



VIRGINIA SALTWATER RECREATIONAL FISHING DEVELOPMENT FUND

SUMMARY PROJECT APPLICATION

Please complete all fields. This page should be used as a coversheet for a detailed application.

NAME AND ADDRESS OF APPLICANT:

Virginia Marine Resources Commission
2600 Washington Avenue
Newport News, VA 23607

PROJECT LEADER (name, phone, email):

Adam Kenyon
(757) 247-8068
Adam.Kenyon@mrc.virginia.gov

DESCRIPTIVE TITLE OF EVENT:

Virginia Marine Sportfish Collection Project
Year 11

PROJECT LOCATION:

Various locations throughout coastal Virginia

BRIEF PROJECT SUMMARY: (include a detailed description of activity as an attachment)

To collect biological samples, for the purpose of obtaining harvest data per length, age, and sex, for recreationally important species in Virginia including: cobia, red drum, black drum, sheepshead, Spanish mackerel, speckled trout, blueline tilefish, golden tilefish, snowy grouper, wreckfish, bluefish (greater than 16 pounds or 32 inches), and spadefish (greater than 22 inches).

EXPECTED BENEFITS: (Describe how your project directly benefits the average Virginia recreational angler)

Fisheries scientists conduct stock assessments to determine the health of a fishery and establish recommendations for future harvest levels. At the foundation of these stock assessments are accurate data on catch and effort and descriptive data on population demographics. Accurate and precise age, sex, and length composition data allow fisheries scientists to choose from a suite of assessment models to predict appropriate harvests.

In the past, the majority of all biological samples came from the commercial fishing industry, with very few samples from the recreational fishing community. However, not every species of recreational interest is readily available for sampling from commercial harvesters, either due to low quantities or high prices. Since 2007, recreational anglers have assisted VMRC in collecting samples of species of interest through the Marine Sportfish Collection Project.

This project benefits recreational anglers because it allows the recreational fishing public to directly increase the number of biological samples of recreationally important species. More samples allow fishery managers better estimates of stock health, improved age-length keys, and sex composition data. This information is vital to developing accurate assessments that will aid in assessing management changes such as harvest sizes, seasons, and bag limits.

*This form alone does not constitute a complete application, see application instructions or contact Alicia Nelson at 757-247-8155 or alicia.nelson@mrc.virginia.gov

SUMMARY COSTS: (Please attach a detailed budget including all sources of recipient funding)

SUMMARY COSTS

Requested VMRC Funding:

\$12,000.00
\$ 0.00
\$12,000.00

Recipient Funding:

Total Costs:

Request for renewal of funding of the Virginia Marine Sportfish Collection Project (Year 11)

OBJECTIVE:

To increase the number of length, sex, and age samples collected for the following recreationally important species. This list is dynamic and can change as sampling needs are identified, or sampling goals met, during the year.

Current 2017 Listing

<i>Cobia</i>	<i>Black Drum</i>
<i>Sheepshead</i>	<i>Tautog</i>
<i>Spanish Mackerel</i>	<i>Blueline Tilefish</i>
<i>Speckled Trout</i>	<i>Golden Tilefish</i>
<i>Spadefish (greater than 12 inches)</i>	<i>Warsaw Grouper</i>
<i>Bluefish (greater than 36 inches)</i>	<i>Snowy Grouper</i>
<i>Red Drum</i>	<i>Wreckfish</i>

ESTIMATED BENEFITS:

This project benefits recreational anglers because it allows the recreational fishing public to directly increase the number of biological samples of recreationally important species. More samples allow fishery managers better estimates of population dynamics, improved age-length keys, and sex composition data. This information is vital to developing accurate assessments that will aid in assessing management changes such as harvest sizes, seasons, and bag limits.

Fisheries scientists conduct stock assessments to determine the health of a fishery and establish recommendations for future harvest levels. At the foundation of these stock assessments are accurate data on catch and effort and descriptive data on population demographics. Accurate and precise age, sex, and length composition data, in concert with age-specific vital rates such as fecundity and selectivity, allow fisheries scientists to choose from a suite of assessment models to predict appropriate harvests.

Since 1998 the Virginia Marine Resources Commission's Biological Sampling Program has been collecting length, weight, sex, and age information from thirteen species that are recreationally and commercially important to Virginia. From 1998 through 2006, the majority of all biological samples collected by the program came from the commercial fishing industry, with very few samples from the recreational fishing community. However, not every species targeted by the program is readily available for sampling from commercial harvesters, either due to low quantities or high prices. Since 2007, recreational anglers have assisted VMRC in collecting samples of species of interest through the Marine Sportfish Collection Project.

The information collected through this program is also beneficial to fisheries managers. For example, in 2009, biological data collected through the Marine Sportfish Collection Project was a key component in promoting Virginia's need for separate management opportunities for the

tilefish and grouper fisheries offshore. In 2012, Virginia's biological data on cobia, to include all samples collected through the collection project, were recognized as one of the best sources of data available for 2012 coastwide stock assessment of the resource.

APPROACH:

Beginning in June 2007, VMRC began the Marine Sportfish Collection Project (MSCP) through funding received from the Recreational Fishing Advisory Board. This project places freezers at various high traffic weigh stations, where recreational anglers can voluntarily leave legal size whole fish or carcasses. Each freezer is marked with an identifying sign and a list of target species. A supply of durable plastic bags, information cards, and pencils is provided in each freezer. Cooperating fishermen are able to put a freshly filleted carcass of the fish, with head and tail intact in a plastic bag, along with the completed information card, and place the bag in the freezer. Bags are collected by VMRC staff and processed for biological information. An incentive program for anglers is included in the project. Once a month, fishermen participating in the program will earn a promotional shirt or hat (angler's choice).

Additional samples are obtained directly from select regional fishing tournaments which VMRC staff provides technical support.



Over 9,000 angler donations had been received since the project's inception in June, 2007. Data tables are generated by VMRC's Biological Sampling Program as data becomes available; it is posted on the VMRC website (http://mrc.virginia.gov/rec_assessment/index.shtm).

FREEZER LOCATIONS:

The Marine Sportfish Collection Project initially began on June 2007, with collection freezers set-up in cooperation with three bait and tackle shops: Wallace's Bait and Tackle (Hampton), Long Bay Pointe Marina (Virginia Beach) and Chris' Bait and Tackle (Capeville). These three locations were ideal for the initial start-up of this project, as they were locations that had high angler traffic; and an onsite cleaning station and weight station. Throughout the years the project has had the ability to add and move freezer locations based on sampling needs and available areas. Currently the project has 7 established donation freezers at the following locations:

*Chris' Bait and Tackle (Capeville)
Wallace's Bait and Tackle (Hampton)
Port Messick Marina (Poquoson)
Little Creek Marina (Norfolk)
Long Bay Pointe Marina (Virginia Beach)
Virginia Beach Fishing Center (Virginia Beach)
Rudee Inlet Station Marina (Virginia Beach)*

Staff continues to look for an additional viable freezer collection sites based on sampling needs.

DETAILED BUDGET:

Collections from recreational fishery, with promotional incentives, is planned to continue each year. The annual budget will be adjusted each year to represent projected funding needs. The project last requested funding in 2015 (Year 9). This project has been able to flourish with limited funding throughout the years due to the project's ability to keep costs low, by keeping up with annual freezer maintenance to extend their longevity.

Estimated Cost (Year 11):

Item	Total Cost
Project supplies <i>(bags, information sheets, pencils, cleaning materials)</i>	\$500.00
Promotional items (hats, shirts, signs)	\$5,700.00
Promotional item mailings <i>(envelopes and postage)</i>	\$4,000.00
Sample processing and transport equipment <i>(replacement saws and blades, coolers)</i>	\$300.00
Freezer replacement	1,500.00
Total	\$12,000.00

2016 Marine Sportfish Collection Project Update



Virginia Marine Resources Commission
Plans and Statistics Department
2600 Washington Avenue, 3rd Floor
Newport News, VA 23607

Prepared By

Adam B. Kenyon
Biological Sampling Program Manager
Fisheries Management Division

April 1, 2017

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ACKNOWLEDGEMENTS

The Marine Sportfish Collection Project would like to thank all marinas, recreational anglers, and other individuals in the seafood industry who have helped to build this program. Their continual cooperation and support have allowed this program and staff to meet their sampling goals by collecting representative recreational fisheries data on fish caught in Virginia.

The program would like to thank the Recreational Fishing Advisory Board. Their support and interest in this project has been essential to its continued success since 2007.

The program would like to thank the technical staff, including Myra Thompson, Richard Hancock, and Chris Williams, for their expertise in the field as well as their never ending efforts in sampling finfish. Their efforts have resulted in representative data of the recreational fisheries in Virginia and without their dedication and character this program would not be as successful as it is. The program would also like to thank the rest of the Virginia Marine Fisheries staff including Information and Technology, and Plans and Statistics departments for their support. The continued success of the program has also benefited from the guidance and advice of past supervisors of the program.

The staff at Old Dominion University Age and Growth Laboratory have served a vital role in the collection and processing of finfish samples. Their partnership with the agency and dedication to the program has been an asset to the division through the years on this cooperative project.

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**THE VIRGINIA
MARINE RESOURCES COMMISSION**
***WANTS YOUR FISH....
TO MEASURE AND AGE.***



*You catch it, you fillet it,
but instead of throwing the remains in the trash,
please donate them to science.*

The Marine Sportfish Collection Project will focus on species of fish that are difficult to collect through the agency's normal sampling program. Anglers are asked to donate their filleted carcasses (head and tail intact) of legal and fresh-caught:

<u>BLUEFISH</u> (GREATER THAN 36 INCHES) 	<u>TAUTOG</u> 	<u>COBIA</u> 	<u>RED DRUM</u> 
<u>SHEEPSHEAD</u> 	<u>SPADEFISH</u> (GREATER THAN 12 INCHES) 	<u>SPANISH MACKEREL</u> 	<u>SPECKLED TROUT</u> (SPOTTED SEATROUT) 
<u>BLACK DRUM</u> 	<u>TILEFISH</u> (BLUELINE OR GOLDEN) 	<u>WRECKFISH, SNOWY GROPER,</u> <u>WARSAW GROPER</u> 	

In return for participating in the project, the agency will provide
ONE FREE PROJECT TEE SHIRT, OR HAT FOR EACH PARTICIPANT,
PER MONTH of the DONATION.



Please visit these merchants to participate:

- Chris' Bait and Tackle (Capeville)
- Wallace's Bait and Tackle (Hampton)
- Port Messick Marina (Poquoson)
- Little Creek Marina (Norfolk)
- Long Bay Pointe Marina (Virginia Beach)
- Virginia Beach Fishing Center (Virginia Beach)
- Rudee Inlet Station Marina (Virginia Beach)



INTRODUCTION

The Virginia Marine Resources Commission (VMRC) initiated a Biological Sampling Program (BSP) in 1989 to collect long-term biological data (lengths, weights, sexes, and age composition) to characterize the harvest of commercially important species in the Coastal and Chesapeake Bay areas of Virginia. Sampled species were chosen if there was a current or upcoming management plan, either interstate or federal, or if the species was managed by regulation. Species were ranked, by commercial landings in Virginia, and the ranking was used as a second criterion for sampling. Atlantic striped bass, bluefish, cobia, Atlantic croaker, black drum, red drum, summer flounder (harvested in Virginia), speckled trout, weakfish, and spot have been sampled (not including ageing collections) since the program's inception.

The Virginia Marine Sportfish Collection Project (MSCP) began in June 2007, through the Virginia Saltwater Development Fund as approved by the Virginia Recreational Fishing Advisory Board (RFAB). This project targets recreationally important species in the Coastal and Chesapeake Bay areas of Virginia that are not available for sampling from commercial harvesters, either due to low quantities or high prices. The project places freezers at various high traffic weigh-stations and marinas, where recreational anglers can voluntarily donate legal size whole fish or carcasses.

Since 1998 the VMRC has been in a cooperative agreement with Old Dominion University Center for Quantitative Fisheries Ecology Laboratory (CQFE). All ageing of finfish collected by the program are processed by the CQFE. This ageing agreement is made possible by a grant from the US Fish & Wildlife Service's Wallop Breaux fund. All data in this report was compiled on November 12, 2015.

METHODS

Recreational Sampling

The Marine Sportfish Sampling Program was designed to target recreationally important species in the Coastal and Chesapeake Bay areas of Virginia that are not readily available for sampling from commercial harvesters. The project places freezers at various high traffic weigh-stations and marinas, where recreational anglers can voluntarily donate legal size whole fish or carcasses. Anglers are provided with pre-made packets in which they are required to report the date and water body of capture as well as a weight of the fish prior to filleting if available. Anglers who complete the provided form with the required information receive a t-shirt or reward for donating the fish. The frequencies at which samples are collected from these freezers coincide with seasonal fishing changes and freezer space demands. In 2015 the advertised species that were target by the MSCP included black drum, bluefish (greater than 36 inches), cobia, red drum, spadefish (greater than 12 inches), Spanish mackerel, tautog, blueline tilefish, golden tilefish, wreckfish, snowy grouper, and Warsaw grouper (Attachment I).

Length data are recorded on Big Fin Scientific Tarpon fish measuring boards. Weights of individual fish or crabs are recorded on Doran 8000XL digital scales and downloaded directly to Xplor Tablets using the Data Collection Station Application developed by Big Fin Scientific. A fish identification number unique to each specimen is created, as well as a batch number for a subsample of a particular species from a specific trip. This tiered system allows for analysis of the sampling data on a trip level or for an individual fish or crab.

Subsamples of a catch or batch are processed for sex information (gender and gonadal maturity or spawning condition index for finfish). Such subsamples are indexed by visual inspection (macroscopic) of the gonads. Females are indexed as gonadal stage I-V and males I-IV, with stage I representing an immature or resting stage of gonadal development and, stages IV (males) and V (females) representing spent fish. Fish that cannot be accurately categorized, in terms of spawning condition, are not assigned a gonadal maturity stage.

Age Sampling

The CQFE processes and ages hard parts collected by the BSP. The CQFE also assists in the processing of fish, from both the recreational and commercial sectors. Currently the program collects otoliths from black drum *Pogonias cromis*, red drum *Sciaenops ocellatus*, tautog *Tautoga onitis*, weakfish *Cynoscion regalis*, speckled trout *Cynoscion nebulosus*, sheepshead *Archosargus probatocephalus*, spadefish *Chaetodipterus faber*, bluefish *Pomatomus saltatrix*, summer flounder *Paralichthys dentatus*, striped bass *Morone saxatilis*, Atlantic croaker *Micropogonias undulatus*, spot *Leiostomus xanthurus*, cobia *Rachycentron canadum*, and Spanish mackerel *Scomberomorus maculatus*. In addition to otoliths, scales are collected from both striped bass and summer flounder. There are three reasons scales are collected: 1) scales are collected from each fish that otoliths are collected to allow CQFE to corroborate the determined ages, 2) scale ages are used in the assessments of both species, and 3) it is more cost efficient to collect scales from a sampled fish, since the collection of scales does not require the fish to be purchased, as such, there can be a good deal more age samples collected. Scales are collected from the area just below the end of the first and beginning of the second dorsal on striped bass, and from the upper part of the caudal peduncle on summer flounder. Paired sampling also takes place for tautog, where otoliths and opercula are taken. The CQFE produces an annual report for all samples that are processed (See “Final report for 2015 Virginia- Chesapeake Bay Finfish Ageing”). This report includes the methodology used to process ageing structures for each species as well as annual age length keys on all species collected. It is important to note that samples collected for ageing do not fall into a random sampling regime, and are treated accordingly (i.e. are not included in analysis dependent on random sampling).

RESULTS

Recreational Sampling

In 2016 12 different species were sampled from the recreational harvest received as donations through the MSCP (Table 1). A total of 833 fish were sampled for length characteristics in 2016, including 115 weights, and 833 ageing structures collected. These samples were collected from seven different donation sites that were established throughout the Chesapeake Bay area (Table 2) (Appendix I).

Figures 1 through 4 show average length at age of the most frequently donated fish. More information on individual species is uploaded to the agency website at: http://mrc.virginia.gov/rec_assessment/index.shtm and it updated annually as ages of fish become available after processing.

DISCUSSION

Information collected by this project has been vital in characterizing harvest of recreationally important species up and down the east coast. Without continued support and interest from the recreational community this information would not be able to be collected in such an effective and efficient manner.

Information collected by this project has been used in all recent coastal stock assessments including black drum, red drum, tautog, cobia, and tilefish.

The Old Dominion University CQFE has recently published an online fish age estimator using information collected through this program. This online age estimator uses real data collected from donated fish for the “average recreational angler” to determine how old that fish may be. This tool can be located at: <https://cqfe-fish-age-estimator.shinyapps.io/cqfefishageestimator> (Attachment II).

Table 1. Number of species collected by year by the Marine Sportfish Collection Project from 2007 through 2016.

Species	Year										Total
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
Bluefish	.	10	.	4	17	2	5	3	4	2	47
Cobia	27	41	112	112	90	77	198	296	350	257	1,560
Drum, Black	2	226	67	63	33	16	17	115	62	88	689
Drum, Red	32	20	73	34	.	4	79	41	.	2	285
Flounder, Summer	.	1	13	10	24	27	5	1	12	1	94
Grouper, Snowy	.	.	.	4	7	8	3	7	.	.	29
Groupers	8	7	4	.	.	.	.	.	.	.	19
Mackerel, Spanish	.	4	44	37	10	18	54	12	65	29	273
Seatrout, Spotted	.	8	49	61	53	62	46	62	6	49	396
Sheepshead	18	42	33	49	31	29	54	97	112	123	588
Spadefish	130	252	17	35	34	12	11	28	71	67	657
Tautog	71	115	155	152	334	105	166	203	203	149	1,653
Tilefish, Blueline	47	64	91	257	570	1,118	112	87	79	63	2,488
Tilefish, Golden	2	2	2	20	14	64	30	36	18	3	191
Wreckfish	6	8	.	3	30	152	12	3	3	.	217
Annual Total	343	800	660	841	1,247	1,694	792	991	985	833	9,186

Table 2. Number of species collected by the Marine Sportfish Collection Project in 2016 by site.

Species	Chris B/T	Little Creek Marina	Long Bay Point B/T	ODU	Port Messick Marina	Rudee Inlet St Marina	Va. Beach Fishing Ctr	VMRC	Wallaces B/T	Total
Bluefish	2	.	.	.	.	.	.	.	.	2
Cobia	86	7	.	1	123	1	.	.	39	257
Drum, Black	85	.	.	.	2	.	.	1	.	88
Drum, Red	1	.	.	.	.	1	.	.	.	2
Flounder, Summer	1	.	.	.	.	.	.	.	.	1
Mackerel, Spanish	3	2	.	19	5	.	.	.	.	29
Sheepshead	31	8	.	.	.	.	.	.	10	49
Spadefish	8	43	2	.	13	.	.	.	57	123
Tautog	31	7	.	4	10	.	.	.	15	67
Tilefish, Blueline	.	70	22	.	23	11	2	3	18	141
Tilefish, Golden	.	.	14	.	.	27	.	.	22	71
Wreckfish	.	.	2	.	.	.	.	.	1	3
Annual Total	248	137	40	24	176	40	2	4	162	833

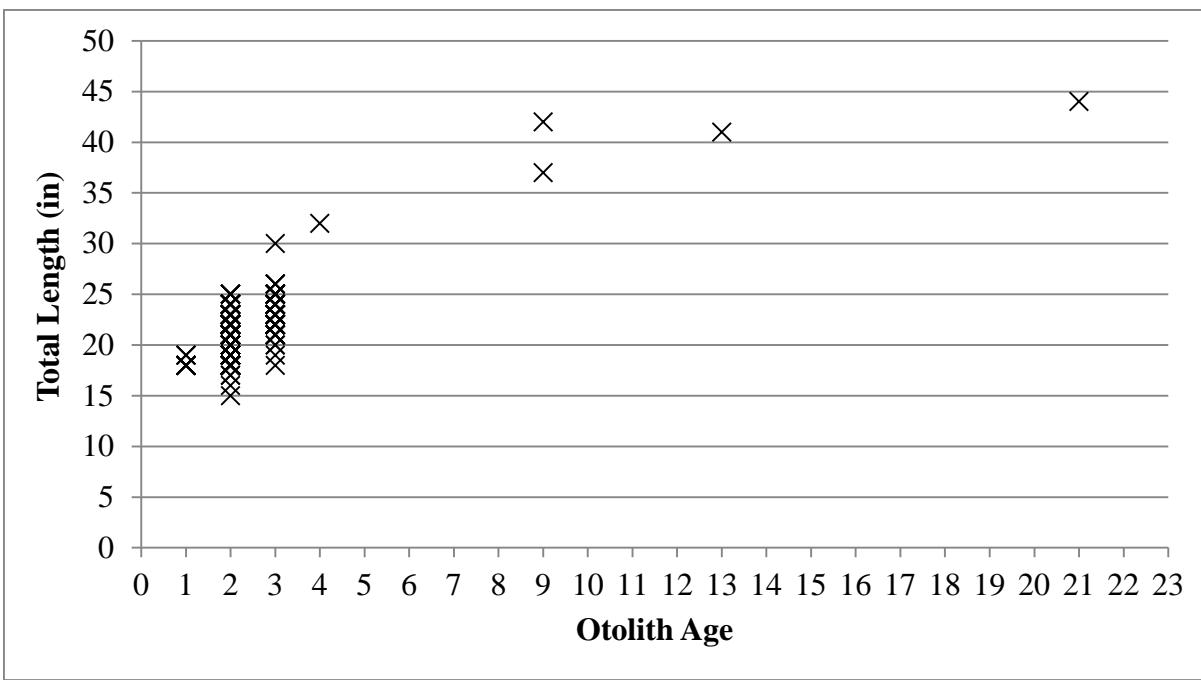


Figure 1. Red drum total length frequency at age as collected by the Marine Sportfish Collection Project 2007 through 2016.

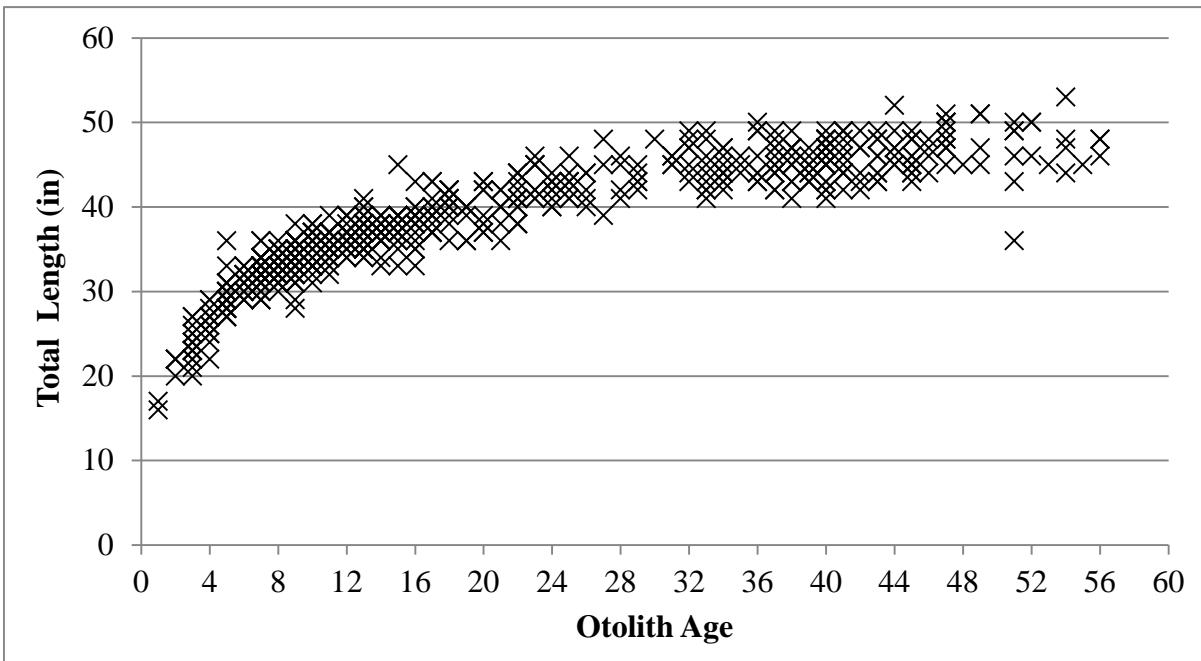


Figure 2. Black drum total length frequency at age as collected by the Marine Sportfish Collection Project 2007 through 2016.



Figure 3. Cobia total length frequency at age as collected by the Marine Sportfish Collection Project 2007 through 2016.

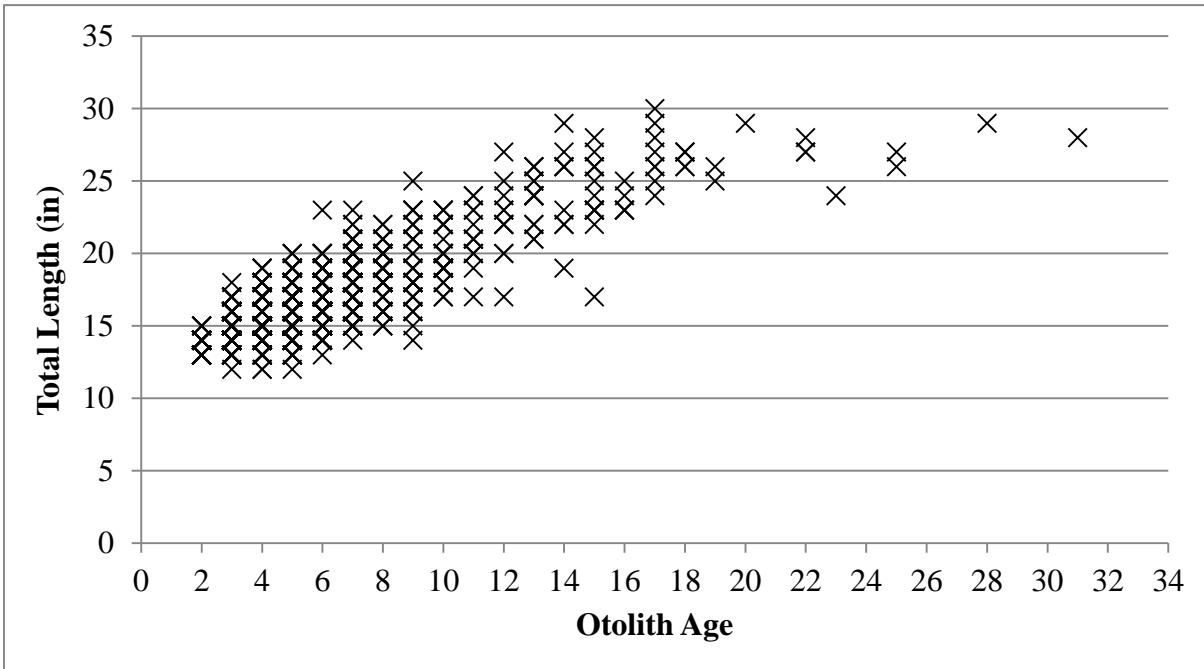


Figure 4. Tautog total length frequency at age as collected by the Marine Sportfish Collection Project 2007 through 2016.

APPENDIX I.

Appendix I. Marine Sportfish Collection Project advertisement poster used for 2016.



THE VIRGINIA MARINE RESOURCES COMMISSION *WANTS YOUR FISH.... TO MEASURE AND AGE.*



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<u>BLUEFISH</u> (GREATER THAN 36 INCHES)	<u>TAUTOG</u>	<u>COBIA</u>	<u>RED DRUM</u>
			
<u>SHEEPSHEAD</u>	<u>SPADEFISH</u> (GREATER THAN 12 INCHES)	<u>SPANISH MACKEREL</u>	<u>SPECKLED TROUT</u> (SPOTTED SEATROUT)
			
<u>BLACK DRUM</u>	<u>TILEFISH</u> (BLUELINE OR GOLDEN)	<u>WRECKFISH, SNOWY GROPER,</u> <u>WARSAW GROPER</u>	
			

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APPENDIX II.

Appendix II. ODU Center for Quantitative Fisheries Ecology online age estimator advertisement.

How old is your fish?

**To find out go to
www.odu.edu/cqfe**

Or

**Search “CQFE” at Google.com
Select the “Center for Quantitative
Fisheries Ecology” link
And click the “Fish Age Estimator”**

