.

d. Fill out a sample label. Make sure the correct date, control #, document #, fish #, species, SFL, CFL, and Type (MUSCLE) are recorded on the label, place in a sandwich bag. Place the muscle cube and the sandwich bagged label in an appropriate size freezer bag.

e. Fill in the oval for the collected "MUSCLE CUBE" on the LPBS questionnaire.

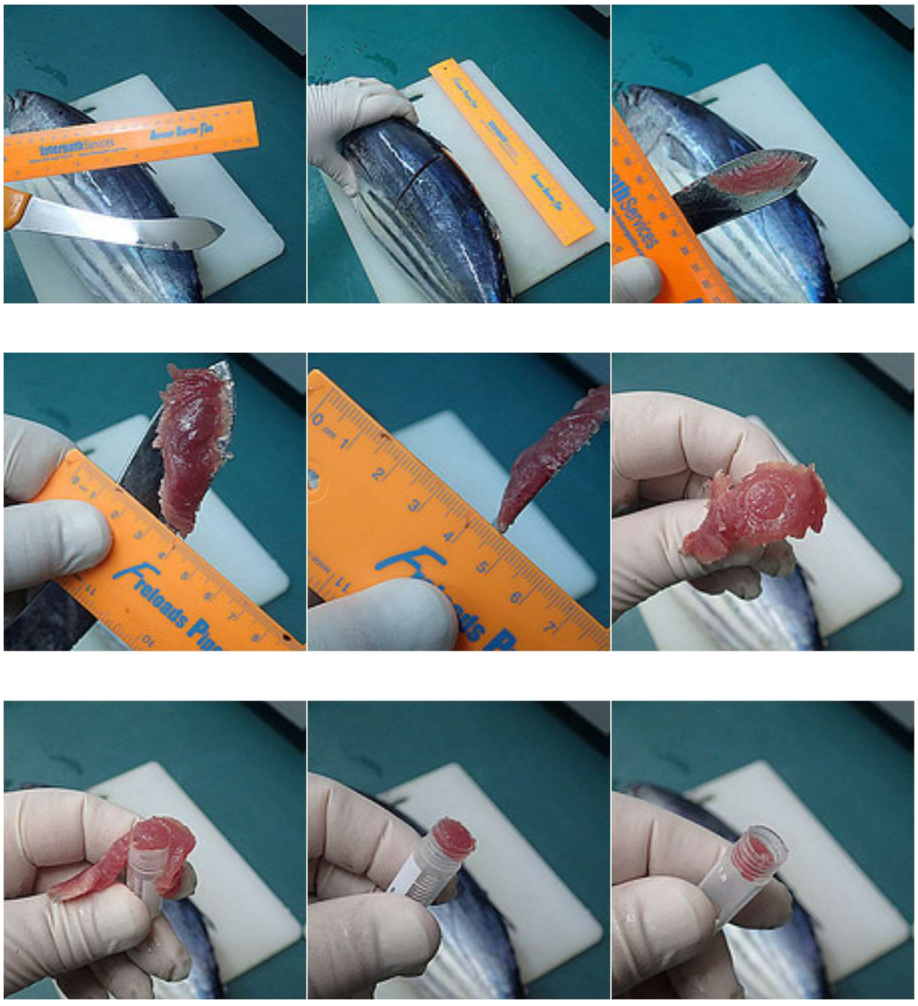
f. From the area where the muscle cube sample was removed cut another small, clean muscle tissue sample (about the size of a pencil eraser). Avoid touching the sample. Open a 2.0 mL plastic screw top cryovial, filled with 1.5 mL of non-hazardous preservative, supplied by NMFS. As shown in **Figure 6**, cut out a small piece of tissue (about 10 mm square by 5 mm thick), and with that small piece of tissue on the blade push the sample inside the tube. Do this twice so that 2 tubes contain one plug of tissue each. Err on the side of less tissue, rather than more as complete preservation is critical. Tighten the cap on the tube and then invert the tube a few times to immerse the tissue sample into the preservative to ensure that all tissue is completely covered in liquid to ensure that sample is fully immersed in solution.

g. Record the date, document #, and fish # on the vial. Place the vial with sample in the sandwich bag with the muscle cube label, and seal, then seal the freezer bag.

h. Fill in the oval for the collected “MUSCLE VIAL” on the LPBS questionnaire.

i. The muscle tissue samples should be kept on ice and then stored frozen.

Figure 6: Cut out a small piece of tissue (about 10 mm square by 5 mm thick), and with that small piece of tissue on the blade push the sample inside the tube.



GONAD SAMPLES

a. Once the whole gonad weight is recorded, locate the center of either lobe of the gonad as shown in Figure 6.

Figure 6: Testes (left) and ovaries (right) with central gonad region circled. Three gonad subsamples should be taken from the center of either lobe.

b. Using the corer, remove **three** subsamples of gonad tissue about the size of a sugar cube as shown in Figure 7.

c. Place each subsample in a separate bottle filled with 10% neutral buffered formalin (~10 mL); therefore, wear the provided Nitrile gloves and safety glasses when putting samples in bottles. Put the three bottles in the pint or quart size zip-lock freezer bag. Fill out a sample label with the correct date, control #, document #, fish #, species, SFL, CFL and TYPE (GONAD) place in the bag with the bottles, and then seal the bag. Make sure the outside of the zip-lock bag is identified with the control #, document #, and fish # with a black sharpie.

Figure 7. Use corer to remove three samples from the central gonad region. Place corer on the exterior of the gonad and twist corer until a sample the size of a sugar cube is removed. Place each sample in a separate bottle, make sure the cap is secured tightly, and store bottles in labeled zip-lock bag.

d. Fill in the oval for the collected "GONAD SAMPLES" on the LPBS questionnaire.

e. The formalin gonad samples should be stored in the provided screw-top bucket. Gonad samples in formalin should **not** be frozen.

7.0 LPBS Site Description Form (BIOS)

The Site Description Form (BIOS) is used to summarize the results of the completed LPBS assignment with information from each site (within a cluster). Paperwork for each assignment that you submit must include at least one Site Description Form. If there are three sites or less in the cluster, then there should be only one BIOS submitted. There is only enough space on each BIOS to record information for three sites visited.

INTERVIEWER CODE: Each Interviewer is given a unique four-digit identification number. This number, found on the back of the Agreement, should be used on all submitted forms.

INTERVIEW DATE: The Interviewer should record the Month/Day of the intercept. Two digits for both the month and the day should be used.

STATE CODE: Enter the two-digit numeric code for the state of intercept.

CONTROL NUMBER: Each assignment is given a four-digit identifying number. The first digit of all LPBS assignment control numbers is 3.

SITE NAME &
SITE #1 CODE: Enter the four-digit number of the site where the interview is being conducted. The site number should be listed on the Interviewer's assignment schedule as one of the sites within the assigned cluster, as well as on the LPIS cluster lists.

COUNTY CODE #1: Enter the three-digit FIPS number assigned to the county of the intercept. The county code should be listed on the Interviewer assignment listing, as well as on the LPIS cluster lists.

CALIBRATED HANDHELD SCALE USED TO OBTAIN WEIGHTS?: If your Hand-Held Scale was used to obtain weights at this site, fill in the "Yes" oval, otherwise fill in the "No" Oval.

CERTIFIED SCALE ON PREMISES USED TO OBTAIN WEIGHTS?: If you used the certified scale to obtain weights at this site, fill in the "Yes" oval, otherwise fill in the "No" Oval.

SCALE CERTIFICATION DATE (MM / DD / YYYY): Enter the two digit month, two digit date, and four digit year of the most recent scale certification.

SCALE CERTIFIYING AGENCY Enter the name of the agency that certified the scale.

SITE REPRESENTATIVE NAME and TELEPHONE NUMBER — If a Site Representative is present at the site, record their name and the telephone number for the site.

SITE REPRESENTATIVE SIGN-IN INITALS — After "checking-in" with a Site Representative, ask the Site Representative to initial your BIOS on the "write-in" line for SITE REPRESENTATIVE SIGN-IN INITALS in the section for the site they represent.

TIME OF SIGN-IN INITIALS

If the Site Representative initials your form, tell them the time and record the time of the Sign-in initials in military time.

SITE REPRESENTATIVE SIGN-OUT INITALS — Before leaving the last site and terminating the assignment, ask a Site Representative to initial your BIOS on the "write-in" line for SITE REPRESENTATIVE SIGN-OUT INITALS in the section for the site they represent.

TIME OF SIGN-OUT INITIALS

If the Site Representative initials your form, tell them the time and record the time of the Sign-out initials in military time.

The data fields above must be recorded for each site visited on a particular assignment whether or not any interviews were actually obtained.

RECORD DATA FOR EACH SITE THAT YOU VISIT.

8.0 LPBS Assignment Summary Form (BSF)

The LPBS Assignment Summary Form (BSF) is used to summarize the results of the completed assignment, and to charge for work done on the assignment. Each assignment that you send in must include an Assignment Summary Form.

INTERVIEWER NAME: The Interviewer should PRINT his or her name in BLOCK CAPITAL LETTERS.

INTERVIEWER CODE: Each Interviewer is given a unique four-digit identification number. This number, found on the back of the Agreement, should

be used on all submitted forms.

INTERVIEW DATE: The Interviewer should record the Month/Day of the intercept. Two digits for both the month and the day should be used.

CONTROL NUMBER: Each assignment is given a four-digit identifying number. The first digit of all LPBS assignment control numbers is 3.

STATE CODE: Enter the two-digit numeric code for the state of intercept.

COUNTY. Enter the three-digit FIPS number assigned to the county of the intercept. The county code should be listed on the Interviewer assignment listing, as well as on the LPIS cluster lists.

CLUSTER. Enter the two digit number for the cluster of sites that you are assigned for that day. The cluster number should be listed in your assignment schedule. Possible values will range from 01, 02, 03…to 10.

BEGIN. Enter the time (military format) when you begin your assignment. That is, enter the time when you arrive on-site (at the first site in the cluster) to begin your assignment.

END. Enter the time (military format) when you finish your assignment. That is, enter the time when you leave the cluster and terminate the assignment.

Weather Favorable for Fishing Offshore?

Fill in the oval for "Yes" if the weather conditions are favorable for offshore fishing. If the offshore conditions are poor, fill in the oval for "No". In general, strong winds (25-30 knots, especially from the Northeast) and high seas (especially greater than 8-10 feet) will cause many offshore fishermen to cancel their trips. Assignments that are conducted despite poor offshore conditions should be attempted only when fishing activity can be confirmed beforehand.

9.0 Hostile sites and refusals

Sites where samplers are impeded or prohibited from interviewing are referred to as "hostile" sites. When an Interviewer encounters a hostile site as part of their assigned cluster they should take the following action:

- Avoid confrontation with the site manager or any other persons at the site and leave the "hostile" site immediately;

- Record that the site was "hostile" on their Site Description Form (SDF) by recording relevant information, such as:

"[Site Representative] will not allow interviewing at [Site Name], because [Reason]."

- Notify the area Field Supervisor as soon as possible.

QuanTech headquarters and the Field Supervisor must be notified after leaving a "hostile" location, in keeping with the deadlines for reporting assignment status/faxing paperwork (within 24 hours).

If asked to leave a site, it may be possible to visit other sites within an assigned cluster. As long as the assignment was for a cluster of sites, and not just one site, go to the other sites within the cluster and obtain interviews with eligible fishery participants.

If the assignment was for a single site, and you are asked to leave, terminate the assignment. An email to QuanTech headquarters and your Field Supervisor explaining what happened is required.

At other sites LPBS Samplers may be allowed to interview but only at certain locations within the site as determined by the site manager (e.g., interviewing allowed at slips but not at the fuel dock). Interviewers should note this on the SDF but can continue to interview at the site in the locations allowed. The extent of the impediment should be provided, such as:

> "No interviewing at fuel dock, [number] missed eligible vessels due to restriction. Vessels were returning to private access sites outside of the cluster."

Samplers may encounter captains who refuse to participate in the survey because they are in a rush, don't agree with NMFS policies or a variety of other reasons. Captains who don't agree with NMFS policies should be encouraged to contact NMFS directly to air their complaints (using the address or phone number on the "To Whom" letter).

It is not appropriate to defend or attack NMFS or its policies. Under no circumstances should an Interviewer identify him/herself as an employee of the National Marine Fisheries Service. Interviewers are employees of QuanTech.

If the captain or owner does not want to participate, and does not want to designate a mate to participate, but remains cordial (soft refusal), then try once to convert the soft refusal by politely explaining that the survey collects catch and effort statistics used to manage the fishery…If they do not participate then they will not be represented in the data collection. Their participation will strengthen the accuracy and precision of the survey, and therefore lead to appropriate management decisions.

Alternatively, respondents need to be reassured that the information they provide is confidential under NOAA Administrative order 216-100. Always remind them that you are not there to issue citations or fines, and that all you want to do is collect accurate fishery data.

Samplers should never be "pushy". Interviewers should only tell Vessel Representatives that the

survey is mandatory if they ask directly. Offer a copy of the "To Whom" letter, which states that participation in the survey is required. If a respondent refuses the survey midway through an interview, the Interviewer may inform the respondent that the Interview is almost finished and thank them for their patience to try to convert the mid-interview soft refusal.

If the respondent absolutely refuses to participate, will not designate a mate to participate, or becomes belligerent or irate (hard refusal), the Interviewer should simply say "Thank you" and walk away. No attempts should be made to convert a hard refusal. If the respondent follows the Interviewer, or acts out-of-line, the Interviewer should leave the premises immediately. In either case, whether the respondent gives a soft refusal or a hard refusal, the Interviewer must never threaten enforcement action.

Besides tallying as either an initial or mid-interview refusal, Interviewers should record as much of the following information as possible: name of the vessel, HMS permit number, state registration number, Coast Guard documentation number, name of person refusing, any LPS fish seen, the reason for refusal, and any other relevant details in the comments section.
For Example:

> "The captain of the "Tuna Time" refused today; HMS permit # 12345678, State Registration MS1234AB. I saw them unload 1 school BFT. He says he will not participate until someone from NMFS tells him he must."

To reduce the number of "hostile" sites and refusals, the National Marine Fisheries Service will send a package of Large Pelagics Survey information to "hostile" site owners or fishery participants recorded on your Site Description Form(s).

10.0 Confidentiality of data

In addition to collecting high quality data, following procedures, and maintaining a courteous and professional attitude while conducting your assignments, one of the most important aspects of interviewing for the LPIS includes your assurance to respondents that the data they provide will remain confidential.

The confidential nature of the data applies to all information collected during an interview, even what species were caught, where they were caught, and what method and gear was used. Under no circumstance should you ever disclose information given to you by a respondent to anyone who is not authorized to have access to such confidential fisheries data.

This policy applies to all types of communication, written, verbal, or otherwise, including Internet message board postings.

When you get a request for data and/or survey design information simply provide contact information for NOAA and QuanTech. This information is listed on the LPIS "To Whom" Letter.

11.0 Overlap with the Access Point Angler Intercept Survey (formerly MRFSS)

Other groups, ACCSP and State Agency Partners, are contracted to collect data for the NMFS Access Point Angler Intercept Survey (APAIS). In the event that an APAIS Interviewer arrives at a site and finds an LPBS Interviewer on-site, or an LPBS Interviewer arrives at a site and finds an APAIS Interviewer on-site, then "overlap" has occurred. The protocol for LPBS/APAIS overlap is different from the protocol for LPIS/APAIS overlap. When LPBS/APAIS overlap occurs, the LPBS Interviewer may stay on-site, but must yield to the APAIS Interviewer. That is, LPBS activities must not impede APAIS interviewing. LPBS Interviewers may ask the questions on the LPBS form after all anglers from a vessel have been interviewed by the APAIS Interviewer. Interviewers are required to report **all** occurrences of LPBS overlap to QuanTech headquarters.. The date, time, location (site name and number), and how the overlap affected data or sample collection must be included in a report of the overlap. A report of overlap must be provided to QuanTech headquarters over the phone or by email.

All incidents of overlap between LPBS and APAIS Interviewers (or other Interviewers from other fisheries-related surveys), and how they were resolved, must be reported to QuanTech headquarters within 24 hours.

12.0 Overlap with the Large Pelagics Intercept Survey

LPIS Interviewers and LPBS Samplers may be present at the same site at the same time. However, the same Interviewer/Sampler cannot do both an LPIS and LPBS assignment on the same day. If an LPIS Interviewer and LPBS Sampler are at the same site they should only share information as the situation presents itself. That is, they should not deliberately work as a team because this may mean that one or both data collection agents will not be situated in the right location at the site.

The LPBS Sampler should locate his/herself in the place where they can get the most BFT measurements and weights. Most often this will be near the scale or cleaning station. This may not work for the LPIS interviewer whose main objective is to sample all LPS eligible vessels, not just those with catch. If the LPIS Interviewer and LPBS Sampler happen to be in close proximity to one another they may share information, i.e., the LPBS interviewer may report fish lengths to the LPIS interviewer to avoid having to measure the same fish twice. However, in other instances the same fish may have to be measured twice (if, for example, the LPBS Sampler is located at the weigh station and the LPIS Interviewer is interviewing out on the docks).

13.0 Storage and Shipping of Biological Samples

As previously discussed, otoliths and gonad samples should not be frozen. Dorsal spine samples and muscle tissue samples and vials should be kept frozen. Contact QuanTech headquarters with the planned shipping date. Please do not plan shipments for delivery on Saturday or Sunday. Shipments should be sent Monday-Wednesday. On the planned ship date, prepare an insulated shipping container (provided by QuanTech). For proper dry ice and formalin shipping procedures, please refer to the documents "Handling and Transportation of Dangerous Goods" and "Guide to Shipping w/ Dry Ice." Organize the samples for shipping by placing all bags of

samples from 1 fish into one appropriate size zip-lock bag. Gather the "fish" packages and pack on dry ice. Seal the insulated shipping container and send overnight by FedEx (account # and reference number will be provided by QuanTech headquarters).

Ship to:

NOAA/NMFS – Panama City Laboratory
Attn: Ashley Pacicco
3500 Delwood Beach Road
Panama City Beach, FL 32408

After shipping, email Robert O'Haver (rohaver@quantech.com) at QuanTech headquarters and Ashley Pacicco (ashley.pacicco@noaa.gov) to provide the package's FedEx tracking #.

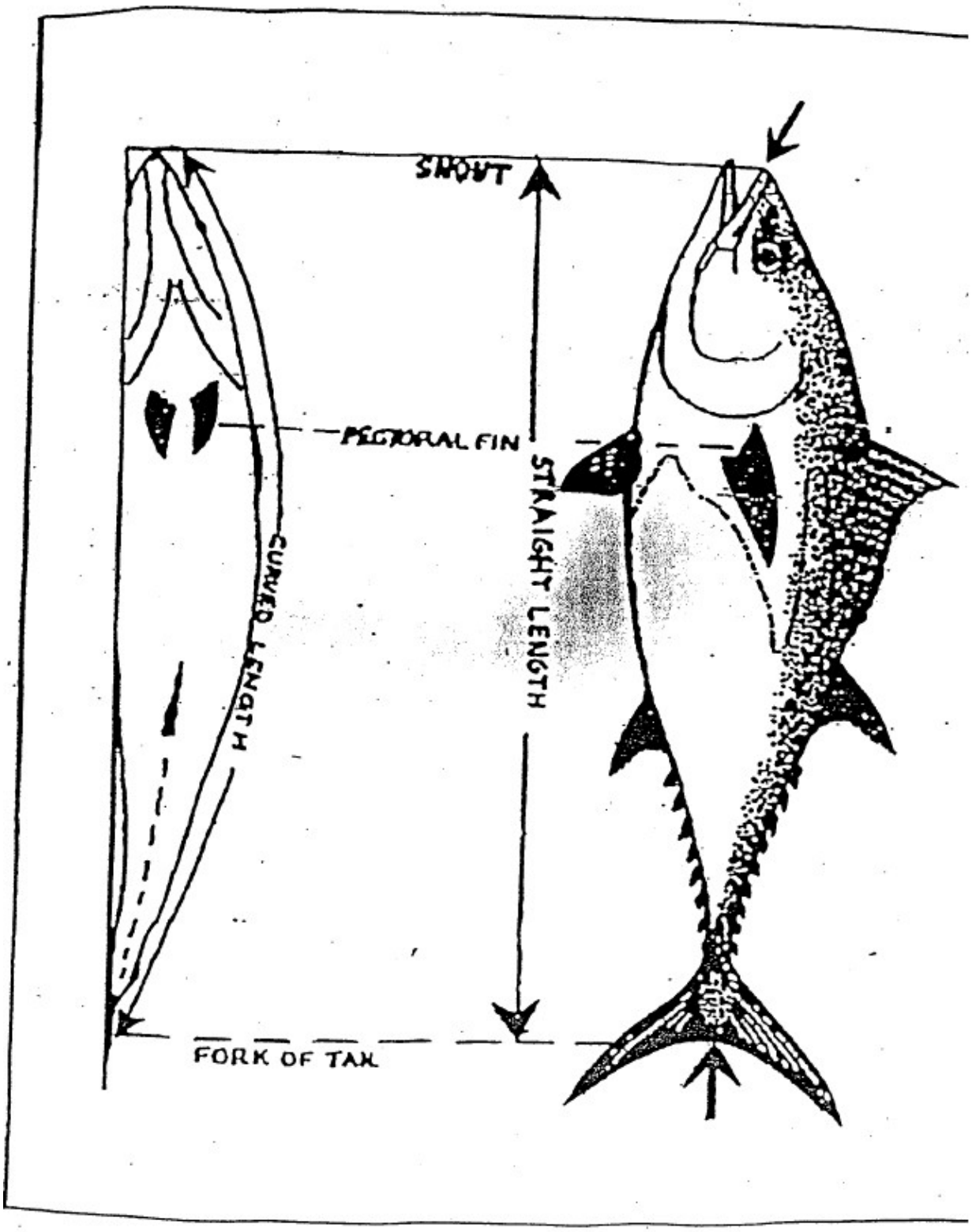
14.0 QuanTech Headquarters Staff

Table 1: The headquarters office can be reached at 1-800-229-5220. If you need to contact the QuanTech headquarters office please contact any of the following staff members listed below.

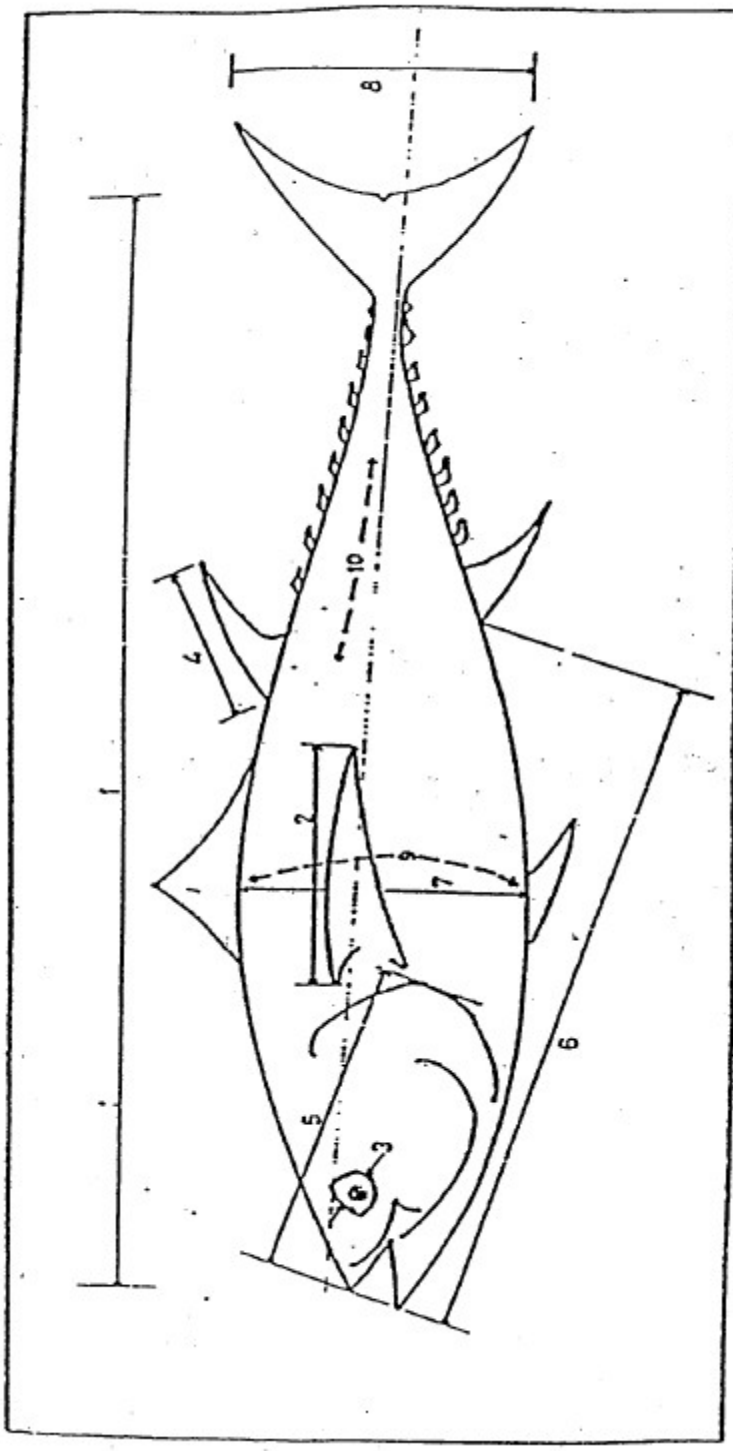
Title	Name	Email Address	Phone Extension
Program Manager	Robert O'Haver	rohaver@quantech.com	7822
Staff Biologist	James Bethune	jbethune@quantech.com	7819
Data Manager	Christian Johnson	cjohnson@quantech.com	7830

Please call or email QuanTech headquarters staff to confirm receipt of your faxed paperwork, discuss interviewing procedures or coding, inform us about shipments, etc. We will contact you frequently to discuss the status of your assignments and to verify and/or obtain information, as required by our contract with NMFS. Please keep in mind that any critique of your work is meant to be constructive. We all must work together to ensure that NMFS receives the best available data to make the best management decisions.

Appendix A: Straight Fork Length vs. Curved Fork Length

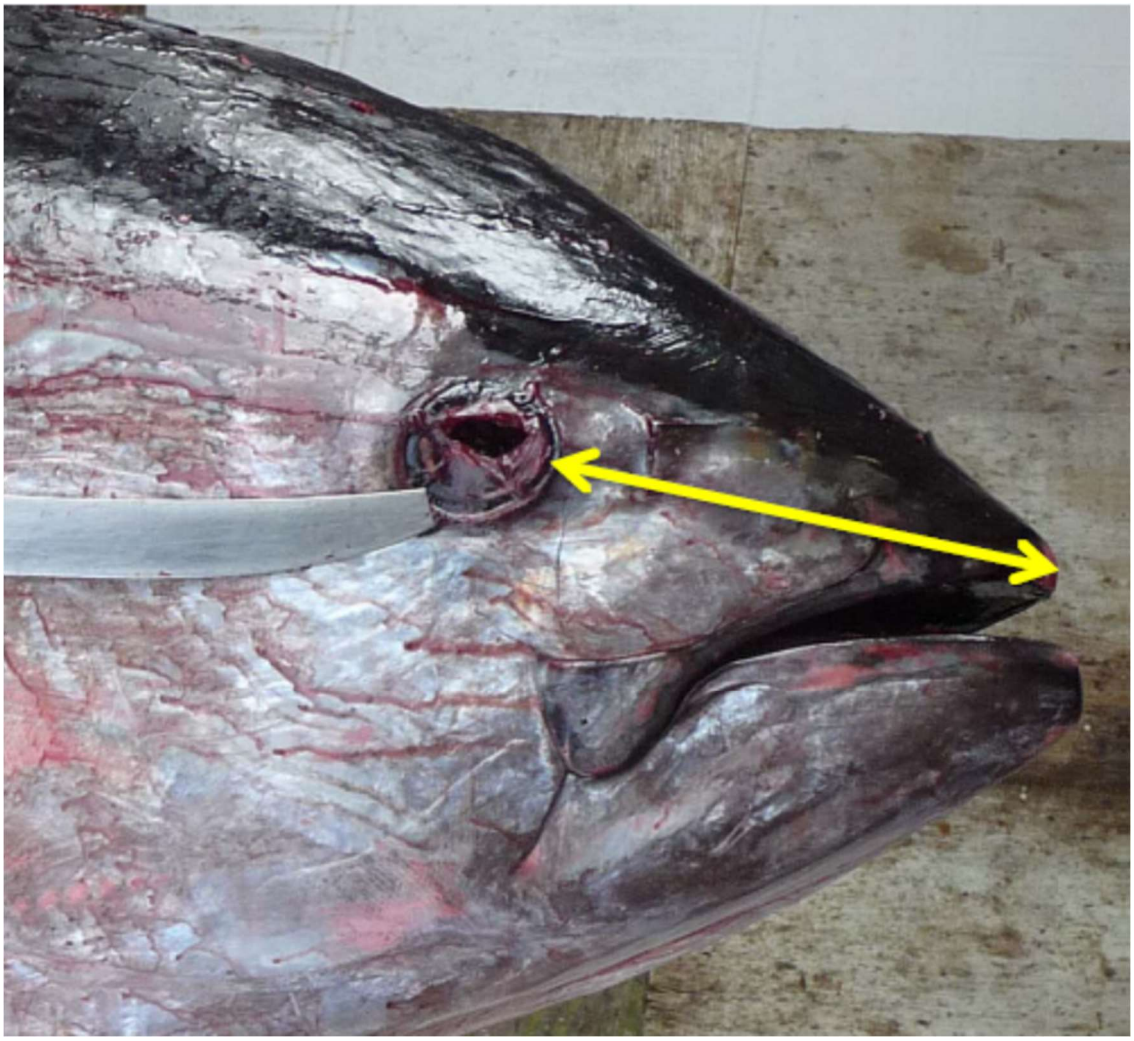


Appendix B: Half Girth is displayed as measurement # 9.



1. Fork Length: Snout of upper jaw to fork of tail.
2. Length of Pectoral Fin: From most anterior visible point of insertion to tip with fin laid flat along body.
3. Maximum diameter of Iris: measured to edge between yellow or bluish iris and surrounding dark tissue.
4. Length of Second Dorsal Fin: from end of groove of first dorsal fin to tip of second dorsal fin.
5. Length of Head: from snout of upper jaw to most distant point on edge of opercle.
6. Snout to Insertion of Anal Fin: from snout of upper jaw.
7. Maximum Depth.
8. Spread of Caudal.
9. Maximum Girth.
10. Flank Length: measured along flank from snout of upper jaw to fork of tail.

Appendix C: Measuring Snout Length



Appendix D: Fishing Areas List

Connecticut

Area	Lat	Long
31 Fathom Hole	40 50	70 45
Acid Barge	41 02	71 27
Atlantis Canyon (Atlantic Canyon)	39 47	70 13
Block Canyon	39 50	71 14
Block Island Sound	41 11	71 50
Butterfish Hole	40 50	71 35
Claw (The Claw)	41 05	70 50
Cox Ledge	41 05	71 10
Coxens Ledge	41 25	70 55
Dumping Grounds	40 45	70 55
East Grounds	41 10	71 25
Fingers	40 55	70 55
Fish Tales (Fish Tails)	40 00	71 20
Fishers Island Sound	41 18	72 00
Horns (The Horns)	40 48	71 30
Hudson Canyon	39 30	72 20
Hydrographer Canyon	40 06	68 57
Inside Hole	41 05	71 45
Jenny's Horn	40 49	71 33
Little Fish Tails (North of Fish Tails)	40 19	71 30
Middle Grounds (between Dip & Tails)	39 55	71 32
Midway Buoy	41 05	71 45
Montauk Shoal	41 01	71 50
Mud Hole	41 00	71 20
North Bar	41 05	71 35
Race (The Race)	41 15	72 00
Ranger Wreck	40 35	71 47
Rosiet Ledge	41 15	71 50
Ryan's Horn	40 46	71 27
Plum Gut	41 10	72 13
Shark Ledge	41 05	71 30
Suffolk Wreck	40 53	71 13
Tuna Ridge (Tuna Bank)	40 55	71 17

Maine

Area	Lat	Long
Bald Head	43 41	69 51
Blacks Ridge	43 06	69 11
Boon Island Ledge	43 07	70 25
Cape Porpoise Peaks	43 15	70 17
Cape Porpoise Whistle	43 20	70 25
Cashes	42 45	68 45
Cashes Ledge/Ammen Rock	42 55	68 55
Cashes Ledge/Buoy	42 40	68 35
Cove (The Cove)	42 48	70 22
Cuckolds	43 47	69 39
Edge of Bottom	43 25	70 15
Fippennies Ledge	42 45	69 15
Flagpole	43 20	70 10
Gulch	43 25	69 52
Great Ledge	43 31	69 37
Isles of Shoals	43 00	70 29
Jefferies	43 10	70 05
Jeffrey's Ledge	42 55	70 10
Kettle Bottom	43 30	69 42
Mistaken Ground	43 21	69 35
Monhegan	43 44	69 19
Murry Hole	43 31	69 42
Old Scantum	42 35	70 30
Pasture	43 30	69 50
Pigeon Hill (on Jeffreys ledge)	42 55	70 05
Platts Bank 29F	43 13	69 40
Pollock Nubble	43 30	69 55
Portland LNB	43 31	70 08
Saco River Whistle /Wood Island	43 28	70 18
Sagadahoc	43 25	69 42
Seguin Ledge	43 40	69 46
SE Hole	43 34	69 50
Shark Grounds	43 17	69 53
Small Point Rocks	43 39	69 50
Tantas Ledge	43 20	70 10
Three Dory Ridge	43 13	69 19
Trinidad	43 10	69 30
West Cod Ledge	43 34	70 08

Maryland & Delaware

Area	Lat	Long
Baltimore Canyon	38 20	73 45
Baltimore Canyon 500 fathom	38 06	73 49
Baltimore Canyon 100 fathom	38 14	73 50
Chicken Bone	38 15	74 28
Elephant Trunk	38 35	74 05
Fingers 20 Fathom	38 12	74 37
Fingers Ocean City	38 05	74 40
Great Gull (Shoal or Bank)	38 14	75 02
Ham Bone	38 11	74 24
Hot Dog (North)	38 06	74 17
Jack Spot	38 05	74 45
Lightship (Delaware Lightship or "D" Buoy)	38 27	74 42
Little Gull	38 17	75 02
Lummis Slough	40 00	73 35
Lumps	38 49	74 28
Lumpy Bottom	37 27	74 53
Marine Electric	37 53	74 50
Masseys Canyon	38 25	74 20
Norfolk Canyon	37 05	74 35
Parking Lot	37 40	74 50
Poor Man's Canyon	37 52	74 06
Rock Pile	37 39	74 22
Sausages	37 59	74 33
Tea Cup	38 21	74 10
Triple Wrecks	38 30	74 32
Twin Wrecks	38 13	74 43
Washington Canyon	37 27	74 27
Wilmington Canyon	38 24	73 27
Winter Quarter Shoal	37 58	75 04

Massachusetts

Area	Lat	Long
Atlantis Canyon (Atl. Canyon)	39 47	70 13
BB Buoy	41 16	69 17
BC Buoy	41 41	69 35
Billingsgate Shoal	41 52	70 06
Cape Cod Bay N	42 00	70 20
Cape Cod Bay S	41 50	70 20
Cape Poge	41 25	70 25
Chatam (East)	41 40	69 55
Claw (The Claw)	41 05	70 50

Cox Ledge	41 05	71 10
Crab Ledge	41 38	69 40
Cutty Hunk	41 25	70 55
Dry Salvages	42 40	70 35
Dump, The (off Marblehead)	42 25	70 40
Dumping Grounds (Dump)	40 45	70 55
Falmouth Harbour	42 31	70 36
Fingers (Near Nantucket)	41 05	70 05
Fishing Ledge	41 56	70 18
Gay Head	41 20	70 55
Great Round Shoal	41 25	69 50
Great South Channel	40 53	68 58
Halibut Point	42 25	70 35
H-Buoy (The H-Buoy)	42 10	70 30
Hedge Fence	41 30	70 32
Hooter (Whistle Buoy)	41 15	70 26
Horseshoe Shoal Wreck	41 30	70 25
Hydrographer Canyon	40 06	68 57
Ipswich Bay	42 40	70 40
Isles of Shoals	43 00	70 29
Jeffreys Ledge	42 55	70 10
Loran Tower	41 15	69 55
Mass Bay	42 15	70 30
Muskeget Channel	41 17	70 26
Nantucket Shoals	41 15	69 50
Nantucket Sound	41 25	70 10
Nomans Land	41 15	70 45
Peaked Hill Bar	42 05	70 08
Pigeon Hill (on Jeffreys ledge)	42 55	70 05
Pollock Rip Channel	41 30	69 55
Race Point	42 04	70 17
Regal Sword	41 28	69 21
Sesuit Harbor	41 50	70 05
Stellwagen Bank	42 16	70 17
Stellwagen Bank N	42 25	70 25
Stellwagen Bank S	42 10	70 15
Suffolk Wreck	40 53	71 13
Thacher Island	42 38	70 33
Tillies Bank	42 30	70 10
Veatch Canyon	39 52	69 33
Vineyard Sound	41 25	70 45
Wasque Shoal	41 18	70 28
Wood End	42 01	70 14

New Hampshire

Area	Lat	Long
Bigelow Bight	42 53	70 47
Boon Island Ledge	43 07	70 25
Cape Porpoise Whistle	43 20	70 25
Cashes Ledge/Ammen Rock	42 55	68 55
Cashes Ledge/Buoy	42 40	68 35
Cove (The Cove)	42 48	70 22
Fingers (Near Nantucket)	41 05	70 05
Fippennies Ledge	42 45	69 15
Halibut Point	42 25	70 35
Isles of Shoals	43 00	70 29
Jeffrey's Ledge	42 55	70 10
Pigeon Hill (on Jeffreys ledge)	42 55	70 05
Platts Bank	43 10	69 40
Saco River Whistle / Wood Island	43 25	70 15
Scantum Basin (old and new)	42 50	70 25
Stellwagen Bank	42 16	70 17
Stellwagen Bank N	42 25	70 25
Stellwagen Bank S	42 10	70 15

New Jersey

Area	Lat	Long
1000 Fathom Hole	38 05	73 20
19 Fathom Lump	38 30	74 20
20 Fathom Temple	38 45	74 20
28 Mile Wreck	39 00	74 05
750 Squares	38 55	73 55
Acid Waters ('The Stain')	40 22	73 42
B.A. Buoy	40 20	73 50
Bacardi Wreck	39 50	72 45
Baltimore Canyon	38 20	73 45
Barnegat Ridge	39 40	73 50
Bidevind Wreck	39 49	72 49
Carteret Canyon	38 52	72 49
Chicken Canyon	39 52	73 03
Coimbra	39 55	72 25
Dumping Grounds	38 50	73 25
Elephant Trunk	38 35	74 05
Farms (The Farms)	40 15	73 48
Fingers	39 40	73 30

Glory Hole	39 55	73 15
HA Buoy	40 10	73 20
Ham Bone	38 11	74 24
Hot Dog (North)	38 06	74 17
Hudson Canyon	39 30	72 20
Jack Spot	38 05	74 45
Jacob Jones Wreck	38 40	74 29
Lillian Wreck	40 02	73 32
Lindenkohl Canyon	38 45	72 56
Little Italy	40 05	73 38
Lobster Hole		
Manasquan Ridge	40 00	73 45
Massey's Canyon	38 25	74 20
Monster Ledge	40 10	73 35
Mud Hole	40 10	73 35
Ole's Lump	39 45	73 40
Poor Man's Canyon	37 52	74 06
Resor Wreck	39 45	73 25
Shrewsbury Rocks	40 20	73 57
Spencer Canyon	38 37	73 12
Star (The Star)	38 35	73 35
Tea Cup	38 21	74 10
Texas Tower	39 50	72 40
Tolton Lump	38 55	73 50
Tom's Canyon	39 03	72 35
Triple Wrecks	39 35	72 55
Virginia wreck	40 07	72 52
Washington Canyon	37 27	74 27
Wilmington Canyon	38 24	73 27

New York

Area	Lat	Long
Acid Barge	41 02	71 27
Acid Waters (aka 'The Stain')	40 22	73 42
Atlantis Canyon (Atlantic Canyon)	39 47	70 13
Bacardi Wreck	39 50	72 45
Block Canyon	39 50	71 14
Block Island Sound	41 11	71 50
Butterfish Hole	40 50	71 35
Cartwright	41 00	71 48
Chicken Canyon	39 52	73 03
CIA Grounds	40 56	71 43
Coimbra	40 24	72 22
Compass Rose	40 13	72 46

Cox Ledge	41 05	71 10
Dip (The Dip)	39 55	71 44
Dumping Grounds	40 45	70 55
Farms (The Farms)	40 15	73 48
Fingers	40 55	70 55
Fish Tales (Fish Tails or Tails East)	40 00	71 20
Forty Fathom Lumps	40 25	71 35
Gardiners Bay	41 05	72 11
Glory Hole	39 55	73 15
Gully (The Gully)	41 00	71 20
HA Buoy	40 10	73 20
Horns (The Horns)	40 48	71 30
Hudson Canyon	39 30	72 20
100 Square (Hudson)	39 30	72 10
Jenny's Horn	40 49	71 33
Lillian Wreck	40 02	73 32
Linda	40 23	73 00
Little Fish Tails (North of Fish Tails)	40 19	71 30
Mako Hotel	40 00	73 10
Middle Grounds (between Dip & Tails)	39 55	71 32
Montauk Shoal	41 01	71 50
Mud Hole 1 (off Manasquan inlet NJ)	40 10	73 35
Mud Hole 2 (off Block Island, RI)	41 00	71 20
NA Buoy	40 26	73 11
Oregon	40 30	72 50
Plum Gut	41 10	72 13
Ranger Wreck	40 35	71 47
Rock Piles	40 10	73 00
Rose (The Rose)		
Ryan's Horn	40 46	71 27
San Diego	40 30	73 00
Shagwong Reef	41 06	71 54
Sharks Ledge	41 04	71 28
Suffolk Wreck	40 53	71 13
Texas Towers	39 50	72 40
Tuna Ridge (Tuna Bank)	40 55	71 17
Veatch Canyon	39 52	69 33
Virginia wreck	40 07	72 52
Yankee	40 20	73 15

Rhode Island

Area	Lat	Long
31 Fathom Hole (or The Hole)	40 55	70 15
Acid Barge	41 02	71 27
Atlantis Canyon (Atlantic Canyon)	39 47	70 13
Block Canyon	39 50	71 14
Block Island Sound	41 11	71 50
Butterfish Hole	40 50	71 35
Claw (The Claw)	41 05	70 50
Cox Ledge	41 05	71 10
Coxens Ledge	41 25	70 55
Dumping Grounds (Dump RI, MA, NY)	40 45	70 55
East Grounds	41 10	71 25
Fairway Buoy	41 07	71 23
Fingers (RI, MA, NY)	40 55	70 55
Fish Tales (Fish Tails)	40 00	71 20
Gully (The Gully)	41 00	71 20
Horns (The Horns)	40 48	71 30
Hydrographers Canyon	40 06	68 57
Inside Hole	41 05	71 40
Jenny's Horn	40 49	71 33
Little Fish Tails (North of Fish Tails)	40 19	71 30
Middle Grounds (between Dip & Tails)	39 55	71 32
Midway Buoy	41 05	71 45
Mud Hole	41 00	71 20
North Bar	41 05	71 35
Plum Gut	41 10	72 13
Ranger Wreck	40 35	71 47
Rosies Ledge	41 15	71 50
Ryan's Horn	40 46	71 27
Shark Ledge	41 05	71 30
Suffolk Wreck	40 53	71 13
Texas Towers	39 50	72 40
Tuna Ridge (Tuna Bank)	40 55	71 17
Veatch Canyon	39 52	69 33

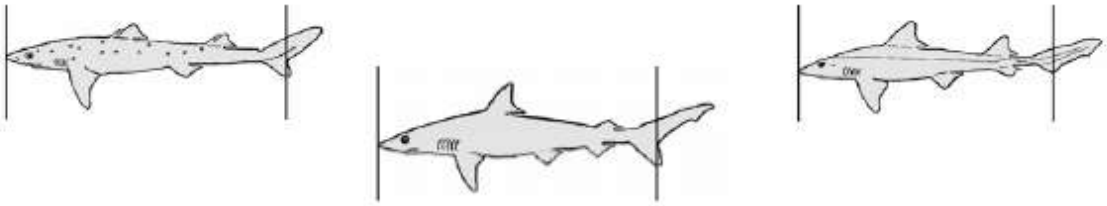
Virginia

Area	Lat	Long
10 Fathom Lump	37 10	75 15
21 Mile Hill	37 25	75 10
26 Mile Hill (Hambone)	37 15	75 10
44 Fathom Wreck	36 55	74 45
4A Buoy	36 35	75 45
Bluefish Alley	36 35	75 30
CB Buoy Line SE	36 50	75 50
Chesapeake Bay Bridge	37 05	76 00
Chesapeake Bay Light Tower	36 55	75 45
Chicken Bone	38 15	74 28
Cigar	36 30	74 50
East Point	36 55	75 55
Fingers, 20 Fathom	37 25	74 45
Fingers (The Fingers)	37 00	75 10
Fish Hook	36 45	75 30
George II Trench	36 40	75 20
Hot Dog	36 45	75 20
Jack Spot	38 05	74 45
Latimer Shoal	37 07	75 59
Lumps (The Lumps)	36 35	75 30
Lumpy Bottom	37 27	74 53
Marine Electric	37 53	74 50
Meatcleaver	37 00	75 30
Mud Wrecks	39 08	74 25
NOAA Buoy	36 35	74 50
Norfolk Canyon	37 05	74 35
Parramore Banks	37 30	75 25
Parking Lot	37 40	74 50
South Tower	36 15	75 15
Spring Chicken	36 50	75 10
Tiger Wrecks	36 45	75 45
Triangle Wrecks	37 00	75 25
Triple Zeros	36 15	74 50
Wachapreague Inlet	37 35	75 35
Washington Canyon	37 27	74 27

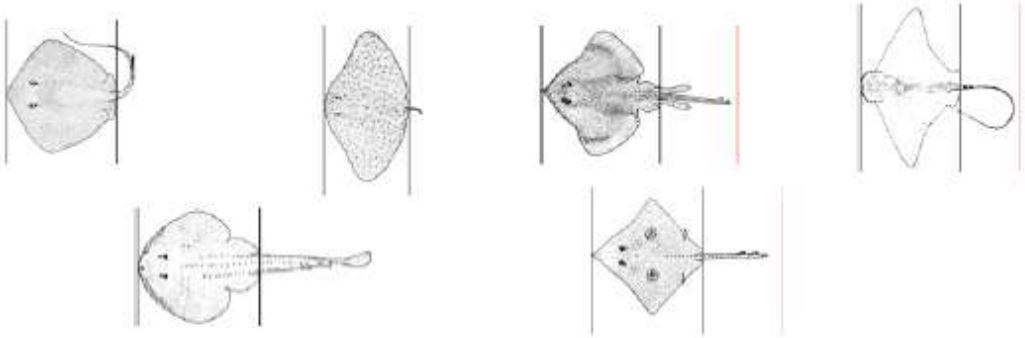
Appendix E: Measuring Fish

Correct procedures for measuring lengths of various types of fish are shown in the diagrams below.

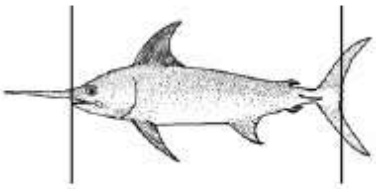
Sharks and sturgeons are measured from the tip of the snout to the center of the fork of the tail.



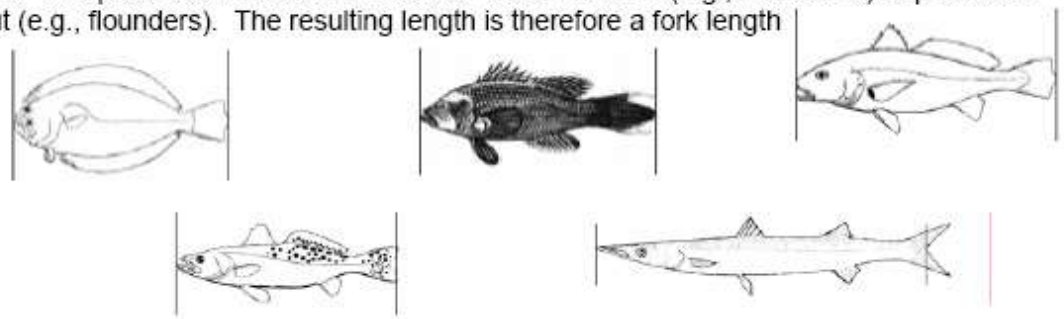
Skates and rays are measured from the tip of the snout to the distal end of the pelvic fins. Do not include the claspers.



Billfishes and swordfish are measured from the tip of the lower jaw to the center of the fork of the tail.



All other species are measured from the most anterior tip of the longest jaw (mouth closed) or end of snout, whichever is terminal, to the posterior tip of the tail at its center line. This procedure is the same whether the tail forks in (e.g., mackerels) or protrudes out (e.g., flounders). The resulting length is therefore a fork length



Measure the straight fork length of all fish in millimeters. For the following tuna species, curved fork lengths should also be recorded: bluefin, bigeye, albacore, yellowfin, and skipjack. Curved fork length must be taken in a line, tracing the contour of the body from the tip of the upper jaw to the fork of the tail, which abuts the dorsal insertion of the pectoral fin and the dorsal side of the caudal keel. The measuring tape must pass over (and touch) the pectoral fin and the caudal keel.

Appendix F: Species Codes

LPS Species Name	LPS Species Code	*	LPS Species Name	LPS Species Code	*	Non-LPS Species Name	Non-LPS Species Code
			Atlantic sharpnose shark	4941	*		
Dolphin	1050	*	Blacktip shark	4871	*	Barracuda	0180
Greater amberjack	0030	*	Bonnethead	4760	*	Bluefish	0230
Wahoo	4720	*	Blue shark	4931	*	Cobia	0570
			Dusky shark	4841	*	Cod	0815
			Great Hammerhead shark	4951	*	Crevalle	0870
Blue marlin	2171	*	Longfin mako shark	3581	*	Atlantic croaker	0900
Longbill spearfish	4010	*	Porbeagle shark	4811	*	Summer flounder	1219
Roundscale spearfish	4009	*	Sand tiger shark	3491	*	Grouper	1410
Sailfish	3026	*	Sandbar shark	4821	*	Haddock	1479
Swordfish	4328	*	Scalloped Hammerhead shark	4781	*	King mackerel	1940
White marlin	2161	*	Shortfin mako shark	3551	*	Pollock	2695
			Smooth Hammerhead shark	4791	*	Red porgy	3300
Bluefin tuna young school	4673	*	Spinner shark	4881	*	Black sea bass	3350
Bluefin tuna school	4677	*	Thresher shark	3531	*	Sea robin	3410
Bluefin tuna large school	4678	*	Tiger shark	4911	*	Dogfish (general)	3501
Bluefin tuna small med.	4676	*	White shark	4801	*	Smooth dogfish	3511
Bluefin tuna large med.	4679	*	**Only valid when respondent will not respond to probing for species or BFT size category and the fish is unavailable for identification by Interviewer**		#	Spiny dogfish	3521
Bluefin tuna giant	4671	*			#	Spanish mackerel	3840
			Marlin (general)	2181	#	Striped bass	4180
			Tuna (any)	4656	#	Blueline tilefish	4440
Bigeye tuna	4691	*	Shark (any)	3591	#	Sand tilefish	4450
Albacore	4701	*	Other large pelagic species	5250	#	Golden tilefish	4467
Yellowfin tuna	4711	*	Mako shark (any)	3571	#	Tilefish (general)	4470
Skipjack	4661	*	Hammerhead shark (any)	4950	#	Ocean triggerfish	4560
Atlantic bonito	0330	*	Bluefin tuna (any)	4670	#	Blue runner	2130
Blackfin tuna	4641	*	Bluefin tuna school/large school (27" to < 59")	4672	#		
Little tunny	4681	*	Any large pelagic species	7777	#		
						All species combined*	8888*

* All species combined (8888) should only be used for target species when respondent does not respond to probing for species. Note that "all species combined" is not considered a large pelagic species code.

Appendix G: Tournament Code List

State	Code	Tournament Name	City
CONNECTICUT	1410	NIANTIC SHARK WEEK	NIANTIC
DELAWARE	3870	INDIAN RIVER MARINA TUNA BLAST	REHOBOTH BEACH
DELAWARE	3860	KIDS CATCH ALL TOURNAMENT	REHOBOTH BEACH
MAINE	1010	BAILEY ISLAND FISHING TOURNAMENT	BAILEY ISLAND
MAINE	1021	CASCO BAY BLUEFIN BONANZA	SOUTH PORTLAND
MAINE	1035	SPRING POINT SHOOTOUT	SOUTH PORTLAND
MARYLAND	5075	BIG FISH CLASSIC	OCEAN CITY
MARYLAND	5100	BISHOP BROADBILL BASH	OCEAN CITY
MARYLAND	6300	CANYON KICK-OFF	OCEAN CITY
MARYLAND	5520	CAPT. STEVE'S POOR GIRLS OPEN	OCEAN CITY
MARYLAND	4701	CBSFA O.C. TUNA-FORTUNA TOURNEY	OCEAN CITY
MARYLAND	5600	CHALLENGE CUP	OCEAN CITY
MARYLAND	5060	FISH N' PADDLE SALTWATER SLAM	OCEAN CITY
MARYLAND	6450	KIDS CLASSIC	OCEAN CITY
MARYLAND	5510	MAKO MANIA	OCEAN CITY
MARYLAND	5730	MEMORIAL DAY TOURNAMENT	OCEAN CITY
MARYLAND	5500	OCEAN CITY LABOR DAY WHITE MARLIN OPEN	OCEAN CITY
MARYLAND	5710	OCEAN CITY MARLIN CLUB LADIES	OCEAN CITY
MARYLAND	5550	OCEAN CITY TUNA TOURNAMENT	OCEAN CITY
MARYLAND	5740	OCMC VS OCLTC SHOOT-OUT	OCEAN CITY
MARYLAND	5300	REBEL'S RELEASE (September)	OCEAN CITY
MARYLAND	5061	REBEL'S RELEASE (August)	OCEAN CITY
MARYLAND	6100	SMALL BOAT TOURNAMENT	OCEAN CITY
MARYLAND	3003	TUNA AND TIARAS	OCEAN CITY
MARYLAND	5200	WHITE MARLIN OPEN	OCEAN CITY
MASSACHUSETTS	1220	BIG GAME BATTLE	NANTUCKET
MASSACHUSETTS	1235	BLUEFIN BLOWOUT	GLOUCESTER
MASSACHUSETTS	1261	BOSTON BLUEFIN & STRIPER CLASSIC	QUINCY
MASSACHUSETTS	1900	GREEN HARBOR TUNA CLUB GIANT TOURNAMENT	GREEN HARBOR
MASSACHUSETTS	1252	HYANNIS MARINA DOCK TUNA TOURNAMENT	HYANNIS
MASSACHUSETTS	1230	NANTUCKET BLUEFIN BLAST	NANTUCKET
MASSACHUSETTS	1540	NEWBURYPORT SHARK AND TUNA TOURNAMENT	NEWBURYPORT
MASSACHUSETTS	1210	NORTH ATLANTIC MONSTER SHARK TOURNAMENT	FAIRHAVEN
MASSACHUSETTS	1310	NORTHEAST OFFSHORE CUP	EDGARTOWN

State	Code	Tournament Name	City
MASSACHUSETTS	1660	OAK BLUFFS BLUEWATER CLASSIC	OAK BLUFFS
MASSACHUSETTS	1251	OCTUNAFEST	HYANNIS
MASSACHUSETTS	1501	SOUTHSHORE CUTTYHUNK INVITATIONAL	CUTTYHUNK
MASSACHUSETTS	1270	THOMAS A MCDONOUGH TOURNAMENT	SCITUATE
NEW JERSEY	3210	1ST OFFSHORE TOURNAMENT - WAR AT THE SHORE	BEACH HAVEN
NEW JERSEY	3700	BEACH HAVEN WHITE MARLIN INVITATIONAL	BEACH HAVEN
NEW JERSEY	3220	BHMTC MAKO AND TUNA TOURNAMENT	BEACH HAVEN
NEW JERSEY	3757	BILLFISH TOURNAMENT	OCEAN CITY
NEW JERSEY	3310	BLUEFIN TOURNAMENT	BRIELLE
NEW JERSEY	3320	BRETT T BAILEY MAKO RODEO	BRIELLE
NEW JERSEY	3312	CLUB BLUEFIN TOURNAMENT	BRIELLE
NEW JERSEY	3751	INSHORE OFFSHORE TEAM TOURNAMENT	OCEAN CITY
NEW JERSEY	3360	JACK MEYER MEMORIAL	BRIELLE
NEW JERSEY	3753	LABOR DAY JAMBOREE	OCEAN CITY
NEW JERSEY	3390	MAKO FEVER	POINT PLEASANT
NEW JERSEY	3380	MAKO MANIA	POINT PLEASANT
NEW JERSEY	3754	MARLIN AND TUNA CHALLENGE	OCEAN CITY
NEW JERSEY	3311	MRMTC BLUEFIN OPEN	BRIELLE
NEW JERSEY	3313	MRMTC SEASON LONG TUNA AND MAKO TOURNAMENT	MANASQUAN
NEW JERSEY	3750	OCEAN CITY OVERNIGHT BILLFISH	OCEAN CITY
NEW JERSEY	3752	OCMTC SHARK & BLUEFIN TOURNAMENT	OCEAN CITY
NEW JERSEY	3350	OFFSHORE OPEN	BRIELLE
NEW JERSEY	3230	OFFSHORE OVERNIGHT TOURNAMENT	BEACH HAVEN
NEW JERSEY	3755	OFFSHORE TOURNAMENT	OCEAN CITY
NEW JERSEY	3375	SHARK CHALLENGE	LEONARDO
NEW JERSEY	3371	SHARK HUNTER TOURNAMENT	WARETOWN
NEW JERSEY	4400	SJYS OFFSHORE SHOWDOWN	CAPE MAY
NEW JERSEY	4000	SOUTH JERSEY SHARK TOURNAMENT	CAPE MAY
NEW JERSEY	3361	SWORDFISH BLAST	POINT PLEASANT
NEW JERSEY	4700	THE MIDATLANTIC	CAPE MAY
NEW JERSEY	3002	THE MIDATLANTIC CUP	CAPE MAY
NEW JERSEY	3001	THE MIDATLANTIC TUNA TOURNAMENT	CAPE MAY
NEW JERSEY	3389	TUNA FEVER	POINT PLEASANT
NEW JERSEY	3381	TUNA MANIA	POINT PLEASANT
NEW JERSEY	3325	WAR AT THE SHORE	BRIELLE
NEW JERSEY	3610	YACHT CLUB OF STONE HARBOR INVITATIONAL MARLIN	CAPE MAY
NEW YORK	2210	BAY SHORE MAKO TOURNAMENT	BAY SHORE
NEW YORK	2280	FREEPORT HUDSON ANGLERS SHARK TOURNAMENT	FREEPORT

State	Code	Tournament Name	City
NEW YORK	2550	GREAT GUN ANGLERS SHARK TOURNAMENT	MORICHES INLET
NEW YORK	2350	HAMPTONS OFFSHORE INVITATIONAL	HAMPTON BAYS
NEW YORK	2650	MONTAUK CANYON CHALLENGE	MONTAUK
NEW YORK	2660	MONTAUK MARINE BASIN SHARK TAG TOURNAMENT	MONTAUK
NEW YORK	2560	MORICHES ANGLERS SHARK TOURNAMENT	CENTER MORICHES
NEW YORK	2260	POINT LOOKOUT SHARK TOURNAMENT	POINT LOOKOUT
NEW YORK	2261	SCOTTY'S CHARITY SHARK TOURNAMENT	POINT LOOKOUT
NEW YORK	2690	STAR ISLAND MAKO THRESHER TUNA TOURNAMENT	MONTAUK
NEW YORK	2680	STAR ISLAND SHARK TOURNAMENT	MONTAUK
RHODE ISLAND	1120	BLOCK ISLAND GIANT SHARK TOURNAMENT	NEW SHOREHAM
RHODE ISLAND	1160	SNUG HARBOR SHARK TOURNAMENT	WAKEFIELD
RHODE ISLAND	1110	TRI STATE CANYON SHOOTOUT	BLOCK ISLAND
VIRGINIA	9051	OCEANS EAST SWORDFISH TOURNAMENT	VIRGINIA BEACH
VIRGINIA	9250	VIRGINIA BEACH BILLFISH TOURNAMENT	VIRGINIA BEACH
VIRGINIA	9550	VIRGINIA BEACH INVITATIONAL MARLIN TOURNAMENT	VIRGINIA BEACH
VIRGINIA	9210	VIRGINIA BEACH TUNA TOURNAMENT	VIRGINIA BEACH
VIRGINIA	9140	WINE, WOMEN & FISHING	VIRGINIA BEACH