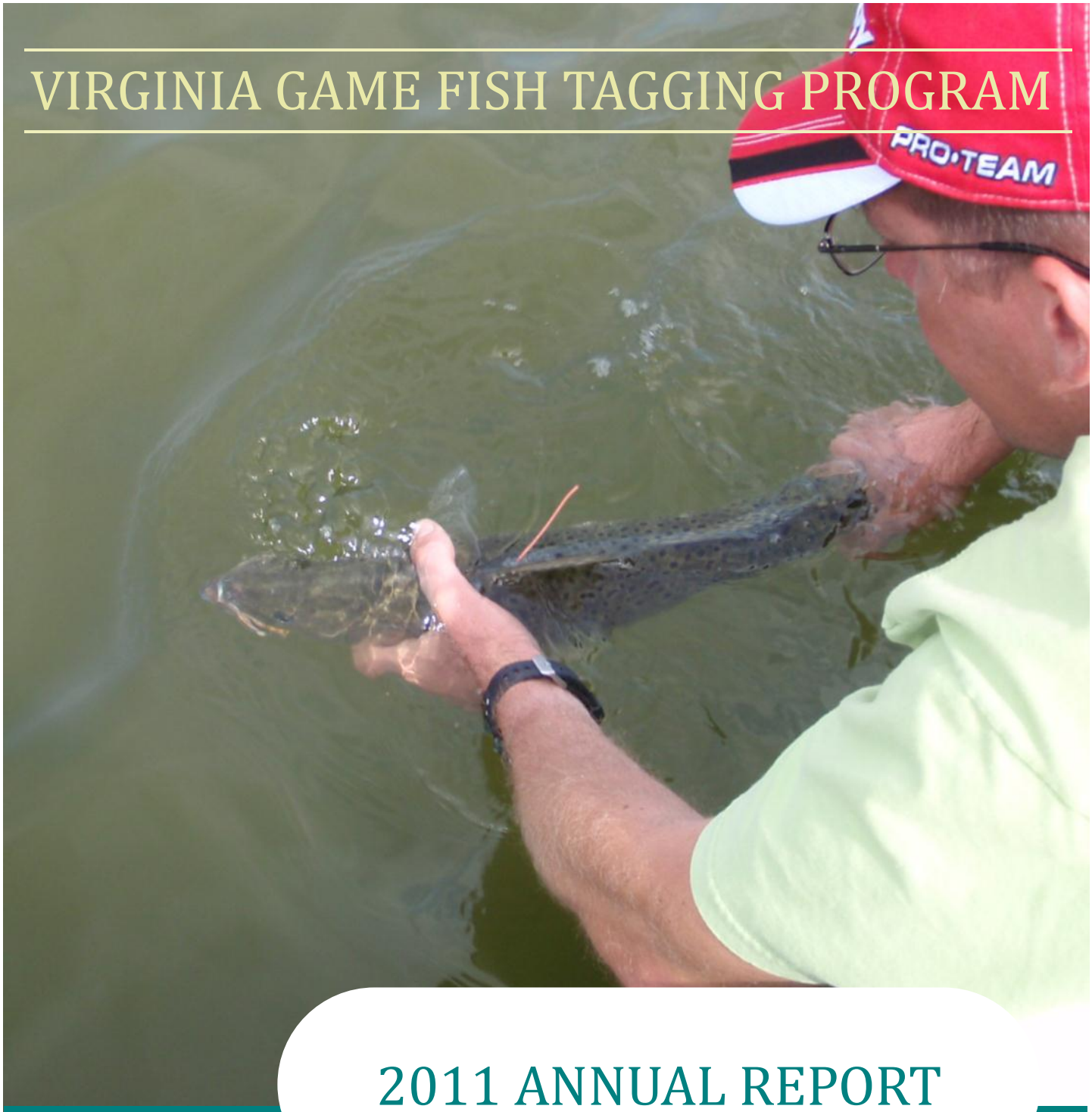
VIRGINIA GAME FISH TAGGING PROGRAM



2011 ANNUAL REPORT

Susanna Musick

Lewis Gillingham

VIMS Marine Resource Report No. 2012-3

VIRGINIA GAME FISH TAGGING PROGRAM

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VIRGINIA MARINE RESOURCES COMMISSION

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Virginia Game Fish Tagging Program

Annual Report

2011

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2011

The idea for the Virginia Game Fish Tagging Program (VGFTP) was that of Mr. Claude Bain, III, former director of the Virginia Saltwater Fishing Tournament (VSFT) under the Virginia Marine Resources Commission (VMRC). Mr. Bain approached Mr. Jon Lucy at the Virginia Institute of Marine Science (VIMS) during the late 1980's about developing a tagging project on red drum.

Bain and Lucy realized not only were critical habitat and seasonal movement data sparse for red drum in state waters, the same situation existed for a number of other marine recreational species , i.e., black drum, cobia, speckled trout, and tautog. Therefore, they decided to explore developing a multi-species, angler-assisted tagging program. As a result, the Game Fish Tagging Program started in 1995 primarily funded from Virginia saltwater fishing license funds and matching funds from VIMS.

Mr. Lewis Gillingham, is the current VSFT Director and manages the VMRC portion of the tagging program. Ann Burnett also of the VSFT, deserves special recognition for her exemplary work, data management and guidance, all of which keep the program on track. Also from the VMRC, Mr. Todd Sperling, has updated the program's database into a more efficient format. He maintains the database while fine-tuning it for changing data analyses and output needs.

Ms. Susanna Musick, Marine Recreation Specialist in the Marine Advisory Program at VIMS, is the P.I. for the tagging program. Also at VIMS, Ms. Dianne Roberts provides critical assistance to the tagging program assisting with tag orders, assignment and distribution of tags and preparation for workshops. Ms. Cheryl Teagle coordinates purchasing tags while helping manage the tagging program budget. VIMS Publications provides critical assistance in preparation of posters and annual reports. The VIMS Game Fish Tagging Program website is maintained by Ms. Lee Larkin and Ms. Lisa Lawrence. Ms. Silvia Motley in the Publications Center handles printing production of annual reports. Ms. Janet Krenn of Virginia Sea Grant also provides communication support for special events and publications.

The Game Fish Tagging Program is a team effort by many critical players, most importantly, the anglers who devote significant time and effort to tagging target fish and reporting fish recaptures.

2011 TOP TAGGERS

Some of the top taggers of 2011 : Front, left to right: Donnie Smith, Jim Robinson, Carl Stover; Back, left to right: Susanna Musick (VIMS), Wayne Rowe, Sheldon Arey, Ed Shepherd, Lewis Gillingham (VSFT). ©Will Sweatt/VASG

Cover photo credit: George Wojcik, tagged speckled trout.

table of contents

Introduction 9
Target Species: 2000-2011 10
Program Objectives 10
Database Improvements 11
Program Responsibilities 11
2011 Accomplishments – Tagging Effort and Recaptured Fish Results 12
Special Flounder Double Tagging Effort-Assisting VIMS Research Project 13
Addressing Challenges 13
Special Database Benefits to Researchers and Fishery Managers 2010-2011 13
Result Highlights by Species (2011) 14
- Black Drum 14
- Black Sea Bass 14
- Cobia 14
- Flounder 14
- Red Drum 15
- Sheepshead 15
- Spadefish 15
- Speckled Trout 15
- Tautog 16
- (Gray) Triggerfish 16
- Conclusion 16

Tables 1-7 18
Figures 1 - 30 28
Appendices A, B, C 49

list of tables

Table 1. Virginia Game Fish Tagging Program Annual Tagging Awards 2008-2011

Table 2. Virginia Game Fish Tagging Program Annual Tagging Awards 2011 (Winner & Runner-Up)

Table 3. Taggers Awarded Conservation Certificates for Tagging 25 or more Fish during 2011 (by total tag count)

Table 4. Taggers Having 5 or More Fish Recaptured during 2011 (by total recaptures)

Table 5. Tagged and Recaptured Fish by Species and Year (1995-2011)

Table 6. Total Number of Tags and Recapture Rates, 2011

Table 7. Total Number of Tagged and Recaptured Flounder (VIMS Study), 2011

list of figures

Figure 1a. Top Black Drum Tagging Sites
Figure 1b. Top Black Drum Recapture Sites
Figure 2. Tagged Black Drum Size Frequencies

Figure 3a. Top Black Sea Bass Tagging Sites
Figure 3b. Top Black Sea Bass Recapture Sites
Figure 4. Tagged Black Sea Bass Size Frequencies

Figure 5a. Top Cobia Tagging Sites
Figure 5b. Top Cobia Recapture Sites
Figure 6. Tagged Cobia Size Frequencies

Figure 7a. Top Flounder Tagging Sites
Figure 7b. Top Flounder Recapture Sites
Figure 8. Tagged Flounder Size Frequencies

Figure 9a. Top Red Drum Tagging Sites
Figure 9b. Top Red Drum Recapture Sites
Figure 10. Tagged Red Drum Size Frequencies

Figure 11. Top Sheepshead Tagging Sites
Figure 12. Tagged Sheepshead Size Frequencies

Figure 13. Top Spadefish Tagging Sites
Figure 14. Tagged Spadefish Size Frequencies

Figure 15a. Top Speckled Trout Tagging Sites
Figure 15b. Top Speckled Trout Recapture Sites
Figure 16. Tagged Speckled Trout Size Frequencies

list of figures, *continued*

Figure 17a. Top Tautog Tagging Sites
Figure 17b. Top Tautog Recapture Sites
Figure 18. Tagged Tautog Size Frequencies

Figure 19. Top Triggerfish Tagging Sites
Figure 20. Tagged Triggerfish Size Frequencies

VIRGINIA GAME FISH TAGGING PROGRAM 2011

Introduction

Through 2011, the Virginia Game Fish Tagging Program has maintained a 17-year database of records for tagged and recaptured fish. The program is a cooperative project of the Virginia Saltwater Fishing Tournament (under the Virginia Marine Resources Commission-VMRC) and the Virginia Institute of Marine Science (VIMS) of the College of William and Mary (under the VIMS Marine Advisory Program).

The primary goal of the program is to train and maintain an experienced group of anglers who are willing to volunteer their time and effort to properly tag and release their fish catch. Data on tagged and recaptured fish are summarized in annual reports and are accessible on VIMS website: http://www.vims.edu/vgftp/. Time series data are organized and provided whenever requested by anglers, angling groups, researchers, and fishery managers.

Program participants are trained to tag only designated target species in Virginia waters. Participation in the program is capped at two hundred trained taggers. Supporting this number of taggers has been manageable when meeting tag and tagging equipment needs, performing timely data entry, and mailing of tag-recapture reports (and reward items) to anglers reporting catches of tagged fish.

Funding for the program is applied for annually through a competitive proposal process under VMRC's Recreational Fishing Advisory Board. The program funding requires the Board's positive recommendation, which then goes before the VMRC Commissioners for final approval. If funding is approved, Virginia Saltwater Recreational Fishing License Funds (administered by VMRC) primarily cover budget needs, with additional matching funds contributed by VIMS.

A cooperative but separate funding proposal from that of the VSFT office is submitted annually to the VMRC by VIMS. The VIMS portion of the program focuses primarily on coordinating, maintaining and purchasing all tags and tagging equipment (tag guns, tag sticks, tagging needles, and constructing measuring boards). Also included in the VIMS budget are local travel costs and costs for presenting program results at scientific meetings. Several printed materials are also the responsibility of VIMS; these include tagging training handouts, waterproof tagging data sheets, and laminated posters alerting anglers to target species and the telephone number for reporting recaptured fish. The design, printing and publication of annual reports also falls to VIMS, including data analysis and the publication and maintenance of digital reports on the VIMS website.

The Virginia Saltwater Fishing Tournament office similarly submits a separate proposed budget. This budget predominantly covers expenses associated with purchasing reward items for recaptures and mailing such items (with printed Fish Recapture Reports) to people phoning in tagged fish recapture information. Reporters of tagged fish choose among various reward options including custom T-shirts, caps, sun visors, pewter fish pins, or plastic tackle organizers (as long as such items remain in stock).

Recapture awards encourage diverse members of the public (including commercial fishermen, seafood dealers, etc.) to call in reports of tagged fish they encounter. The reward system and recapture reports provide positive feedback to anglers and encourage them to continue to participate in the program and report future recaptures of tagged fish. Direct association of angler taggers with others in the angling community enhances program awareness, reminds anglers (and commercial fishers) of the importance of reporting tagged fish, and provides the angling community with positive fishery conservation role models. The program succeeds because of good teamwork across the angling community.

The tagging program documents annual and year-to-year movement and habitat utilization patterns of selected finfish species in Virginia waters. For certain species, the program documents significant coastal migrations. Many of these species spawn in the lower Bay or nearshore waters of Virginia and

use Virginia estuarine and coastal waters as nursery and feeding grounds.

The program's results are of interest to the angling community and to fishery researchers and managers. The number and size distribution of fishes tagged each year compliment other research-based data sets and can help fishery managers gain a more comprehensive picture of sizes of fish released in the state's marine recreational fishery.

Tagging effort for flounder, red and black drum, speckled trout, cobia, spadefish, triggerfish and sheepshead primarily occurs in Bay and nearshore coastal waters. However, tagging of tautog, black sea bass, spadefish and gray triggerfish occurs over much broader areas of the Bay and inshore-offshore waters. Tagging for structure-oriented species occurs on sites such as fishing piers, artificial reefs, the Chesapeake Bay Bridge Tunnel complex, shipwrecks and other bottom sites occurring from the lower Bay to sites offshore of Virginia.

Special tagging continues at warm water discharge sites through cooperation with Virginia Dominion Power. Past tagging results at the Yorktown Power Station (York River) and the Center for Energy Conservation Power Station (Elizabeth River) have helped to document these areas as important overwintering sites for various species, especially speckled trout and red drum.

TARGET SPECIES

2000-2011

Target species for 2011 appear below. Summer flounder replaced gray trout (weakfish) in 2000, the latest change to date.

Black Drum	*Pogonias cromis*
Black Sea Bass	*Centropristis striata*
Cobia	*Rachycentron canadum*
Summer Flounder	*Paralichthys dentatus*
Red Drum	*Sciaenops ocellatus*
Sheepshead	*Archosargus probatocephalus*
Spadefish	*Chaetodipterus faber*
Speckled Trout	*Cynoscion nebulosus*
Tautog	*Tautoga onitis*
(Gray) Triggerfish	*Balistes capriscus*

PROGRAM OBJECTIVES

Basic objectives guide program activities. There are five main objectives:

(1) Develop and maintain a quality tagging program using a corps of trained angler taggers; tagging effort of these anglers should be directed to target species, especially where one can take advantage of significant numbers of non-legal fishes which anglers are readily discarding alive while complying with recreational fishing regulations.

(2) Where and when appropriate, direct program tagging effort toward opportunistic occurrences of strong year classes of fishes in Virginia's Bay and nearshore-offshore waters, especially species not traditionally subject to scientific tagging studies in such waters, i.e., red drum, black drum, speckled trout, tautog, sheepshead, spadefish, etc. The program does not target species currently monitored and/or targeted in state waters by research-based tagging studies coordinated by fishery research agencies and institutions, in particular striped bass.

(3) Maintain a database of tagged and recaptured fish records accessible to the angling community, but also of use to fishery researchers and managers as the database matures. Make summaries and reports of such data available to the angling community through annual reports, websites, presentations to angling clubs, kids fishing clinics, etc. and provide requested data to researchers and fishery managers.

(4) Use the tagging program to enhance education of marine anglers about the importance of reporting tagged fishes to appropriate organizations, agencies, and research institutions to enhance understanding and management of key fishery stocks important to Virginia's marine recreational fisheries.

(5) Use program results to educate the angling community about fishery conservation and management benefits directly connected with proper handling and releasing of non-legal fishes. Tag-recapture data prove that using proper catch and release fishing practices results in better angling catches both short-term and long-term.

The program maintains a group of experienced, trained, angler-taggers who can capitalize on opportunities to tag key species that often exhibit high abundance levels during a given fishing season. These events contribute to rebuilding and sustaining specific fisheries in Virginia's one billion dollar recreational fishery and take on even greater value when this program documents sizes and abundance of recreationally-targeted fish and the habitats they utilize.

Database Improvements

As in previous years, Mr. Todd Sperling's (VMRC) skills are indispensable for managing the program's data files. Since 2009, data are quarantined whenever a recaptured fish species does not match that of the tagged fish (such records are linked by their specific fish tag number). This feature allows the review of such data inconsistencies, which may be the result of various issues, i.e., recaptured fish tag numbers being misread and thereby reported incorrectly, a recapture angler's recall mistake regarding the species of tagged fish they caught, etc. Such reporting irregularities seem to occur most frequently at fishing piers and other heavily fished shoreline locations (see Challenges section).

Other cases may include "negative days at large" for recaptured fish, i.e., when a tagged fish's reported recapture date is earlier than the reported recapture date. Also, if a recaptured fish's size is significantly different from what would be expected, this may suggest either the person reporting the recapture badly estimated the fish's length, or the recaptured fish's tag number was reported incorrectly, etc.; such issues can then be investigated and hopefully clarified. These recapture data issues more often occur on reports called into the office and left on voice mail outside of regular office hours.

Details of Program Responsibilities

In addition to handling the majority of data entry, the VA Saltwater Fishing Tournament office distributes tags, needles, etc. These items are regularly mailed to taggers and records are maintained regarding tag-number series assigned to the participants. This information is important for tracking down late tagged fish data reports for reported recaptures. Similarly, "Fish Recapture Reports" generated from the database are mailed to both the tagger and the angler reporting the recapture (along with the available reward item). This timely feedback loop is critical to the success of the tagging program.

Every tag clearly states that a "REWARD" is offered for reporting recaptures of tagged fishes. Appropriate reward items (program caps, sun visors, t-shirts, fish pins, etc.) are mailed to anglers (and commercial fishers and fish dealers reporting tags) by the VSFT office along with fish Recapture Reports. The most popular reward item is the t-shirt, which must be printed in limited numbers each year to stay within budget. Typically, late in the fishing year the t-shirt supply becomes exhausted. Then other reward items are substituted for it (most reporters of recaptured fish understand such issues).

The majority of data for both tagged and recaptured fishes are entered into the database at the VSFT office; the data go directly into the database maintained on a server at the VMRC. The VMRC database manager is proactive in contributing to the improvement of tagged and recaptured fish data and outputs. Current options include setting up various reports that provide "single-click" data summaries for review and tracking program results.

VIMS continues to serve as a remote site for entering tagged and recaptured fishes data for selected program participants. To relieve some of the workload from the VSFT office, VIMS (Dianne Roberts) enters all data for the program's most productive tagger, Mr. Ed Shepherd. From 2007-2011, Mr. Shepherd has tagged 2,000-4,000 fish annually (3,434 in 2011, Table 1) which resulted in 550-900+ recapture reports each year. Ms. Roberts also pro-

vides critical feedback to the program regarding data organization, tagging inventory, workshop materials and dissemination preparation.

At VIMS, tagged fish and recapture data records are also checked for possible inconsistencies and errors; the corrected data then are analyzed and formatted for various presentations and reports. Figures demonstrating fish movement and habitat use patterns are also developed for a variety of educational programs (VIMS Marine Science Day, kids fishing clinics, science teachers and public presentations). Data and graphics also are developed in different formats for various program dissemination needs, i.e. VIMS website pages, annual tagging training workshops, posters, annual reports and presentations (angling clubs, civic groups and scientific meetings). Tag and program equipment orders including the construction of fish measuring boards are handled by VIMS.

VIMS also periodically conducts tag retention field trials to evaluate whether changes might be warranted regarding the type of tag used for a specific species. Depending on the size range of fish, certain tags are more appropriate for small fish specimens (like the 2.5 in T-bar tag) versus large fish (plastic and stainless steel dart tags). For target species larger than 26-28 inches total length, the program recommends using a 6.25 in. stainless steel dart tag with wire core sheath.

Since 2008, select taggers have been testing dogleg dart tags (DD tags) and wide-anchor dart tags (DW tags) for improved retention in speckled trout and red drum. Tag retention studies continued in 2011 for these plastic dart tags to examine patterns of times at large (versus T-bar tags). Recapture rates and times at large are being examined to determine if distinctive patterns result from the DD and DW tags.

2011 ACCOMPLISHMENTS

Tagging Effort and Recaptured Fish Results

Through 2011, the program's database included over 191,160 tagged fish records and approximately 21,422 recapture records (Table 6). (*Note: VGFTP data referenced here include summaries of fish tagged and recaptured in terms of the number of *fish* recaptured (Table 5) and the *cumulative* number of *recaptures*, including multiple recaptures of the same fish (Table 6).)

During 2011, more than 110 trained anglers tagged fish. In February, "Top Tagger" awards were presented in Hampton at Bass Pro Shops' "Spring Fishing Classic" seminar series. The Tagging Program is fortunate to have a consistent group of anglers dedicating volunteer effort into tagging considerable numbers of fish that result in useful recapture data. The 2011 top taggers were responsible for 98 percent of tagged and recaptured fish data last year. The good-natured competition for the annual awards encourages taggers to work at becoming more consistent in their tagging. By doing so, they have a chance at making the list of annual award winners for any given year.

Trained anglers' tagging accomplishments appear in Table 3 by number of tagged fish. Seventy-seven anglers tagged 25 or more fish during 2011, which accounted for about 98 percent of all fishes tagged in the year. This participation level is slightly higher than 2010. These anglers' consistent efforts produce the majority of data on local and regional habitat use and movement patterns of target species.

Top ranking anglers by total recaptures during 2011 appear in Table 4. The majority (95%) of recaptures reported during the year were accounted for by the 39 taggers listed. As expected, anglers tagging the most fish often have the highest number of recaptures per year. Higher numbers of recaptures are associated with a number of variables including fishing (and tagging) frequently, organizing one's tags and data sheets to enhance tagging efficiency, and tagging at locations which hold individual fish for significant periods and which are fished frequently by other anglers.

The range of fishing/tagging areas covered by VGFTP taggers is important to keeping the program data relevant to target species dynamics including year-to-year abundance, habitat use and seasonal migration patterns. However, also important are a smaller number of taggers who routinely push themselves to even higher tagging goals (200-900+ fish

per year). The teamwork and cumulative data resulting from taggers at each tagging effort level keep the program responsive to changes in Virginia's recreational fishery.

Special Flounder Effort-VIMS Project

A select group of program taggers who volunteered to assist a special VIMS flounder research project deserve special recognition. These individuals helped VIMS collect data on T-bar tag loss rates by double tagging some of their captured flounder. The group included Ed Shepherd (Yorktown), Scott Vinson (Williamsburg), Jay Duell (Smithfield), Lee Hughes (Virginia Beach), Jim Leiffer (Gloucester), Dorothy Elliott (Wachapreague) and Mike Handforth (Chincoteague). These anglers were selected for their expertise with flounder; they double-tagged fish from a mix of fishing locations ranging from fishing piers to other favorite flounder fishing sites in the lower bay. Their individual tag and recapture data for the flounder tag loss study are included in Table 7. (Note: these data are not included in the previous overall tag and recapture totals).

Addressing Challenges

Taggers generally encourage other anglers catching an undersized, tagged fish to consider writing down the tag number (or keying the tag number into their cell phone). Then the angler can report the recaptured fish when fishing slows, or at the end of the fishing day. Such releases provide a chance that the tagged fish might be recaptured again during the fishing season. Multiple recaptures of specific fish often occur at fishing piers or other popular structure sites, proven to hold fish for significant periods (often the case with flounder, black sea bass, tautog, spadefish, and triggerfish).

However, during 2009, multiple recaptures of flounder and black sea bass, especially at several fishing piers, significantly strained the program's supply of merchandise rewards (limited by the program's budget). The increase in single and multiple recaptures of such fish also put unprecedented stress on the VMRC office staff. Working to improve the situation, program coordinators sent out letters in early May 2010 to all taggers requesting they use a minimum fish size limit when tagging flounder (only fish 12 inches or larger) and black sea bass (only fish 6.5 inches and larger). This approach reduced total numbers of multiple recaptures for both species during 2010 and 2011 and made program management and reward distribution more manageable.

Special Database Benefits for Management & Research

Use of the VGFTP as a source of data by recreational fisheries managers has grown.

Cobia: The VGFTP data were included in the 2011-2012 South East Data Assessment and Review for cobia, where recapture data were examined for patterns in long term migration and habitat use.

Tautog: VIMS analyzed VGFTP tautog data for the 2011 Atlantic States Marine Fisheries Commission compliance report. Tag and return data and recapture rates were included for review.

Flounder: In 2011, VIMS engaged with the VMRC to work with taggers to collect whole catch data for flounder. Also, A VIMS Ph.D. student, Mark Henderson (advisor, Dr. Mary Fabrizio, VIMS Dept. of Fisheries Science), is using the program's 2000-2011 flounder tag-recapture data as part of his broader study of the dynamics of seasonal movement of the species between lower Chesapeake Bay and offshore waters. He is also developing a stock assessment model that may enable him to derive an estimate of fishing mortality associated with Virginia's bay and Eastern Shore recreational fishery. A part of the research project focuses on double tagging of flounder during the 2009-2011 fishing season by VGFTP taggers (p.13) (using both Petersen disc tags and the program's T-bar tags). This information will be important both for the tagging program and for the research project.

SPECIES RESULTS

2011 and Overall

Black Drum:

In 2011, 204 black drum were tagged, of which 84 were adult fish (16-52 inches TL). As in previous years, 2011 drum recaptures were low (n=10). The recapture rate (for fish recaptured in 2011) was approximately 4.7%, an increase from 2010 (2.4%). From 1995-2011, more than 3,440 black drum were tagged and 182 recaptures were reported (Tables 5, 6), for an overall recapture rate of 5.3%. Most black drum were tagged at the Elizabeth River Hot Ditch (this site made up 24% of the top ten tagging sites, Fig. 1a). (*Note: All top tagging/recapture site figures discussed in species results describe the proportion of tags/recaptures at the* ***top ten sites****, not the overall proportion of all tagging/recapture sites*). This differs from past overall patterns (1995-2010), where the peak tagging site was Inner Middle Ground Shoal (26% of top ten sites). Most black drum were recaptured at the York River Hot Ditch (37% of top ten recapture sites, Fig. 1b). This is similar to previous years as the York River Hot Ditch was one of two top recapture sites (made up 31% of the top ten along with Onancock Creek, 1995-2010). Tagged black drum ranged from 5.76-51.5 inches TL with a peak tagging effort at 9 inches TL (n=16) (Fig.2). These size frequencies were similar to patterns in previous years.

***Black Sea Bass*:**

Just over 1590 black sea bass were tagged in 2011. To manage program resources better, a minimum tagging size limit of 6.5 inches was implemented in 2010. Even with this size limit in place, black sea bass had the highest species recapture rate in 2011 at ~30.3% (Table 6).

Black sea bass long-term results (1997-2011) show more than 25,356 fish tagged and 4,709 recapture records (overall recapture rate = 18.6%, Tables 5,6). The top tagging site was Fort Monroe which made up 74% of the top ten tagging sites (Fig. 3a). Fort Monroe was also at the top of the list for tagging for black sea bass from 1997-2010. Ninety-one percent of recaptures took place at Fort Monroe (Fig. 3b) (Note: some sites made up <1% of the top ten sites and show up as 0% on the chart). Although Fort Monroe has been the top recapture site in the past (1997-2010, 43% of top ten sites), the 2011 results show much higher effort there. Tagged black sea bass ranged in size from 5-18 inches TL, with 6.5 inch fish at the peak (n=1,111) (Fig. 4). These results differ from the overall program pattern seen from 1997-2010, when peak effort occurred at 9 inches TL (n=2,106) and the size frequencies were more normally distributed.

Cobia:

In 2011, 158 cobia were tagged, of which 150 were adult fish (24-62 inches TL). The recapture rate for cobia was ~5.1%, a decrease from 2010 (13.9%) The total number of cobia tagged from 1995-2011 was 1,352 fish, with 191 recapture reports (Table 6). Cobia had an overall recapture rate of 12.7% for the past 17 years. The most popular tagging location in 2011 was the Baltimore Channel Buoy Line (24% of top ten), followed closely by York Spit (22% of top ten, Fig. 5a). From 1995-2010, the top tagging sites were the Inner Middle Ground Shoal (25% of top ten) and lower York River (24%), though the Baltimore Channel was third. Recaptures were equally divided among the following sites: Baltimore Channel Buoy Line; Cape Lookout, N.C.; Chesapeake Bay Bridge Tunnel, Fourth Island; Latimer Shoal (RN 16 Buoy); and Plantation Light (Fig. 5b). These sites have all been prevalent recapture locations in the past, though Inner Middle Ground Shoal was the top tagging site from 1995-2010. Tagged cobia ranged in size from 13-61.5 inches TL, with 36 inches (n=9) being the peak length (Fig. 6). This is similar to tagging size frequencies from 1995-2010, where peak effort occurred at 34 inches TL (n=51).

***Flounder*:**

VGFTP flounder show consistent patterns of recruitment within the Chesapeake Bay. From 2007-2011, the majority of flounder were tagged and recaptured in Virginia waters. Minimum tagging size limit restrictions were set in 2010 to better manage program activities (data entry and rewards). This decision helped to verify that the majority of single and multiple recaptures at piers and other structure sites were composed of primarily smaller fish (<12 in.). The Gloucester Point Fishing Pier was the top tagging site for the program (2007-2010) and simi-

lar site fidelity patterns for recaptures have been seen at the Hampton Roads Bridge Tunnel complex, Ocean View Fishing Pier, Fort Monroe Fishing Pier and Rudee Inlet waters. In 2011, approximately 2,684 flounder were tagged and 190 were recaptured (Table 5). From 2000-2011, more than 70,164 flounder have been tagged and 7,437 recaptures have been reported (Table 6), with an overall recapture rate of 10.6%. The top tagging sites in 2011 were the Gloucester Point Fishing Pier (17% of the top ten) and the Hampton Roads Bridge Tunnel (16% of top ten, Fig. 7a). These two sites were also the top two tagging locations for summer flounder from 2000-2010. The top recapture location was Rudee Inlet in 2011 (Fig. 7b). This location was also one of the top sites (second) for recaptures from 2000-2010, though the Gloucester Point Fishing Pier had the most recaptures (29%). Tagged flounder varied in size from 7.5-22.5 inches TL, with the peak size for tagging at 12 inches TL (n=362) (Fig. 8); this is also the size where tagging effort peaked from 2000-2010.

***Red drum*:**

From 1998-2011, >500 red drum have been tagged each year in Virginia (except 2001: n=295). In 2011, 1,219 red drum were tagged and 264 were recaptured (Table 5).

From 1995-2011, more than 28,635 red drum were tagged and 3,269 recapture records were reported for an overall recapture rate of 11.4% (Table 6). The top tagging sites in 2011 were the Elizabeth River Hot Ditch Chesapeake Energy (CE) site (42% of top ten) and the main Elizabeth River Hot Ditch (37% of top ten, Fig. 9a). Tagging effort increased in 2011 at the CE site compared to 1995-2010 when the York River Hot Ditch was the top tagging site (29% of the top ten). The top recapture location was the main Elizabeth River Hot Ditch (47% of top ten) followed by the CE site (31%, Fig. 9b). Again, from 1995-2010, the York River Hot Ditch was the top recapture site (29% of top ten), but the main Elizabeth River Hot Ditch was second (25%). In 2011, tagged red drum ranged in size from 11.5-54 inches TL, with the peak size for tagging 18 inches TL (n=78) (Fig. 10). The majority of tagged red drum were juveniles (< 30 in. TL). Peak effort in 2011 took place at a slightly larger size than 1995-2010 (15 inches TL, n=2,257).

Sheepshead:

Compared to 2010, tagged fish numbers were lower (18 fish, Table 5). No recaptures were reported (Table 6). The top tagging site in 2011 was Long Creek (39% of top ten, Fig. 11). This differs from 2000-2010 results, where the York River Hot Ditch was the top tagging location (44% of top ten).

Tagged sheepshead ranged in size from 8.5-26.5 inches TL, with peak effort at 8.5 and 9 inches TL (Fig. 12). This pattern differed from 2000-2010 size frequencies, where peak effort occurred at the 6 inch size class (n=89).

Spadefish:

There were 28 spadefish tagged in 2011 and 2 recaptured (Table 5). There were over 5,351 spadefish tagged over the past 16 years; 562 recaptures were reported during this time, for an overall recapture rate of 10.5% (Table 6). The top tagging sites were the Chesapeake Bay Bridge Tunnel Third Island, Thimble Shoals Light and Wolf Trap Light (each made up 18% of top ten tagging sites, Fig. 13). These differed from the 1995-2010 results as the Chesapeake Light Tower was the top tagging site (49% of top ten). There were only two spadefish recaptures in 2011, both of which were at Wolf Trap Light. This differs from 1995-2010 data, where York Spit Light was the top recapture site. Tagged spadefish ranged in size from 7.25-17 inches TL with peak effort at 11 inches TL (n=6) (Fig. 14). All of the tagged spadefish were within the mature size range (> 4 in. TL), though peak effort in 2011 was at a smaller size than 1995-2010 (13 inches TL, n=281).

***Speckled trout*:**

Strong year classes of speckled trout in the recreational fishery were documented by tagging efforts in 1995, 1999, 2002, 2004-2010. Like sub-adult drum, speckled trout overwinter in lower Bay power plants during the winter. From November 2009-March 2010 and November 2010-March 2011, good numbers of 13-24 inch speckled trout (including several citations in early 2011) were tagged at the Elizabeth River Hot Ditch. There was also a particularly large YOY class appearing in late summer and early fall 2011. **For the second time, speckled trout led the program in numbers of tagged fish (12,723),** and

the recapture rate rose to 7% (Table 6), an **all time high for the species.**

From 1995-2011, 38,214 speckled trout were tagged and 1,676 recaptures were reported (4.3% overall recapture rate) (Table 6). In 2011, the York River Hot Ditch was the top tagging and recapture site (20% of top ten tagging sites, 52% of top ten recapture sites, Fig. 15a, b). The Elizabeth River Hot Ditch was the top tagging and recapture site for speckled trout from 1995-2010, and when individual Elizabeth River site data are combined in 2011, the Elizabeth River system accounts for 81.4% of the total tagging effort for speckled trout in 2011. Tagged speckled trout ranged in size from 6-33 inches TL, with a peak at 12 inches TL (n=1,207) (Fig 16). Peak effort from 1995-2010 also took place at this size class (n=2,551).

***Tautog*:**

Through 2011, tagging effort on tautog in Virginia waters has resulted in >15,546 fish tagged (Table 5). From this effort, there have been >2,467 recaptures reported (Table 6). Tag-recapture data for tautog continue to document that the species does not undergo regular seasonal movements offshore during the fall or inshore during the winter. Tautog tagged in Virginia Bay and offshore waters show no distinctive northward migration over time. From 1995-2011, there was an overall recapture rate of ~15.9%. The top tagging site in 2011 was the Parramore Artificial Reef (22% of top ten, Fig. 17a). This differed from results from 1995-2010, when the Cape Henry Wreck was the top tagging site. However, the top recapture location in 2011 was the Cape Henry Wreck (32% of top ten, Fig. 17b), which was also the top recapture site in the past (1995-2010). Tagged tautog ranged in size from 9-25.5 inches TL, with the peak at 13 inches (n=1,669) (Fig. 18). Peak effort from 1995-2010 also took place at this size class (n=1,669).

(Gray) Triggerfish:

During 2011 there were 13 gray triggerfish tagged, and 3 recaptures (Tables 5, 6). There were over 1,154 triggerfish tagged and 303 recaptured from 2001-2011 (Table 6). Triggerfish had a high overall recapture rate of 26.3%. The top tagging location in 2011 was off Virginia Beach, midshore waters (38% of top ten, Fig. 19). This site was the runner-up tagging location from 2001-2010, coming in second to False Cape (31% of top ten). There were only 3 triggerfish recaptures in 2011. These were equally distributed in the following areas: off Virginia Beach, midshore waters; Chesapeake Bay Bridge Tunnel, 8 Mile Post (Bend Area); and the Chesapeake Bay Bridge Tunnel Fourth Island. These sites also had high effort from 2001-2010. Tagged triggerfish ranged in size from 12.5-17 inches TL, with the peak effort at 15.5 inches (n=3) (Fig. 20). Peak effort from 2001-2010 took place at the 13 inch TL size class (n=75).

Conclusion

In 2011, the overall fishing effort and resulting tagging effort increased from 2010. The VGFTP had a 15.6% increase in the overall number of tagged fish (n=19,368, Table 6) and a 34.7% increase in recaptures (n=1,955, Table 6) from the previous year. Several of the targeted species in the program had an increase in tagging and recapture numbers in 2011. Species with an increase in tagging included black drum (n=214 tags, 10 recaptures), black sea bass (n=1,590 tags, 482 recaptures), cobia (n=158 tags, 8 recaptures) speckled trout (n=12,732 tags, 889 recaptures) and tautog (n=698 tags, 79 recaptures) (Table 6). Of these, speckled trout had the most impressive increase with 12,732 tags (a 74.6% increase from 2010) and 889 recaptures (402% increase from 2010). A large influx of juvenile speckled trout led to an increase in effort, making speckled trout the top tagging species for a second year in a row. This is a departure from the previous top species of summer flounder, which ranked as the top tagged species from 2001-2009.

Flounder tagging totals could be lower because of reduced effort- angler feedback from personal fishing accounts and logs noted a slow season in general for summer flounder and related catches, despite the new, lower size limits. As a possible result, summer flounder tagging decreased by 49% (n=5,255 in 2010; n=2,688 in 2011). Other species that had lower tagging and recapture numbers in 2011 included red drum (n=1,226 tags, 282 recaptures), sheepshead (n=18 tags, 0 recaptures), spadefish (n=28 tags, 2 recaptures), and triggerfish (n=13 tags, 3 re-

captures) (Table 6). Anglers expressed concern regarding the lower numbers of red drum and spadefish encountered in 2011. These personal accounts were echoed in VGFTP numbers which showed a 35% decline in red drum tagging and 4.1% decline in red drum recaptures and 67.8% decline in spadefish tagging and 83.3% decline in recaptures compared to 2010. VGFTP managers will follow 2012 tag and return data carefully for these species.

One positive pattern seen in 2011 was the increase in the recapture rate of speckled trout. In 2010, the annual recapture rate for speckled trout was 2.4%; this increased to 7% in 2011. Most of the speckled trout recaptured were young fish tagged earlier in the 2011 season, though the average recapture size was smaller (9.8 inches TL) than in previous years (12.7-17.1 inches TL, 2007-2010). Longer term recaptures will help provide data regarding the retention rate of TB tags in smaller speckled trout, too. Speckled trout made up 65.8% of tagging effort in 2011. This reflects not only the large numbers of speckled trout in the Chesapeake Bay last year, but also the growing popularity of the species as a game fish.

These data provided fish movement and site-fidelity patterns of fish captured and released in Chesapeake Bay and Atlantic coastal waters. VGFTP data have also provided an alternative source of information for marine fisheries management. In the past 17 years, more than 500 taggers have been trained and participated in the program and fishing effort has been documented at over 900 locations in Virginia waters. The VGFTP is a unique and exceptional source of data regarding recreationally important marine fish. Data in this report are accurate as of April 28, 2012. Future analysis of long-term trends in the VGFTP data will continue with the most recent results available online: http://www.vims.edu/vgftp/ . This report is considered a "living" document with updated versions posted at the previously mentioned weblink.

The success of the program is due to the dedicated anglers who collect and report data and contribute their time and effort toward building a better picture of Virginia's marine fish.

References:

Musick, S. and L. Gillingham. 2010 Virginia Game Fish Tagging Program Annual Report. VIMS, Gloucester Point, VA. 61pp.

Tables

Table 1. Virginia Game Fish Tagging Program Annual Tagging Awards 2008– 2011

Category	2008		2009		2010		2011	
Most Recaptured Fish (total)	Ed Shepherd	794	Ed Shepherd	1,018	Ed Shepherd	553	Ed Shepherd	875
Most Tagged Fish (total)	Ed Shepherd	4,030	Ed Shepherd	5,336	Ed Shepherd	2,221	Ed Shepherd	3,434
Most Tagged Black Drum	Doug Wehner	12	Bill Knapp	18	Dave Griffith	11	Jim Robinson	45
Most Tagged Black Sea Bass	Susan Harrell	396	Ed Shepherd	1,862	Ed Shepherd	599	Ed Shepherd	984
Most Tagged Cobia	James Johnson	12	Jorj Head	14	Jorj Head	82	Jorj Head	111
Most Tagged Flounder	Ed Shepherd	1,734	Ed Shepherd	2,737	Ed Shepherd	1,232	Ed Shepherd	253
Most Tagged Red Drum	Ed Shepherd	1,448	Ed Shepherd	632	Jim Robinson	381	Jim Robinson	225
Most Tagged Sheepshead	Kevin Whitley	16	Kevin Whitley	179	Kevin Whitley	10	Wayne Rowe	7
Most Tagged Spadefish	Kevin Whitley	150	Kevin Whitley	172	Carl Stover	34	Carl Stover	14
Most Tagged Speckled Trout	Ed Shepherd	630	Sheldon Arey	920	Sheldon Arey	1,748	Ed Shepherd	2,171
Most Tagged Tautog	Rob Collins	301	Ken Neil	134	Rob Collins	146	Rob Collins	183
Most Tagged Triggerfish, Gray	Robert Collins	96	Rob Collins	92	Rob Collins	79	Rob Collins	8

Note: E. Shepherd assisted VIMS special flounder research project (in part to assess T-bar tag loss rates applicable to Game Fish Tagging Program flounder tag-recapture data); he tagged an additional 506 flounder, producing 47 additional recaptures of flounder; therefore, his actual overall totals for 2011 were: 922 recaptures; 3,940 tags.

Table 2. VGFTP, 2011 Tagging Awards: Winners and Runners-Up

*Note: Ed Shepherd and Mike Handforth tagged an additional 506 and 32 flounder (respectively) in the VIMS Double Tagging Study in 2011.

Most Tagged Fish Overall	**Number Tagged**
First Place: Ed Shepherd	3434
Runner-up: Sheldon Arey	1884
Most Recaptured Fish	
First Place: Ed Shepherd	875
Runner-up: Donnie Smith	97
Most Tagged Black Drum	
First Place: Jim Robinson	45
Runner-up: Carl Stover	28
Most Tagged Black Sea Bass	
First Place: Ed Shepherd	984
Runner-up: Rob Collins	155
Most Tagged Cobia	
First Place: Jorj Head	111
Runner-up: Brian Watkins	17
Most Tagged Flounder*	
First Place: Ed Shepherd	253
Runner-up: Capt. Mike Handforth	211
Most Tagged Red Drum	
First Place: Jim Robinson	225
Runner-up: Capt. Ed Lawrence	121
Most Tagged Sheepshead	
First Place: Wayne Rowe	7
Runner-up: Rob Collins	4
Most Tagged Spadefish	
First Place: Carl Stover	14
Runner-up: Jim Robinson	5
Most Tagged Speckled Trout	
First Place: Ed Shepherd	2171
Runner-up: Sheldon Arey	1855
Most Tagged Tautog	
First Place: Rob Collins	183
Runner-up: Sam Sellard	118
Most Tagged Triggerfish	
First Place: Rob Collins	8
Runner-up: Rick Guyot	4

Table 3. Taggers Awarded Conservation Certificates for Tagging 25 or More Fish during 2011 (by total tag count)

First Name	Last Name	Black Drum	Black Sea Bass	Cobia	Floun-der	Red Drum	Sheeps-head	Spade-fish	Speckled Trout	Tautog	Trigger-fish	Total
ED	SHEPHERD	26	984	0	253	0	0	0	2171	0	0	3434
SHELDON	AREY	1	0	1	15	12	0	0	1855	0	0	1884
DONNIE	SMITH	0	0	0	23	78	0	0	1246	0	0	1347
BRANDON	BARTLETT	1	50	3	20	1	0	0	886	4	0	965
JIM	ROBINSON	45	8	4	75	225	1	4	564	27	0	953
GEORGE	WOJCIK	0	5	1	76	1	0	0	613	0	0	696
ED	LAWRENCE	0	0	1	8	121	0	0	516	0	0	646
CARL	STOVER	28	14	0	203	7	0	14	285	0	0	551
JON	LUCY	4	0	0	2	136	0	0	408	0	0	550
ROB	COLLINS	7	155	0	69	11	4	2	57	183	8	496
WAYNE	ROWE	2	1	0	14	51	7	0	361	0	0	436
MARK	SPENCER	0	0	0	0	2	0	0	355	0	0	357
WALTER	EHMANN	5	39	0	0	58	0	2	245	0	0	349
RICK	GUYOT	3	5	1	17	43	1	0	267	8	4	349
JAY	DUELL	3	2	0	134	5	0	0	174	0	1	319
SAMUEL	SELLARD	7	24	0	104	17	0	0	0	118	0	270
MARVIN	HARDISTY	1	0	0	1	40	0	0	192	0	0	234
MIKE	HANDFORTH	0	0	0	211	0	0	0	0	0	0	211
MIKE	PERRON	3	39	0	73	0	0	0	37	53	0	205
DAVID	COHN	16	7	0	0	29	1	0	49	97	0	199
JOHN	TAYLOR	0	5	0	68	0	0	0	116	0	0	189
KEVIN	CRUM	1	0	0	1	7	0	0	178	0	0	187
JIM	DUELL	1	1	0	98	3	0	0	79	2	0	184
KEN	SCHULTZ	0	0	0	119	0	0	0	24	0	0	143
JOHN	DUNN	0	0	0	2	0	0	0	139	0	0	141
BARRY	DAVIS	0	0	0	16	0	0	0	122	0	0	138
BILL	KNAPP	7	5	1	3	6	3	0	74	36	0	135
JARED	SEELOFF	3	0	0	0	119	0	0	3	0	0	125
RICK	YAVNER	1	0	0	8	0	0	0	113	0	0	122
DAVID	GRIFFITH	0	0	0	37	48	0	0	37	0	0	122
JEREMY	HULCE	6	44	0	1	1	0	0	63	0	0	115
DANNY	TAYLOR	0	0	0	110	0	0	0	0	4	0	114

Table 3. Taggers Awarded Conservation Certificates for Tagging 25 or More Fish during 2011 (by total tag count) *continued*

First Name	Last Name	Black Drum	Black Sea Bass	Cobia	Flounder	Red Drum	Sheeps-head	Spade-fish	Speckled Trout	Tautog	Trigger-fish	Total
SUSAN	HARRELL	0	108	0	4	0	0	0	2	0	0	114
JORJ	HEAD	0	0	111	0	1	0	0	0	0	0	112
KEN	NEILL	9	0	0	0	6	0	0	0	97	0	112
RON	DUKE	0	0	0	0	0	0	0	94	0	0	94
MARK	NESIUS	1	16	0	1	2	0	0	69	1	0	90
MIKE	RUSS	0	0	0	0	51	0	0	34	0	0	85
WAYNE	SEYMOUR	0	0	0	0	40	0	0	44	0	0	84
JOE	SIMONS	0	0	0	0	0	0	0	81	0	0	81
CHARLES	DONNELL	0	0	0	73	0	0	0	0	0	0	73
JOHN	ZARELLA	5	10	0	29	0	0	0	26	0	0	70
BRANDON	POULTER	1	0	4	37	0	0	0	25	1	0	68
RENSHAW	FORTIER	0	0	0	4	0	0	0	63	0	0	67
JOHN	DANCEL	0	0	0	5	0	0	0	61	0	0	66
MATTHEW	MARQUED-ANT	0	0	0	1	0	0	0	63	0	0	64
LEE	HUGHES	0	0	0	63	0	0	0	0	0	0	63
TIMOTHY	WATERS	0	0	0	0	0	0	0	62	0	0	62
KEVIN	DUBOIS	0	5	0	1	0	0	0	53	0	0	59
IN CHUN	KIM	0	0	0	58	0	0	0	0	0	0	58
DOUG	PURCELL	0	0	0	8	0	0	0	49	0	0	57
WES	BLOW	1	0	1	2	12	0	0	41	0	0	57
WILL	DAMERON	2	28	0	22	0	0	0	4	0	0	56
JASON	WALTON	0	1	0	54	1	0	0	0	0	0	56

Table 3. Taggers Awarded Conservation Certificates for Tagging 25 or More Fish during 2011 (by total tag count) *continued*

First Name	Last Name	Black Drum	Black Sea Bass	Cobia	Flounder	Red Drum	Sheeps-head	Spade-fish	Speckled Trout	Tautog	Trigger-fish	Total
JEFF	HOTTEN-STEIN	0	0	0	16	0	0	0	38	0	0	54
SUSANNA	MUSICK	0	3	1	11	4	0	0	33	0	0	52
LANCE	STITCHER	0	0	0	50	0	0	0	0	0	0	50
DOROTHY	ELLIOTT	0	0	0	50	0	0	0	0	0	0	50
JOE	BESSLER	0	0	0	0	0	0	0	47	0	0	47
DAVID	BARNHART	0	0	0	0	3	0	0	44	0	0	47
GERALD	HEAD	0	0	0	0	0	0	0	45	0	0	45
RICHARD	SEELOFF	6	0	0	0	36	0	0	3	0	0	45
RICK	WINEMAN	8	0	0	0	12	0	0	14	10	0	44
WILLIAM	SPRUILL	0	0	0	43	0	0	0	0	0	0	43
JOHN	HUME	0	0	0	0	0	0	0	38	0	0	38
HUNTER	TUCKER	0	0	0	33	0	0	0	0	5	0	38
TIM	CANNON	0	4	0	0	0	0	0	32	0	0	36
RORY	GOGGIN	0	2	0	29	0	0	0	2	0	0	33
THOMAS	EMBRY	0	1	0	29	0	0	0	3	0	0	33
ANDREW	KUMJIAN	0	0	0	10	1	0	0	18	3	0	32
CHRIS	WILLIAMS	0	0	0	18	0	0	0	13	0	0	31
DOUG	WEHNER	10	0	0	1	0	0	0	20	0	0	31
KENDALL	OSBORNE	0	0	0	0	0	0	0	29	0	0	29
BEN	CAPPS	0	6	0	0	0	0	0	22	0	0	28
MERI-WETHER	PAYNE	0	0	0	27	0	0	0	0	0	0	27
BRIAN	WATKINS	0	3	17	1	3	0	0	1	0	0	25
SHANE	HATCHER	0	0	1	24	0	0	0	0	0	0	25

Table 4. Taggers Having 5 or More Fish Recaptured during 2011 (by total fish recaptured)

First Name	Last Name	Black Drum	Black Sea Bass	Cobia	Flounder	Red Drum	Sheeps-head	Spadefish	Speckled Trout	Tautog	Trigger-fish	Total
ED	SHEPHERD	4	427	1	22	4	0	0	416	0	0	874
DONNIE	SMITH	0	0	0	0	24	0	0	73	0	0	97
SHELDON	AREY	0	0	0	1	6	0	0	77	0	0	84
JON	LUCY	0	0	0	0	47	0	0	15	0	0	62
BRANDON	BARTLETT	0	7	0	0	0	0	0	51	1	0	59
ED	LAWRENCE	0	0	0	0	39	0	0	20	0	0	59
JIM	ROBINSON	2	0	0	10	28	0	0	17	1	0	58
JARED	SEELOFF	0	0	0	0	52	0	0	1	0	0	53
ROB	COLLINS	0	16	0	2	4	0	0	2	20	1	45
JOHN	TAYLOR	0	2	0	5	0	0	0	37	0	0	44
CARL	STOVER	2	1	0	16	0	0	0	20	1	0	40
GEORGE	WOJCIK	0	0	0	3	1	0	0	26	0	0	30
MARVIN	HARDISTY	0	0	0	0	19	0	0	7	0	0	26
MIKE	RUSS	0	1	0	0	16	0	0	3	0	0	20
JAY	DUELL	0	0	0	8	5	0	0	4	0	1	18
BILL	KNAPP	0	2	0	0	2	0	0	2	12	0	18
WALTER	EHMANN	0	5	0	0	1	0	0	11	0	0	17
MARK	SPENCER	0	0	0	0	0	0	0	16	0	0	16
MIKE	HAND-FORTH	0	0	0	16	0	0	0	0	0	0	16
RICK	GUYOT	0	0	0	1	6	0	0	6	1	1	15
BRANDON	POULTER	0	0	0	15	0	0	0	0	0	0	15
KEN	NEILL	0	0	0	0	0	0	0	0	15	0	15
MIKE	PERRON	0	1	0	3	0	0	0	2	6	0	12
DAVID	COHN	0	0	0	0	2	0	0	4	6	0	12
RORY	GOGGIN	0	0	0	10	0	0	0	0	0	0	10
JOHN	DUNN	0	0	0	1	4	0	0	5	0	0	10
KEN	SCHULTZ	0	0	0	10	0	0	0	0	0	0	10
SUSAN	HARRELL	0	8	0	0	0	0	0	0	0	0	8
IN CHUN	KIM	0	0	0	7	0	0	0	0	0	0	7
WAYNE	SEYMOUR	0	0	0	0	3	0	0	4	0	0	7
SAMUEL	SELLARD	0	3	0	2	0	0	0	1	1	0	7
WILLIAM	SPRUILL	0	0	0	7	0	0	0	0	0	0	7
WAYNE	ROWE	0	0	0	1	0	0	0	5	0	0	6
BARRY	DAVIS	0	0	0	2	0	0	0	4	0	0	6
WILL	DAMERON	0	4	0	0	1	0	0	0	0	0	5
LANCE	STITCHER	0	0	0	4	0	0	0	0	1	0	5
DAVID	AGEE	0	0	0	1	0	0	0	0	4	0	5
JIM	DUELL	0	0	0	4	0	0	0	1	0	0	5
KEVIN	CRUM	0	0	0	1	0	0	0	4	0	0	5

Table 5. VGFTP Tagged and Recaptured **Fish** by Species and Year (2007-2011)

Year	Black Drum		Black Sea Bass		Cobia		Flounder		Red Drum		Sheepshead		Spadefish		Speckled Trout		Tautog		Triggerfish		Total	
2011	9	204	303	1,590	8	158	190	2,684	264	1,219	0	18	2	28	761	12,723	77	698	3	13	1,616	19,335
2010	2	84	237	1,003	15	108	434	5,251	274	1,866	2	19	11	87	163	7,285	77	683	17	95	1,232	16,480
2009	5	169	656	3,272	8	36	1,098	9,328	506	3,110	8	225	20	390	97	3,194	108	540	45	133	2,545	20,395
2008	6	186	294	2,684	7	64	769	7,874	456	4,504	2	40	36	300	183	3,275	139	745	69	211	1,959	19,883
2007	33	546	252	1,875	13	71	947	8,615	483	3,353	28	229	69	433	59	2,880	227	954	37	262	2,148	19,219
Total Recaps /Tags	55	1,189	1,742	10,424	51	437	3,438	33,752	1,983	14,052	40	531	138	1,238	1,263	29,357	628	3,620	171	714	9,500	95,312
Recap-ture Rate	4.63%		16.71%		11.67%		10.19%		14.11%		7.53%		11.15%		4.30%		17.35%		23.95%		9.97%	

This report accounts for double tagging and counts the number of **fish** that were tagged and not the number of tags. Double tag info is valid for 2008 and after. For recaptures, this report counts the number of fish recaptured and does **not** count multiple recaptures of the same fish. The first column under each species is the number of recaptured fish and the second column is the number of tagged fish.

Table 6. VGFTP Total Number of Tags and Overall Recapture Rates (1995-2011).

Year	Black Drum		Black Sea Bass		Cobia		Flounder		Red Drum		Sheepshead		Spadefish		Speckled Trout		Tautog		Triggerfish		Total	
2011	10	214	482	1,590	8	158	200	2,688	282	1,226	0	18	2	28	889	12,732	79	698	3	13	1,955	19,365
2010	2	85	374	1,003	15	108	464	5,255	294	1,885	2	21	12	87	177	7,291	78	683	17	95	1,435	16,513
2009	5	172	1,012	3,274	8	36	1,265	9,348	544	3,133	8	225	20	391	99	3,203	110	541	46	176	3,117	20,499
2008	6	192	332	2,687	8	66	866	7,896	509	4,925	2	40	41	300	215	3,520	145	745	76	212	2,200	20,583
2007	36	546	292	1,875	13	71	1,060	8,615	511	3,364	41	229	73	433	60	2,929	238	955	47	262	2,371	19,280
2006	28	288	260	1,269	26	187	793	6,218	361	4,153	0	176	28	221	51	1,952	309	2,081	32	79	1,925	16,627
2005	4	205	107	686	4	98	621	6,123	42	794	3	185	21	173	29	1,149	133	822	4	23	973	10,258
2004	5	232	70	1,012	5	184	648	7,286	23	502	27	274	43	299	26	990	119	1,221	41	193	1,016	12,193
2003	5	176	88	922	11	14	397	3,704	33	2,270	0	6	26	236	8	361	59	497	12	31	963	8,219
2002	15	188	231	1,732	15	63	317	3,566	193	2,752	1	10	55	470	23	1,247	129	653	23	56	1,053	10,741
2001	4	395	280	1,913	19	87	636	6,880	27	295	1	7	49	553	13	486	149	951	2	14	1,215	11,599
2000	5	109	294	2,008	10	65	161	2,603	173	1,124	1	12	60	523	11	362	156	713	0	0	912	7,519
1999	7	90	384	2,139	16	59	4	4	135	1,073	0	0	25	233	16	521	356	1,923	0	0	973	6,049
1998	8	196	455	2,655	13	73	3	28	92	551	0	0	38	476	29	495	226	1,347	0	0	881	5,824
1997	2	72	48	592	9	108	2	38	44	438	0	0	36	547	12	440	77	914	0	0	233	3,150
1996	3	85	0	0	9	75	0	6	4	92	0	0	8	189	4	409	74	543	0	0	102	1,400
1995	37	200	0	0	2	50	0	3	2	66	0	0	25	193	14	601	30	260	0	0	110	1,374
Total Recaps /Tags	182	3,445	4,709	25,357	191	1,502	7,437	70,261	3,269	28,643	86	1,203	562	5,352	1,676	38,688	2,467	15,547	303	1,154	21,434	191,193
Recap-ture Rate	5.28%		18.57%		12.72%		10.58%		11.41%		7.15%		10.50%		4.33%		15.87%		26.26%		11.21%	

For recaptures, this table counts the total number of recaptures, including recaptures of the same fish. The first column under each species is the number of recaptured fish and the second column is the number of tags.

Table 7. Number of tagged and recaptured flounder, VIMS Flounder Tagging Study, 2010-2011
Tagging and recapture numbers (and recapture rate) are from flounder **tagged in 2011**.
*Total recaptures includes recaptures taking place in 2011 from flounder that were tagged in 2010 and 2011.

Data courtesy of Mark Henderson

TAGGER	Tagged Flounder	Recaptures	% Recaptured	Total Recaptures *
Ed Shepherd	506	47	9.29	51
Scott Vinson	151	11	7.28	13
Jay Duell	36	2	5.56	3
Mike Handforth	32	4	12.5	5
Lee Hughes	29	6	20.69	6
Dorothy Elliott	0	0	N/A	1
Jim Leiffer	0	0	N/A	0

Figures

Figure 1a. Top Black Drum Tagging Sites

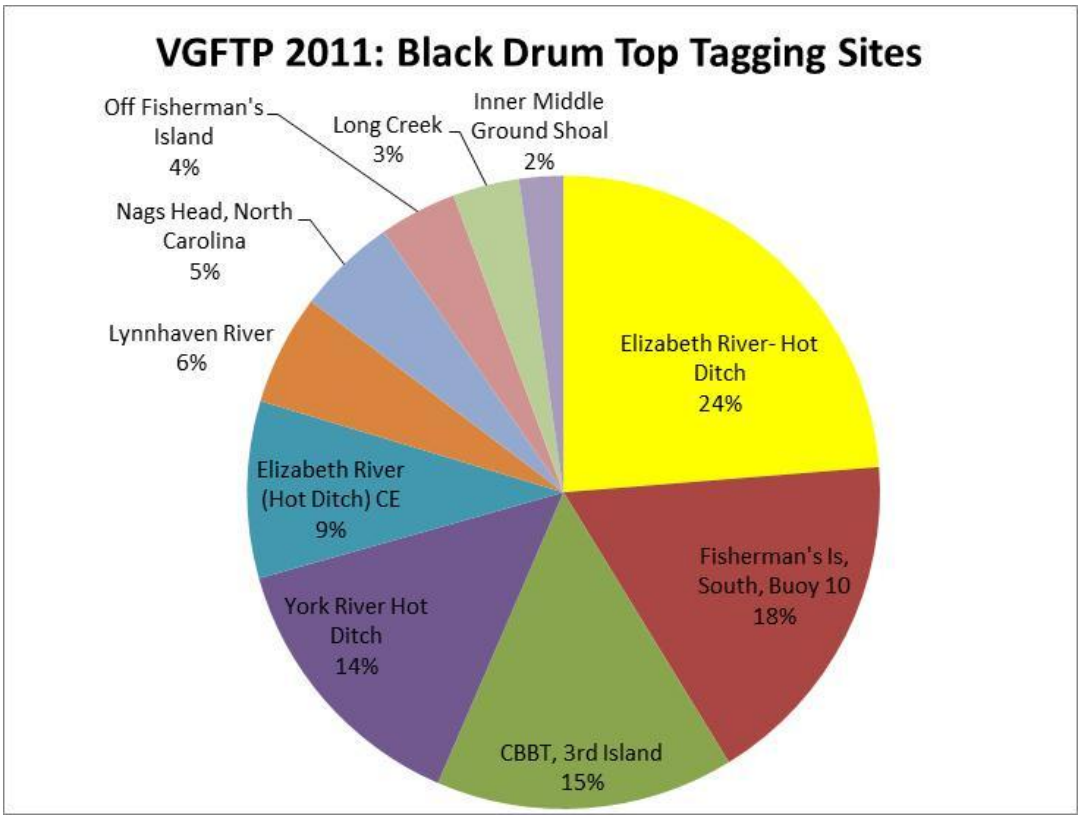


Figure 1b. Top Black Drum Recapture Sites

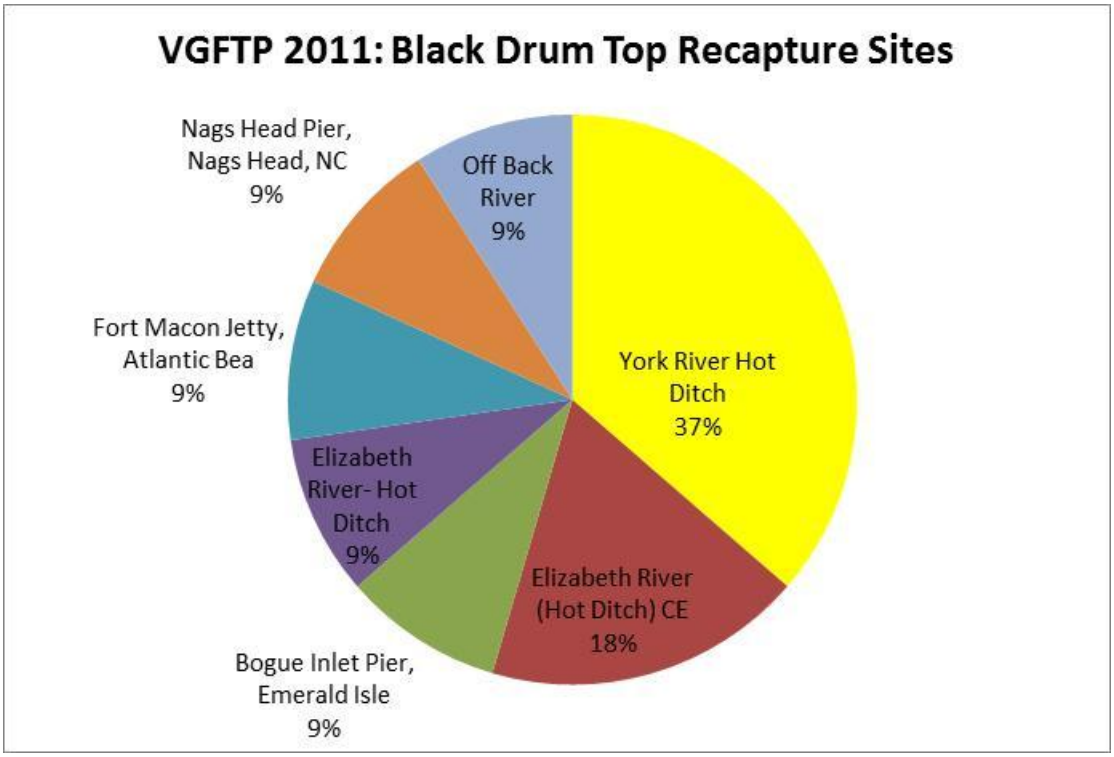


Figure 2. Black Drum Tagging Size Frequencies

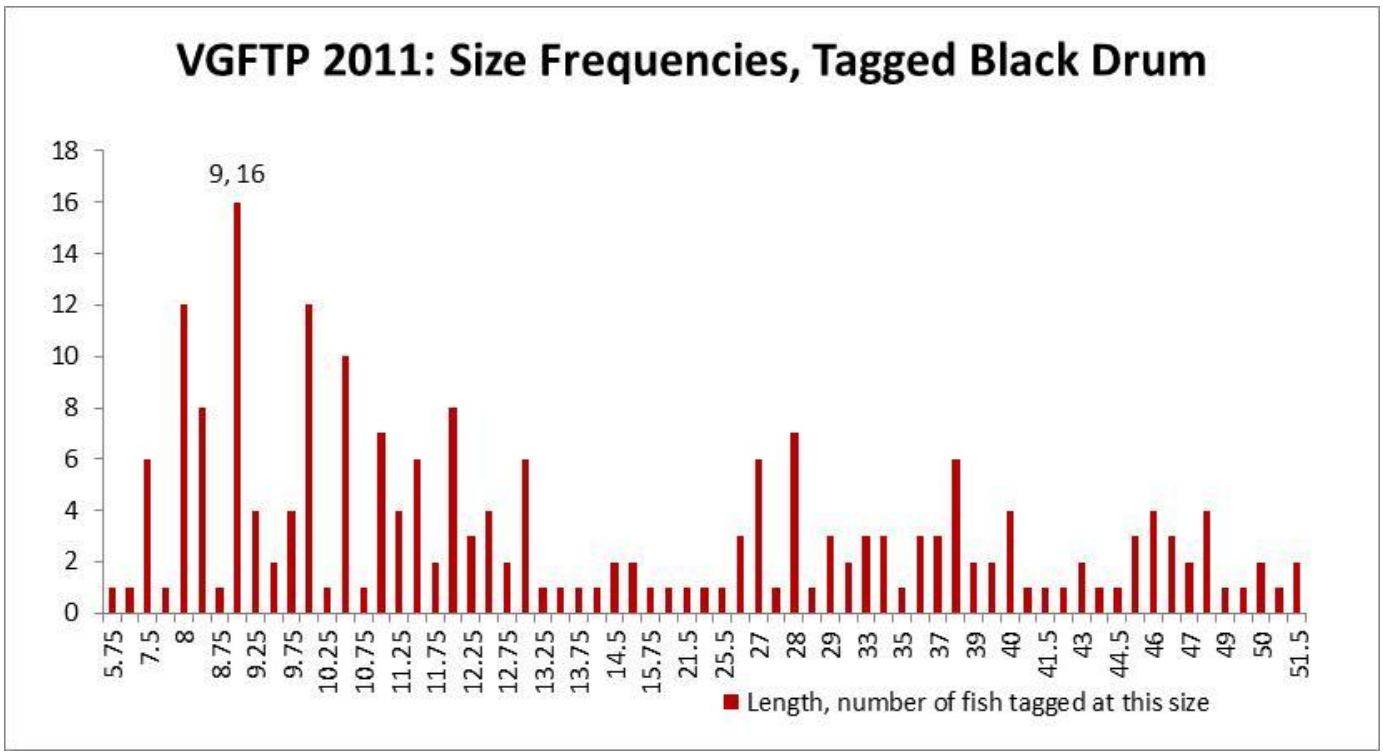


Figure 3a. Top Black Sea Bass Tagging Sites

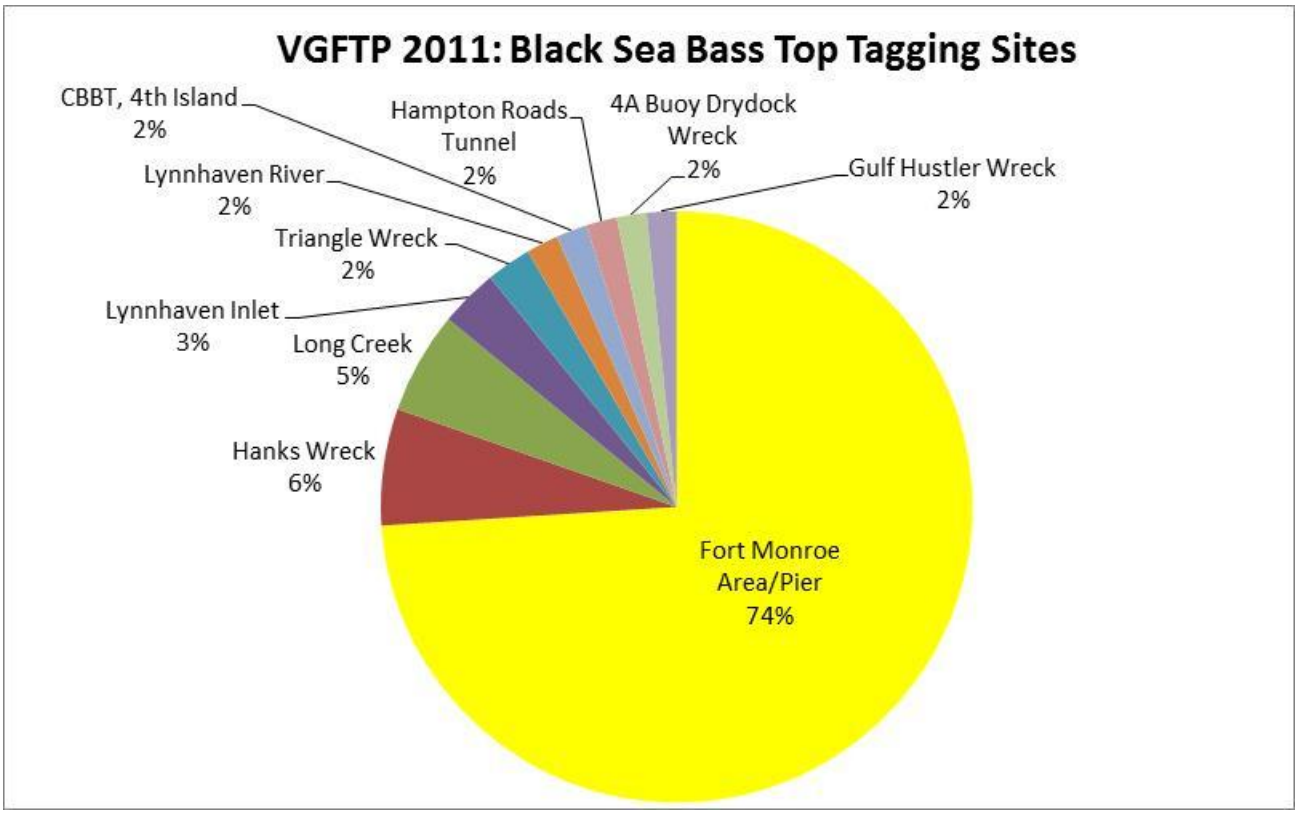


Figure 3b. Top Black Sea Bass Recapture Sites

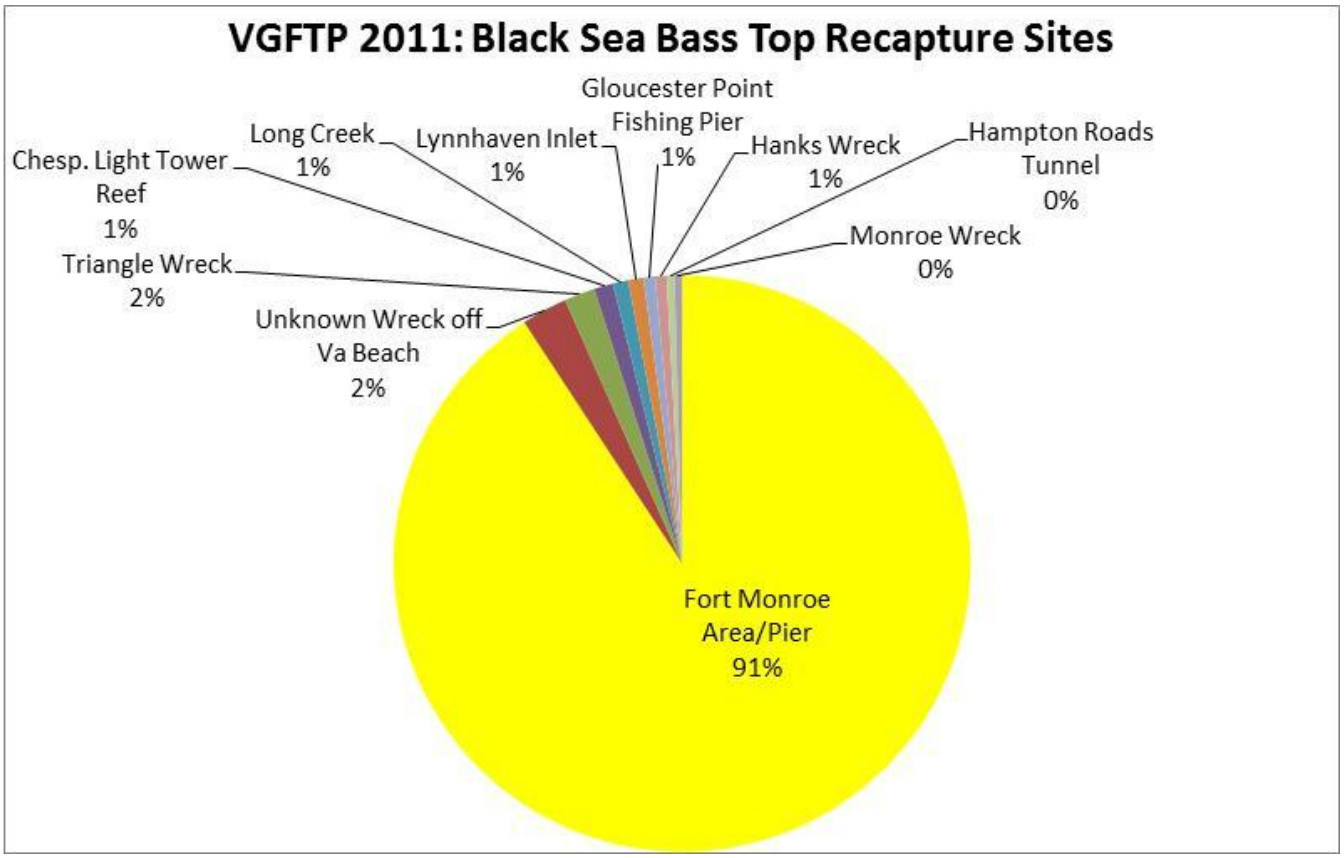


Figure 4. Black Sea Bass Tagging Size Frequencies

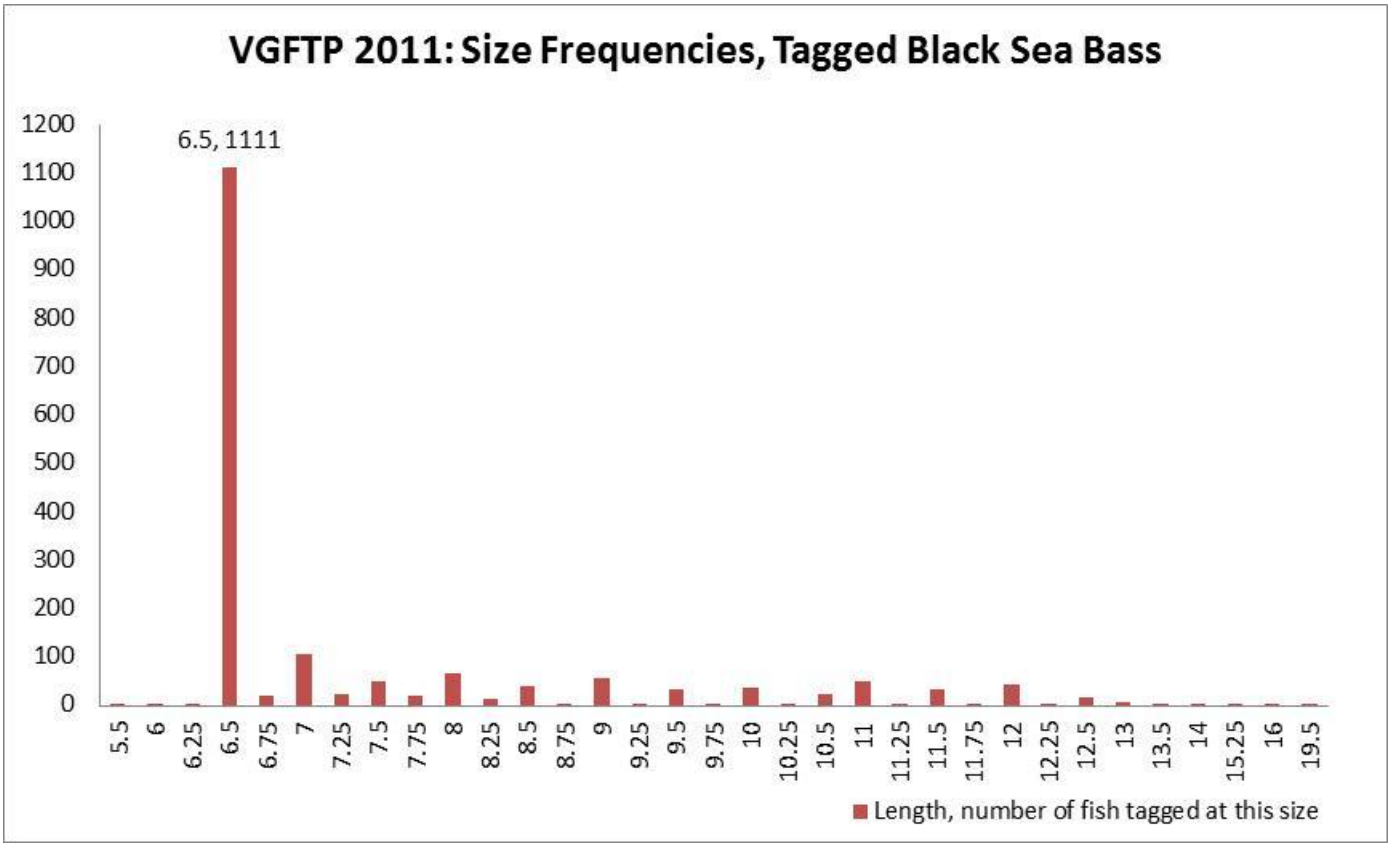


Figure 5a. Top Cobia Tagging Sites

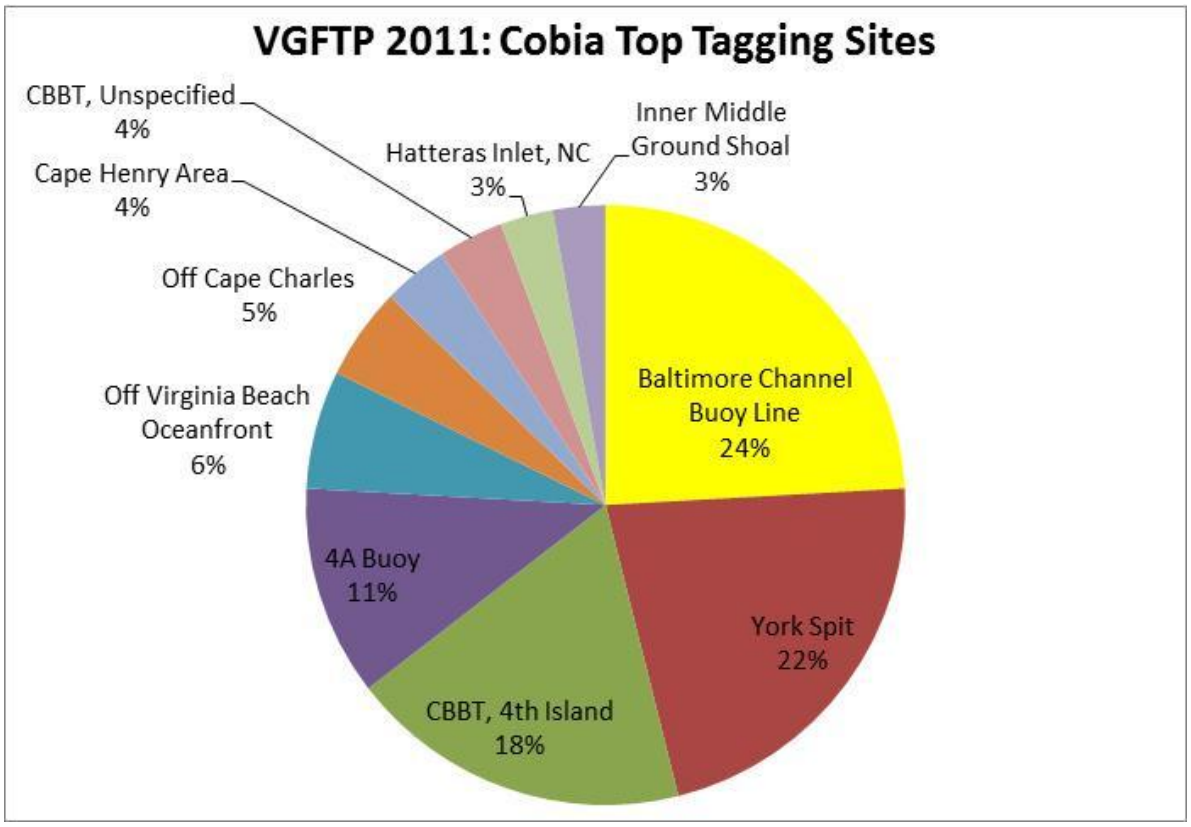


Figure 5b. Top Cobia Recapture Sites

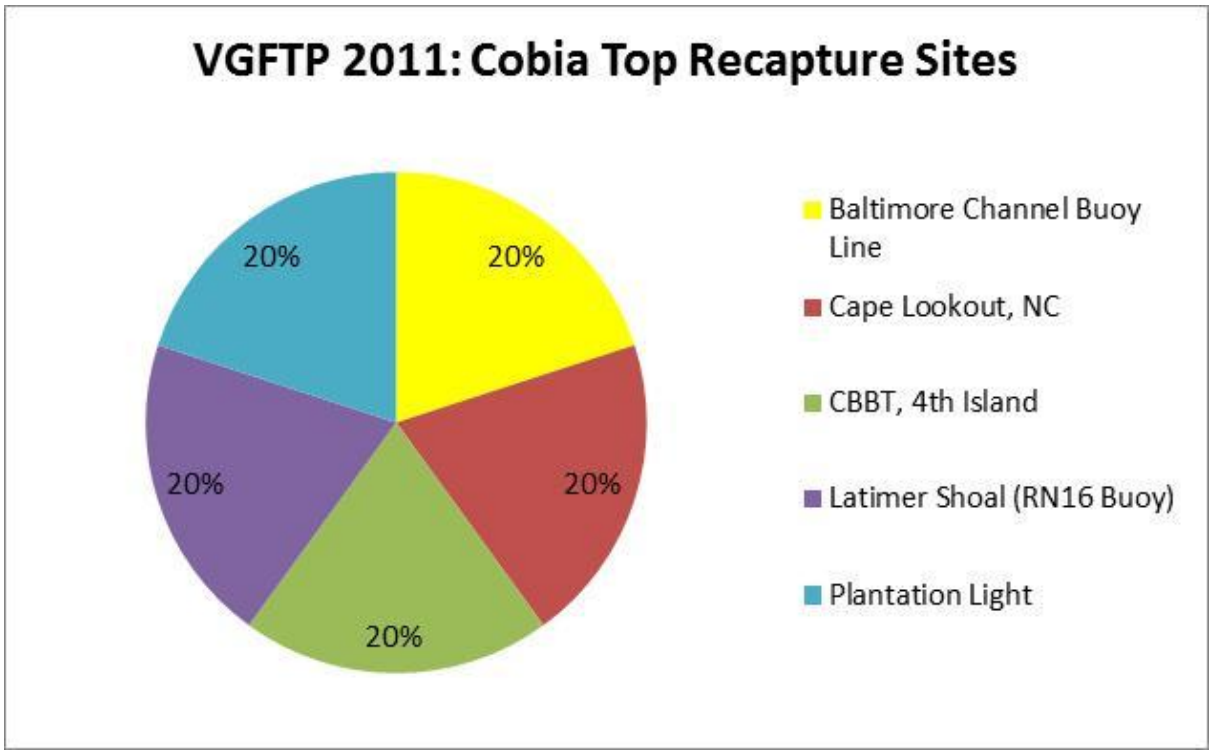


Figure 6. Cobia Tagging Size Frequencies

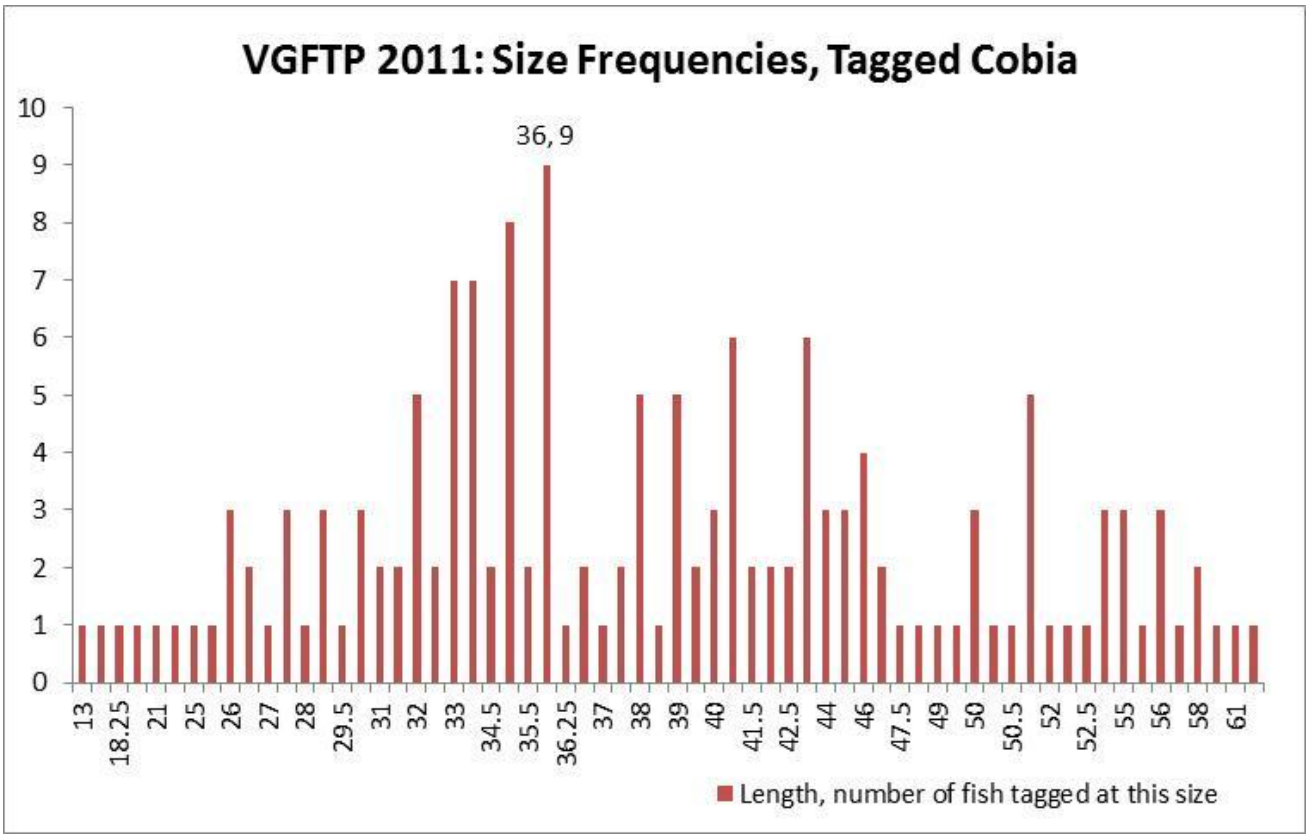


Figure 7a. Top Flounder Tagging Sites

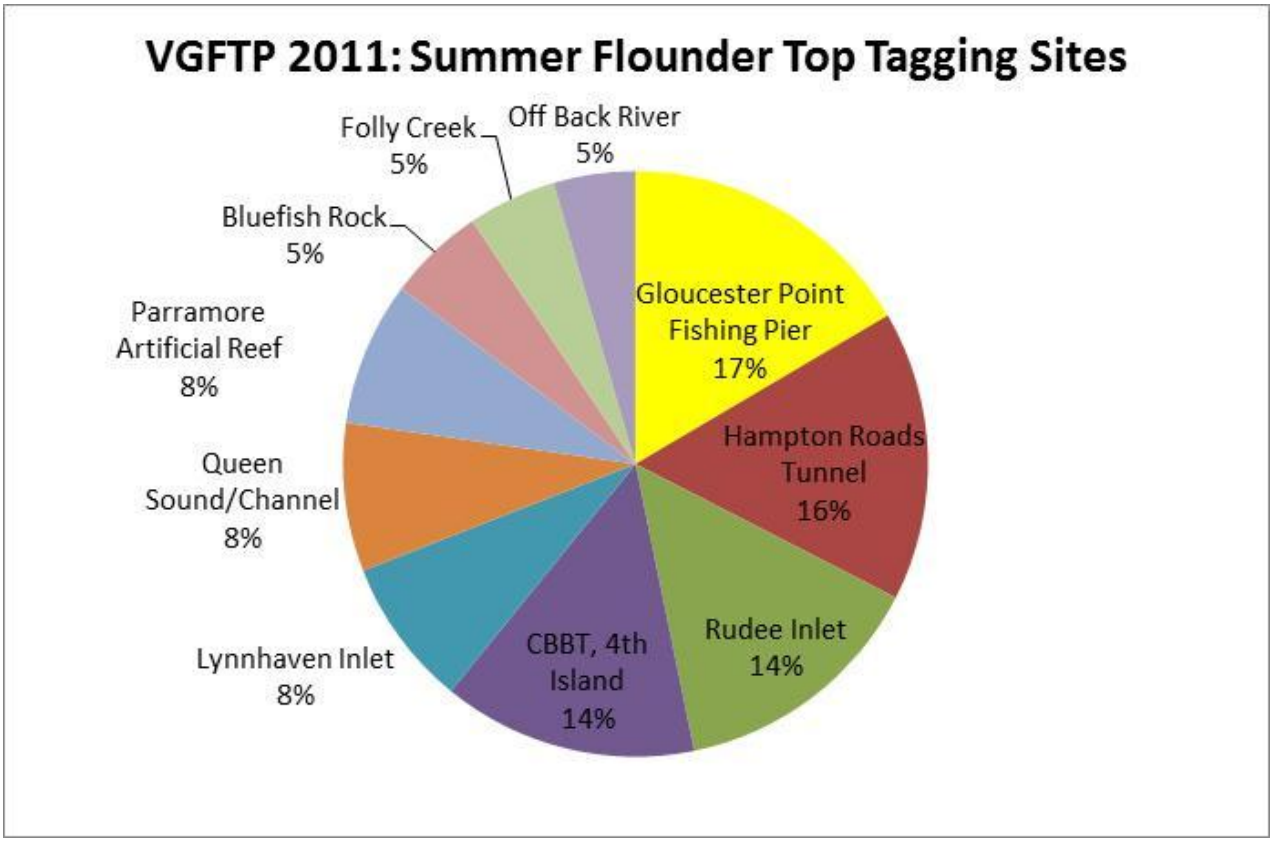


Figure 7b. Top Flounder Recapture Sites

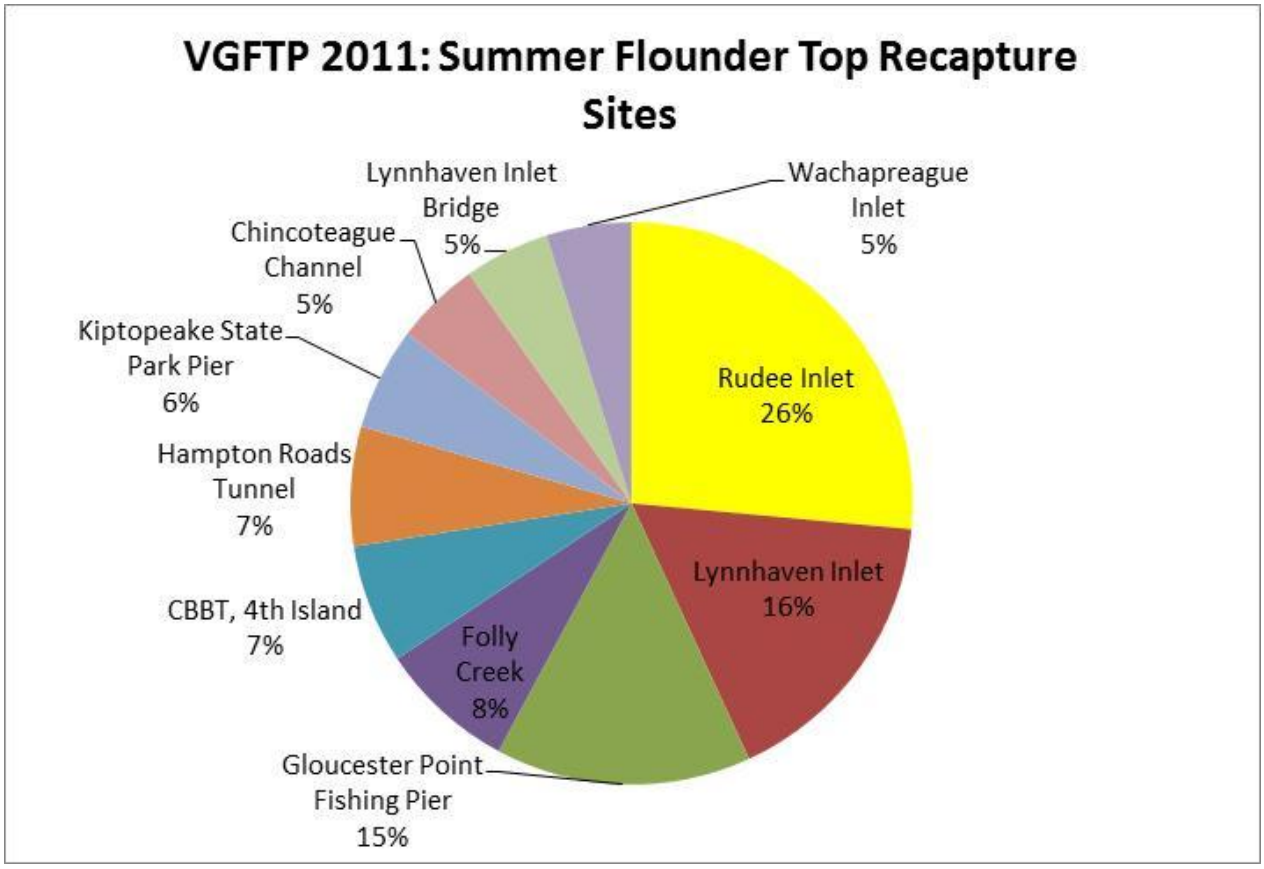


Figure 8. Flounder Tagging Size Frequencies

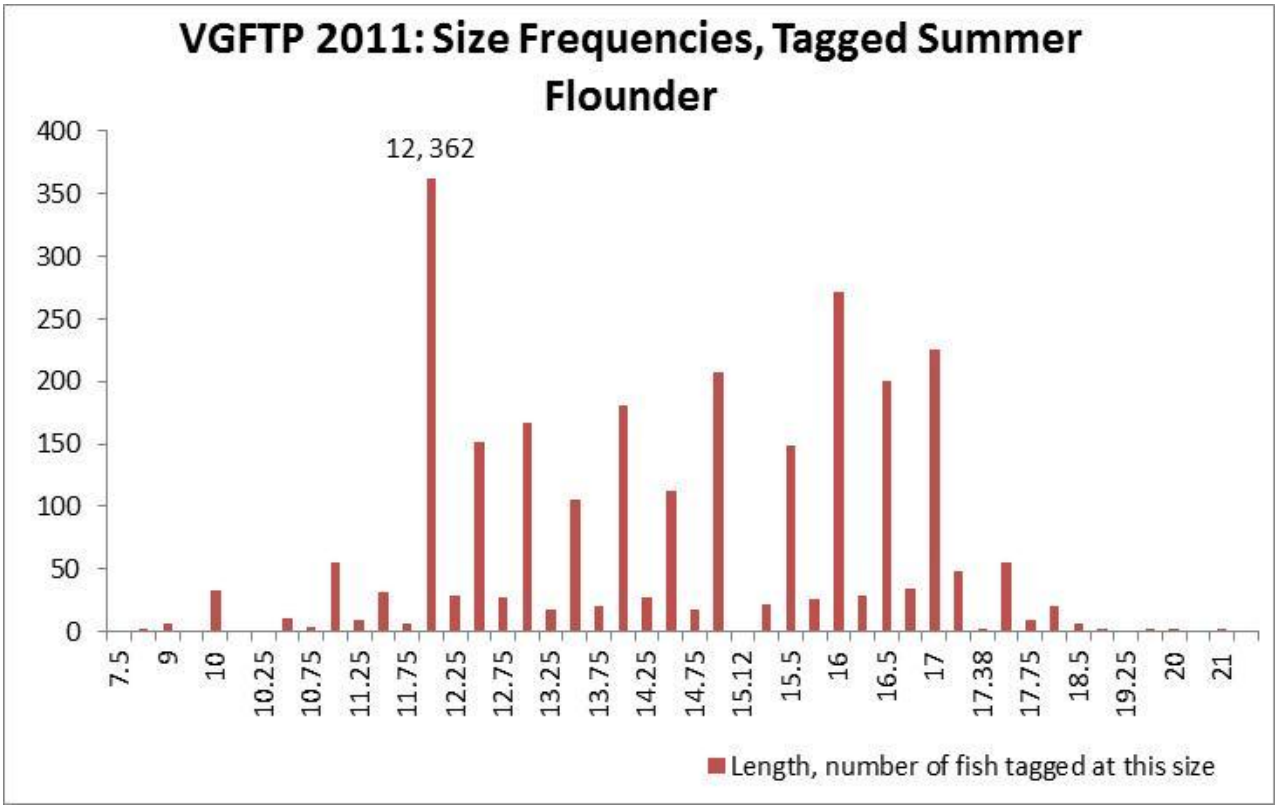


Figure 9a. Top Red Drum Tagging Sites

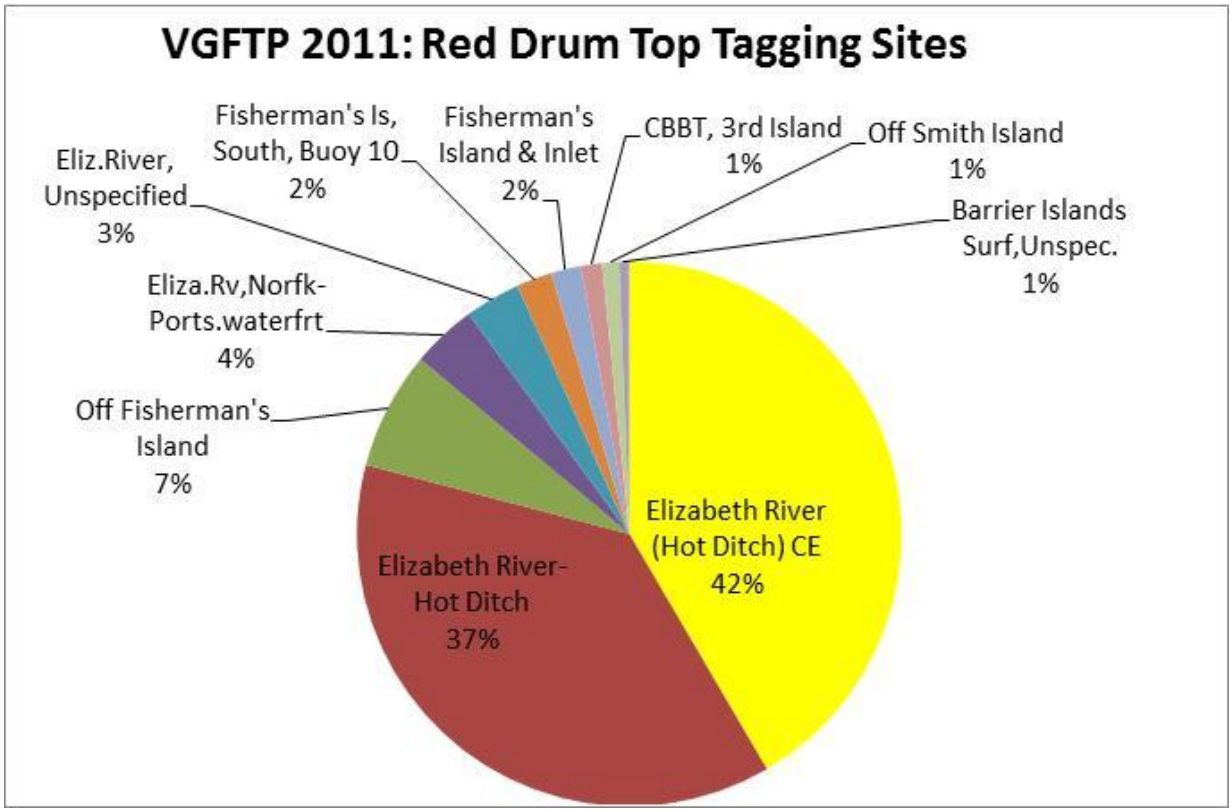


Figure 9b. Top Red Drum Recapture Sites

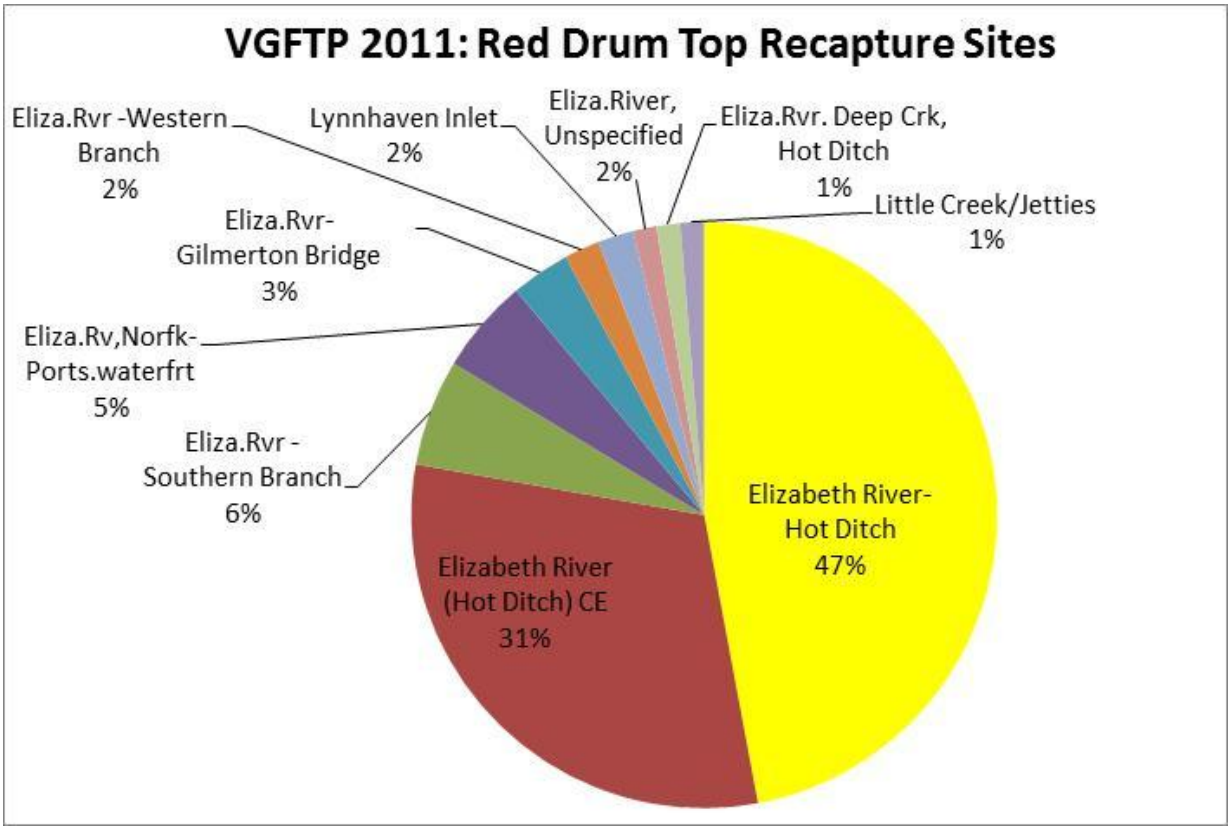


Figure 10. Red Drum Tagging Size Frequencies

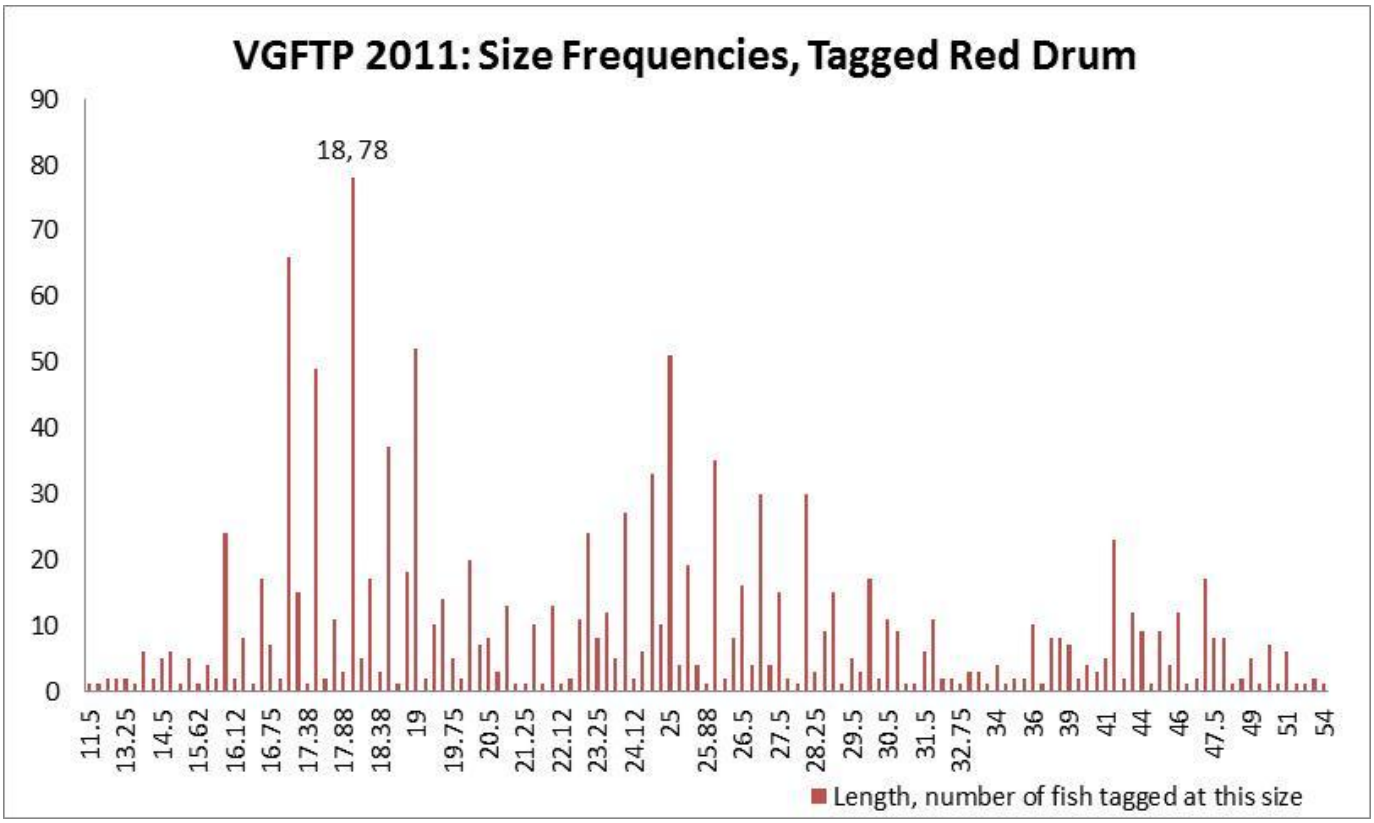


Figure 11. Top Sheepshead Tagging Sites

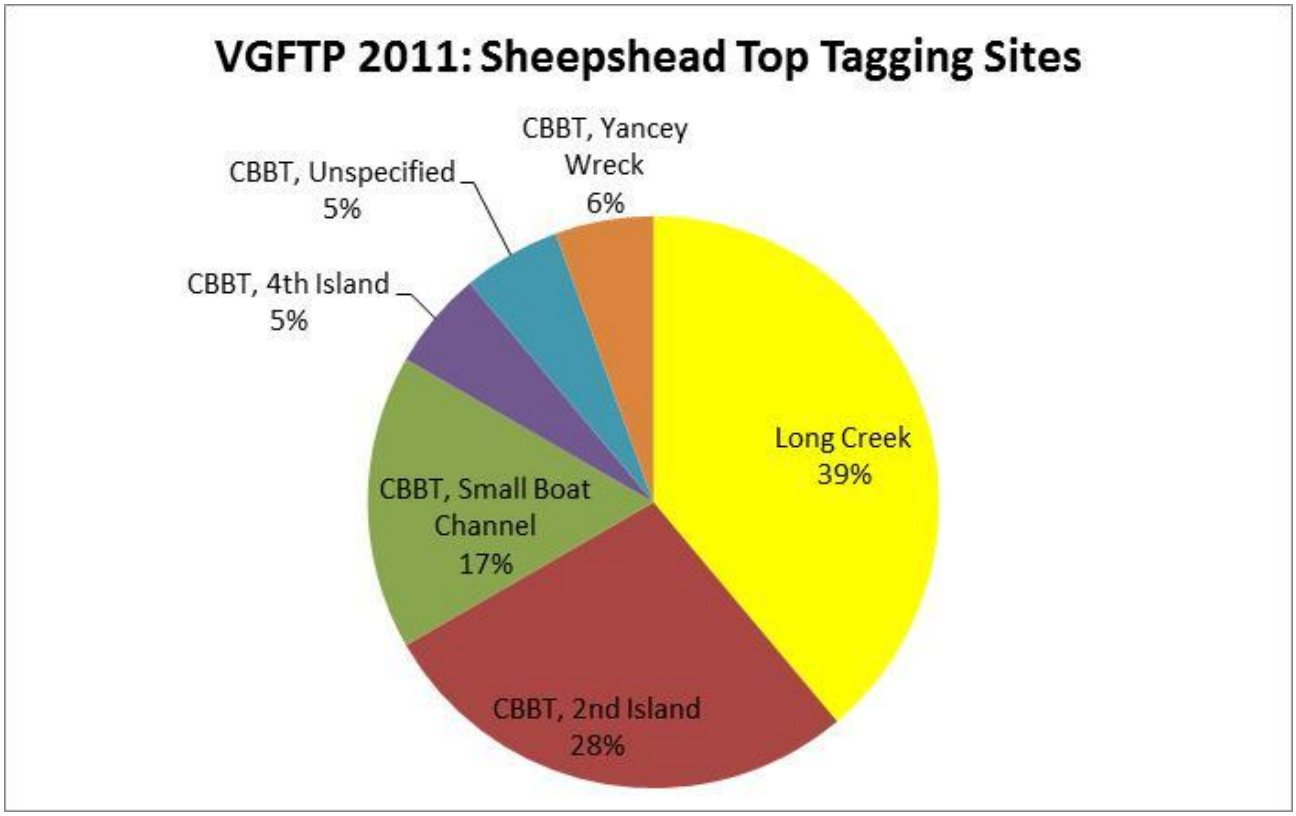


Figure 12. Sheepshead Tagging Size Frequencies

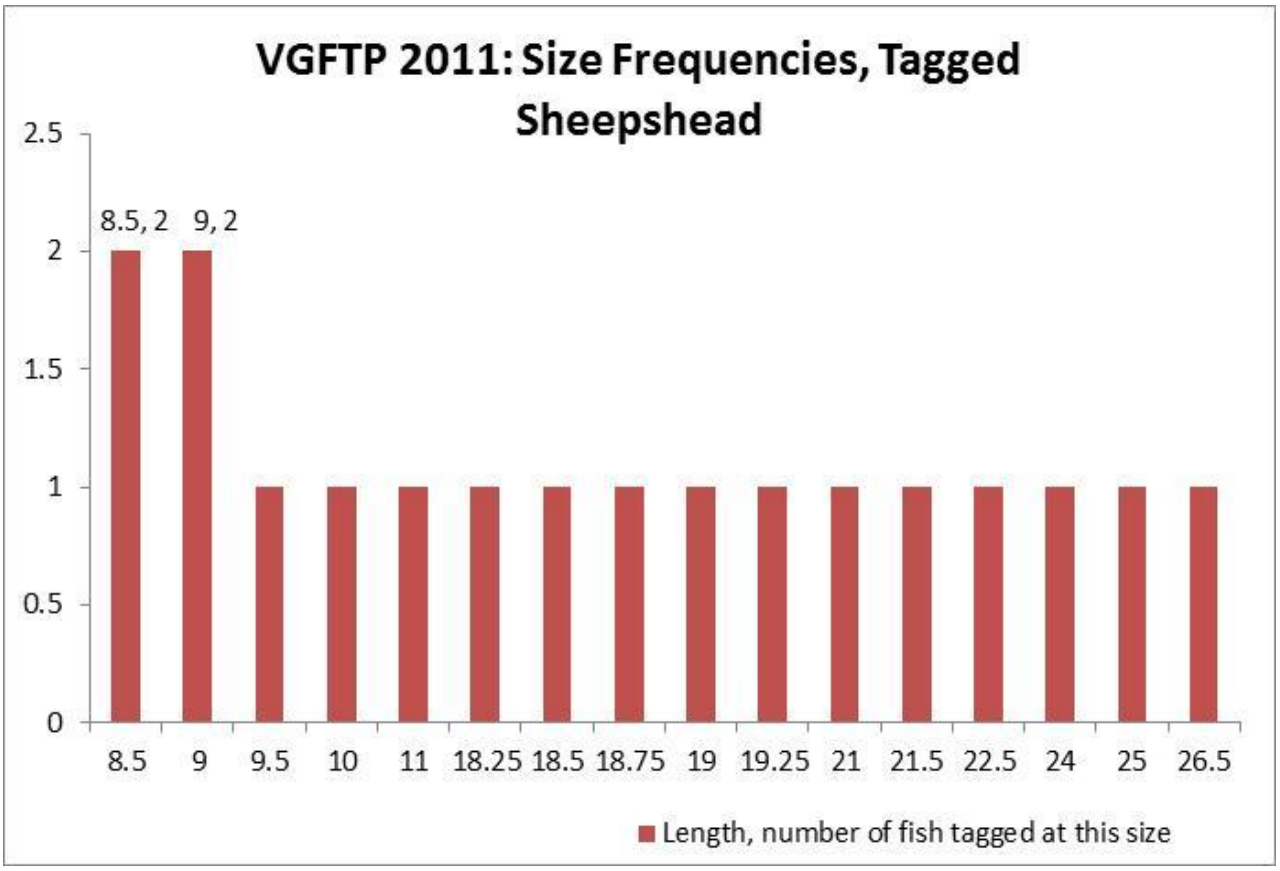


Figure 13. Top Spadefish Tagging Sites

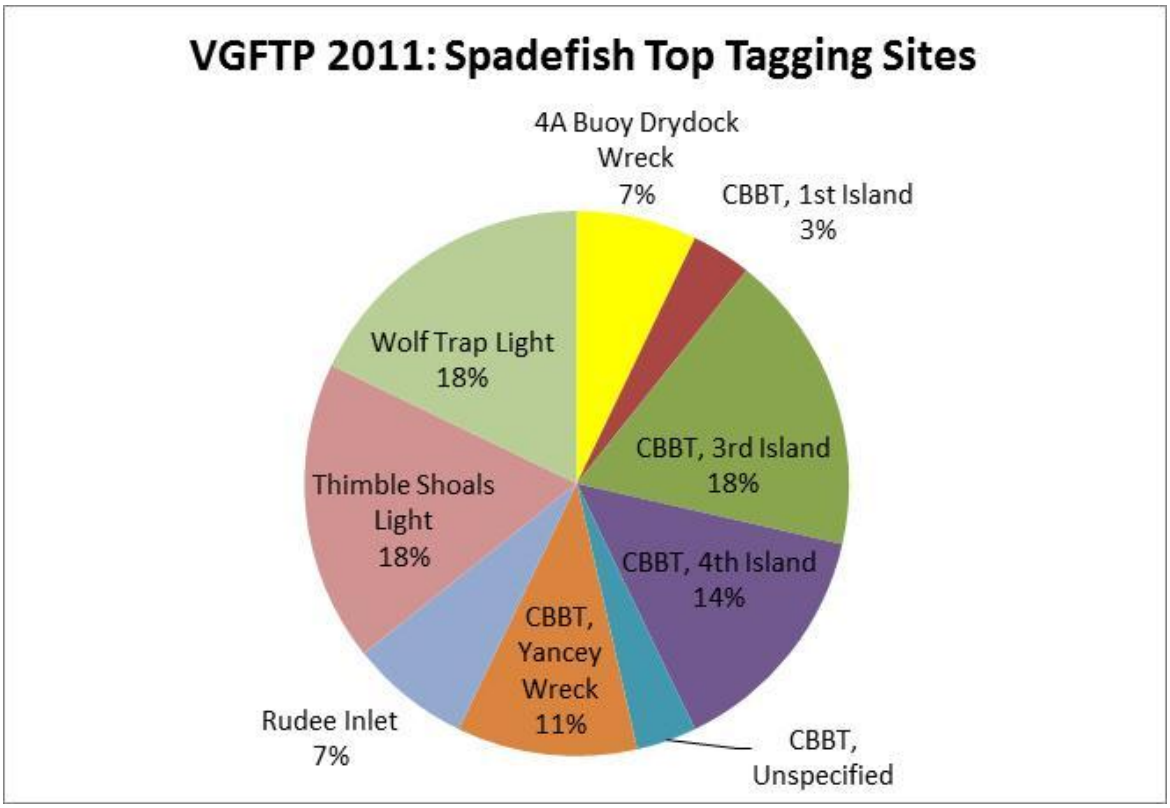


Figure 14. Spadefish Tagging Size Frequencies

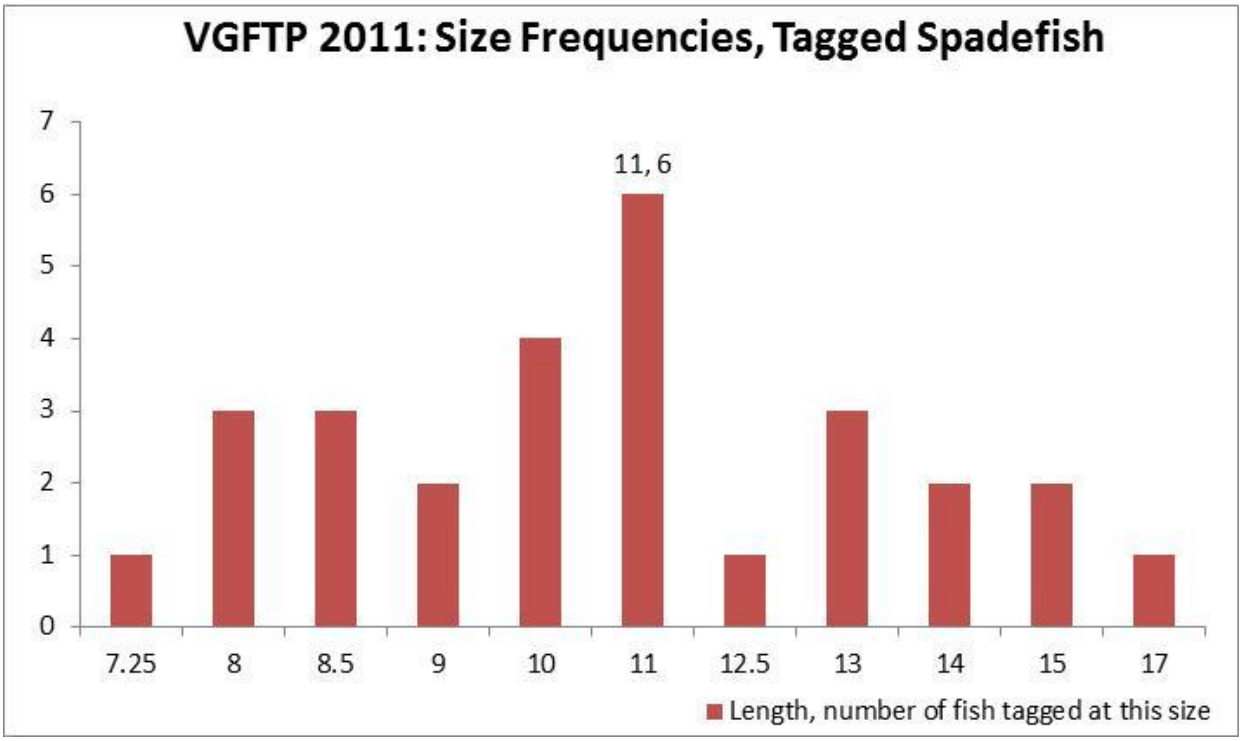


Figure 15a. Top Speckled Trout Tagging Sites

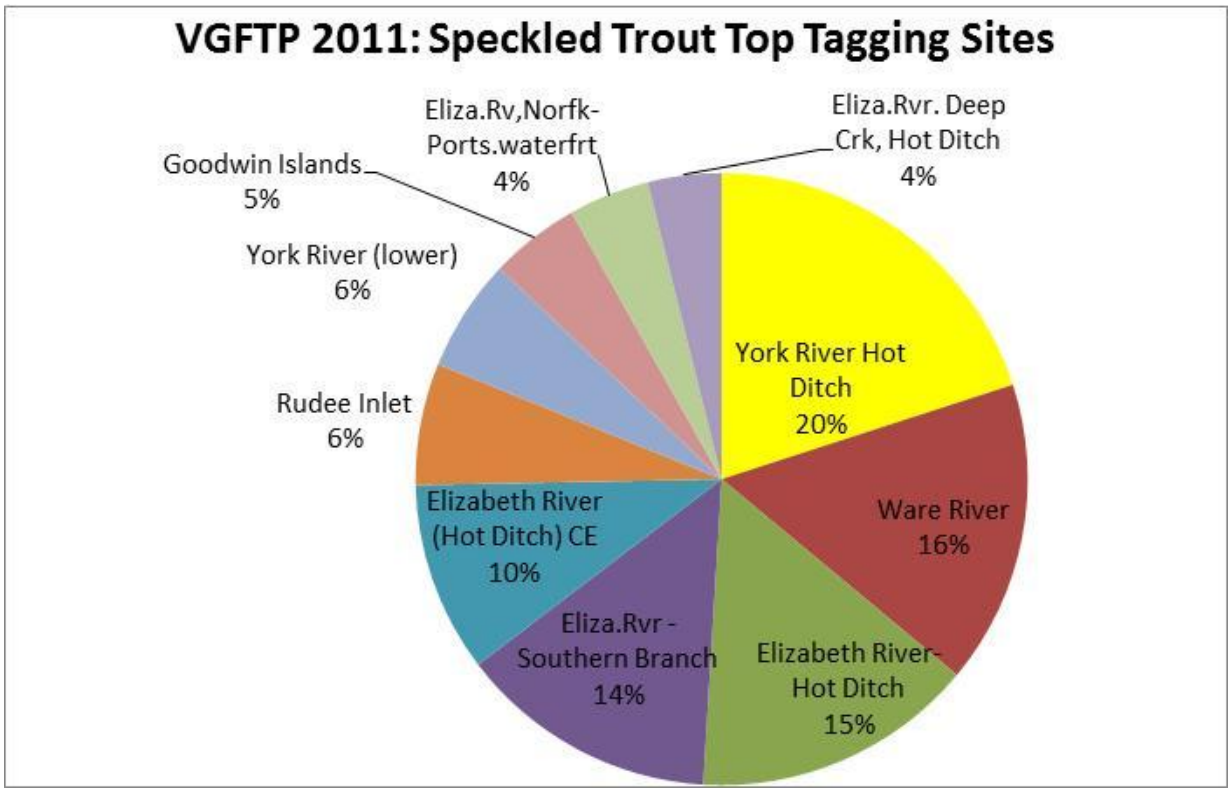


Figure 15b. Top Speckled Trout Recapture Sites

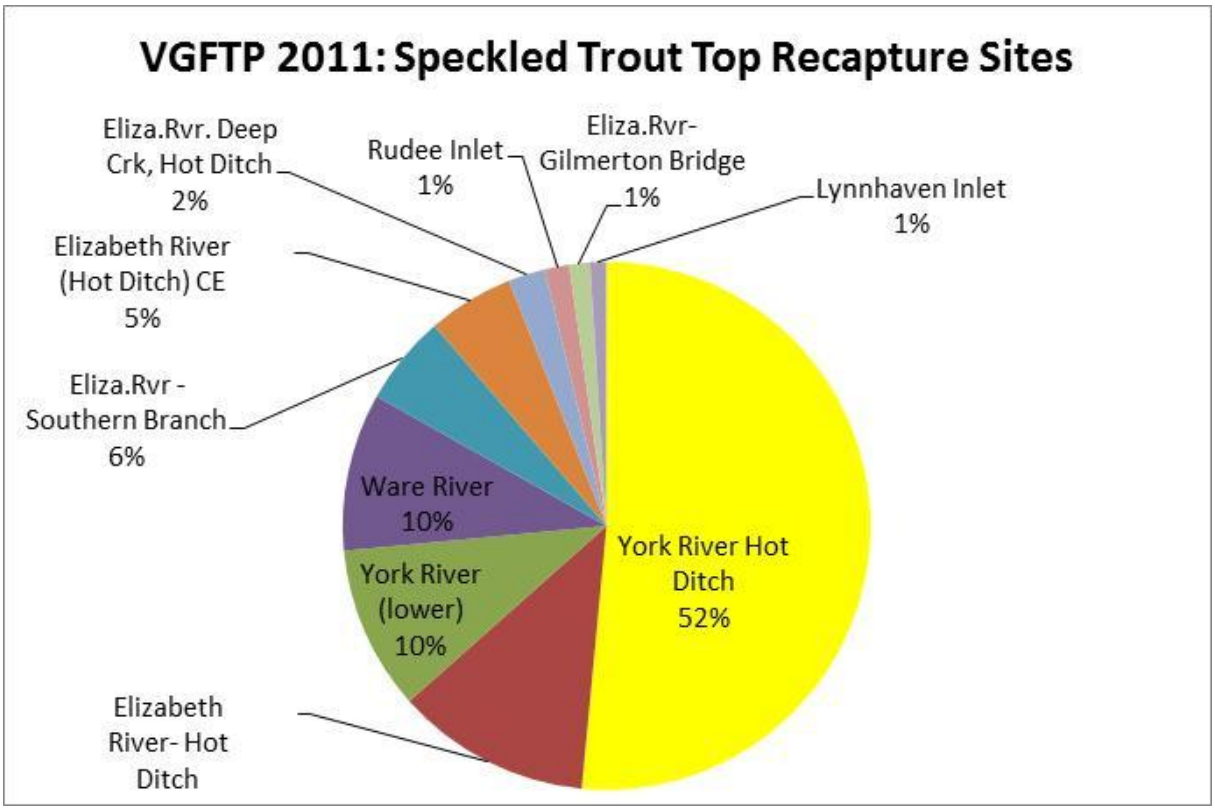


Figure 16. Speckled Trout Tagging Size Frequencies

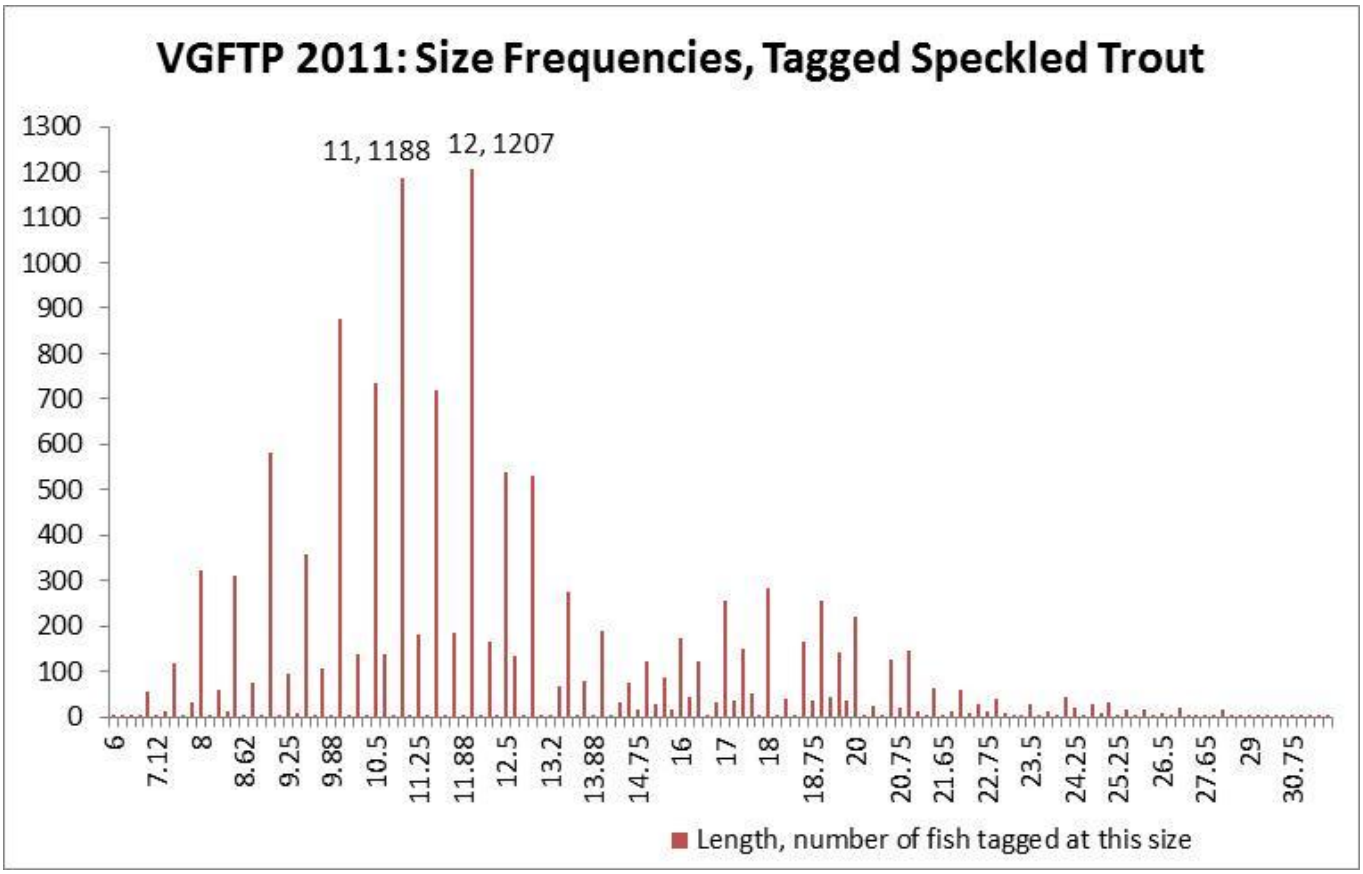


Figure 17a. Top Tautog Tagging Sites

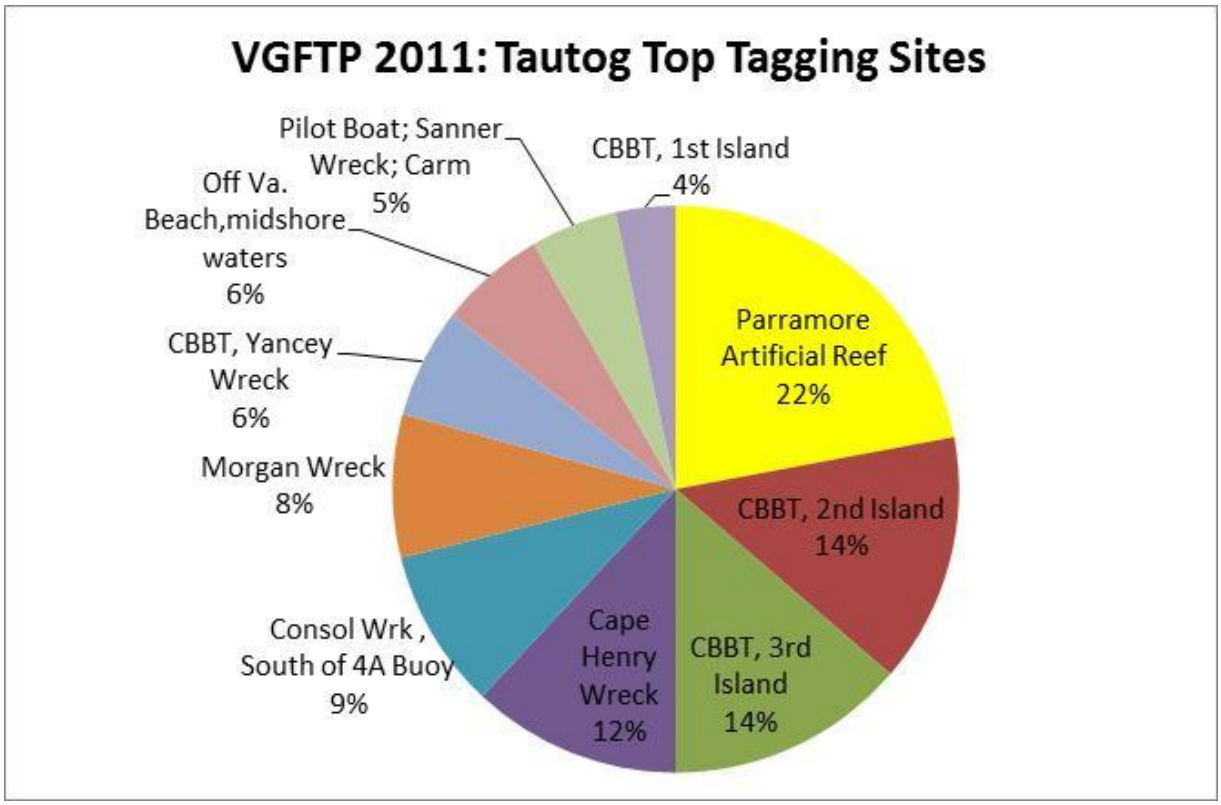


Figure 17b. Top Tautog Recapture Sites

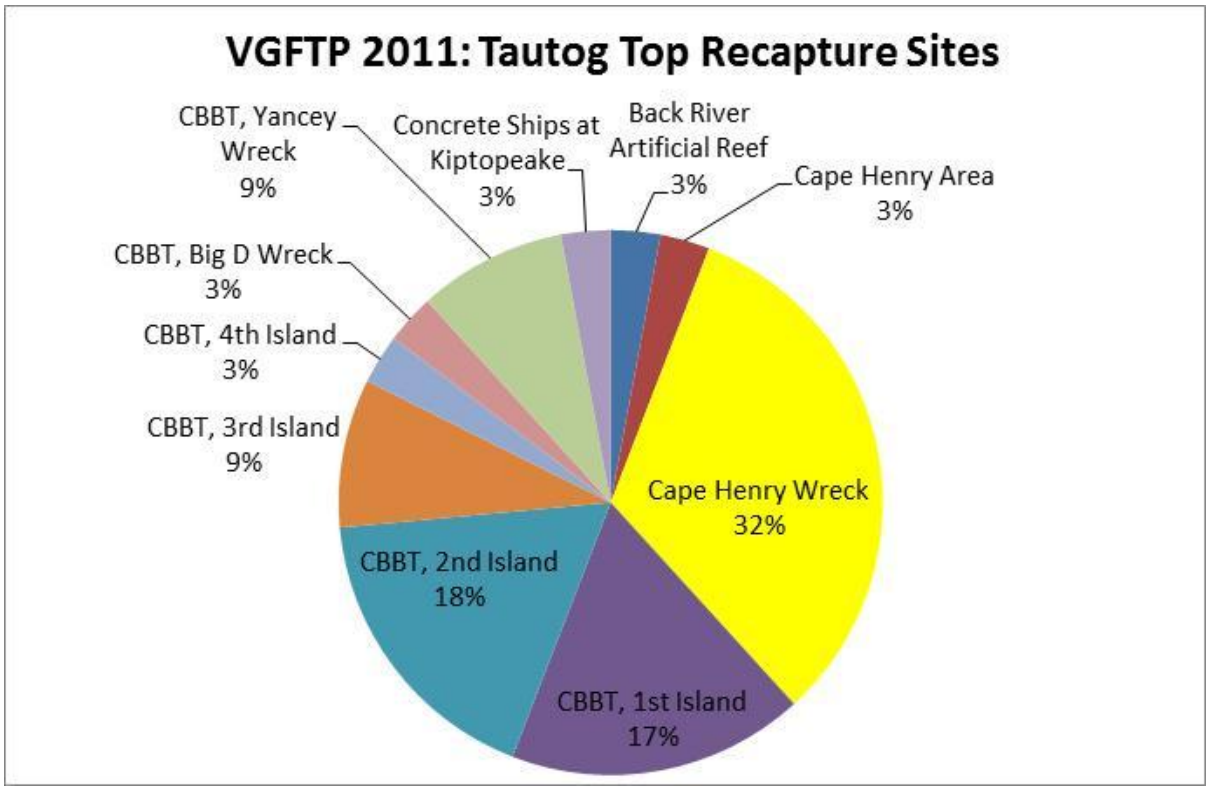


Figure 18. Tautog Tagging Size Frequencies

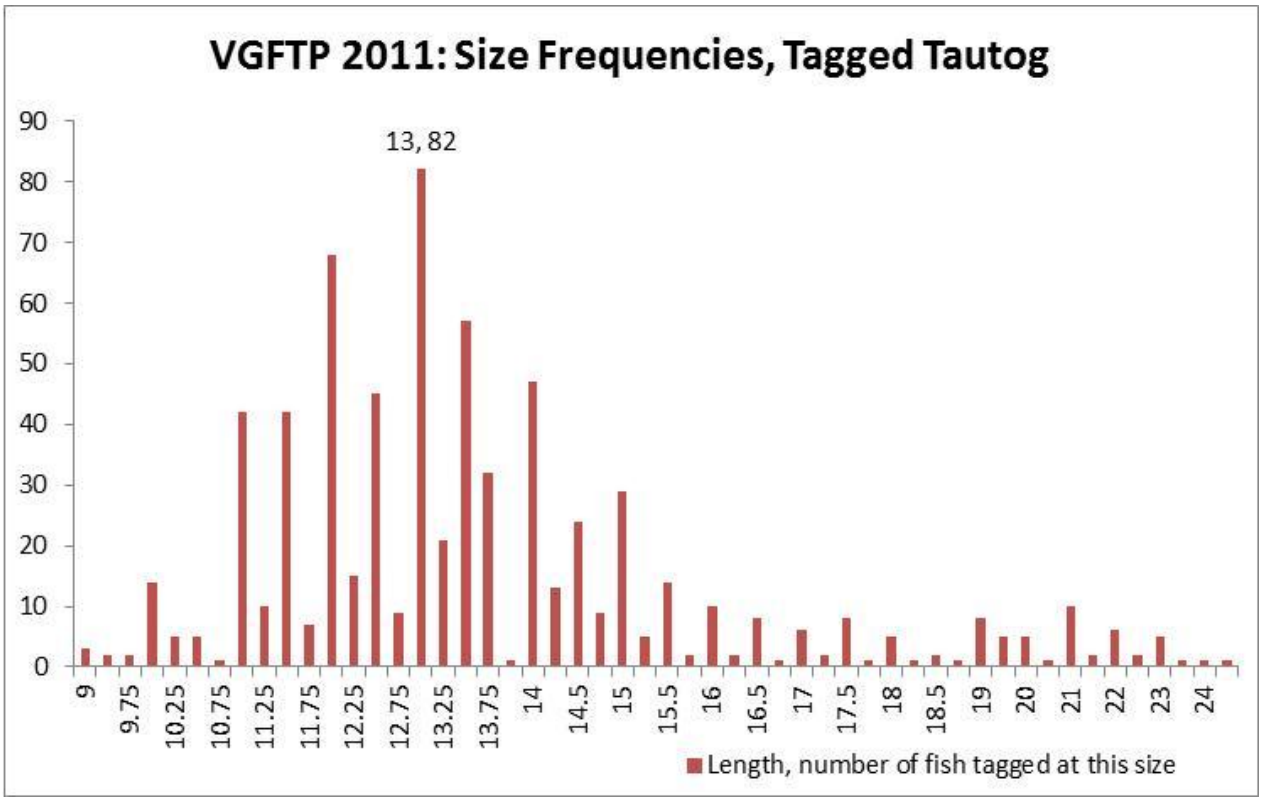


Figure 19. Top Triggerfish Tagging Sites

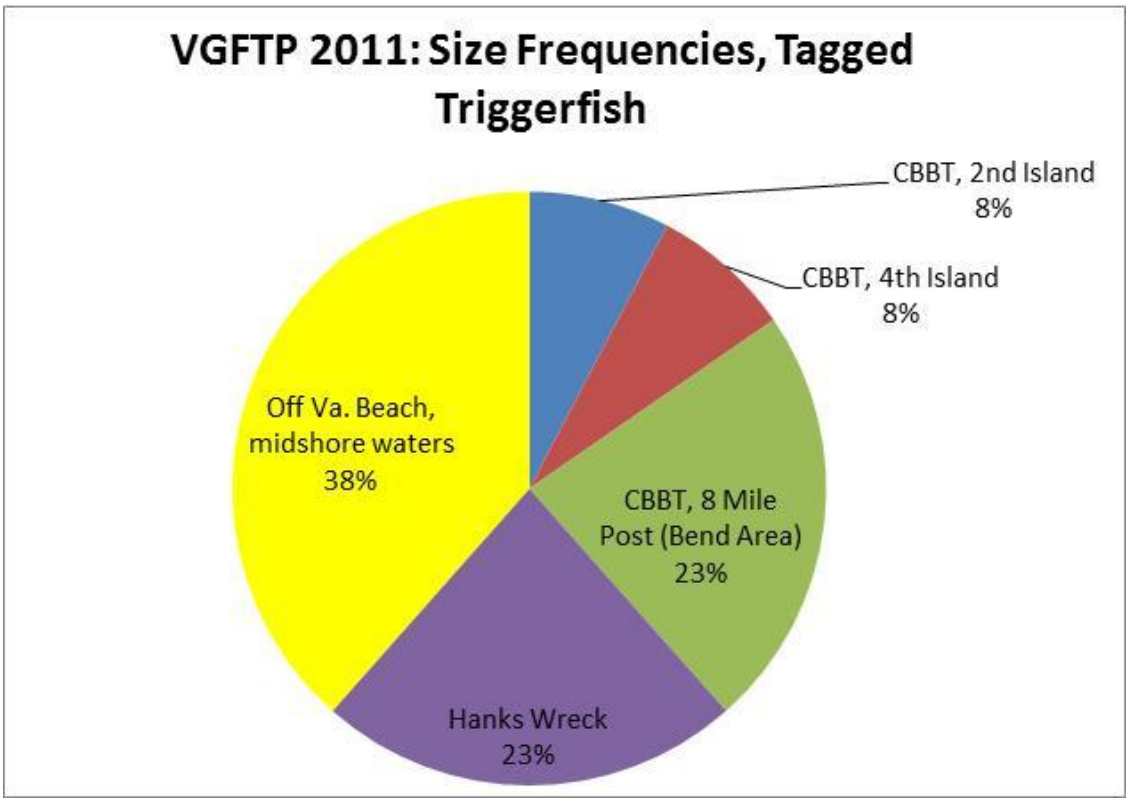
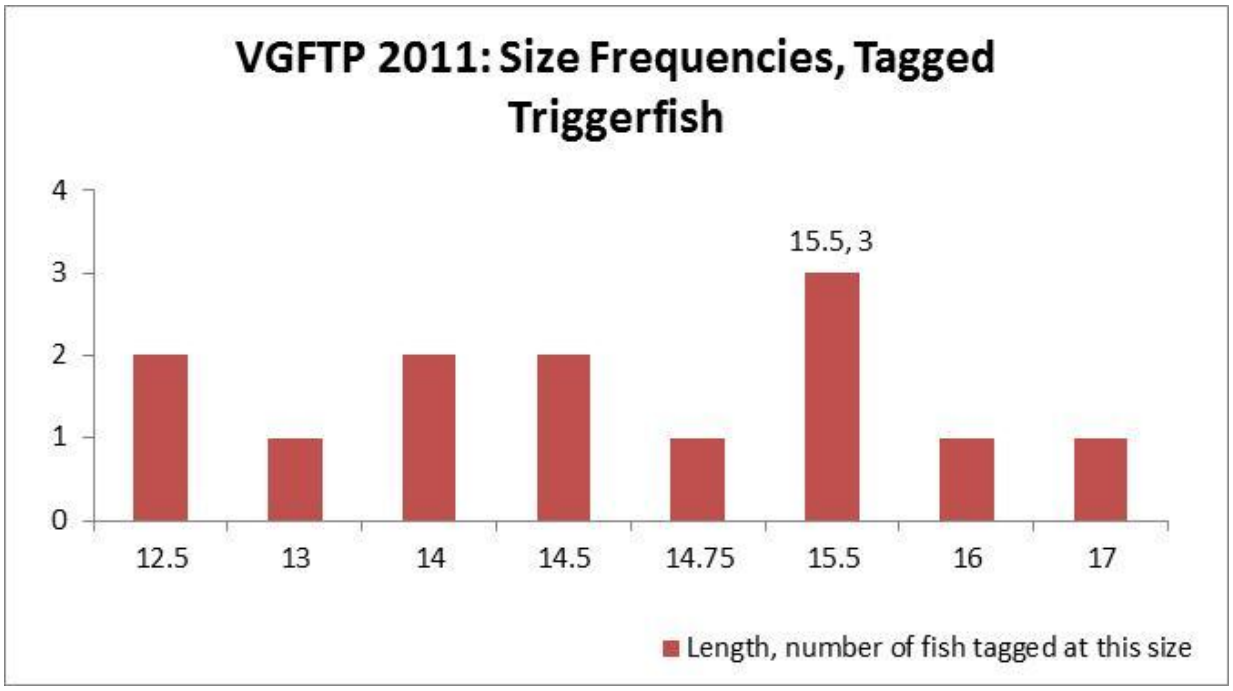
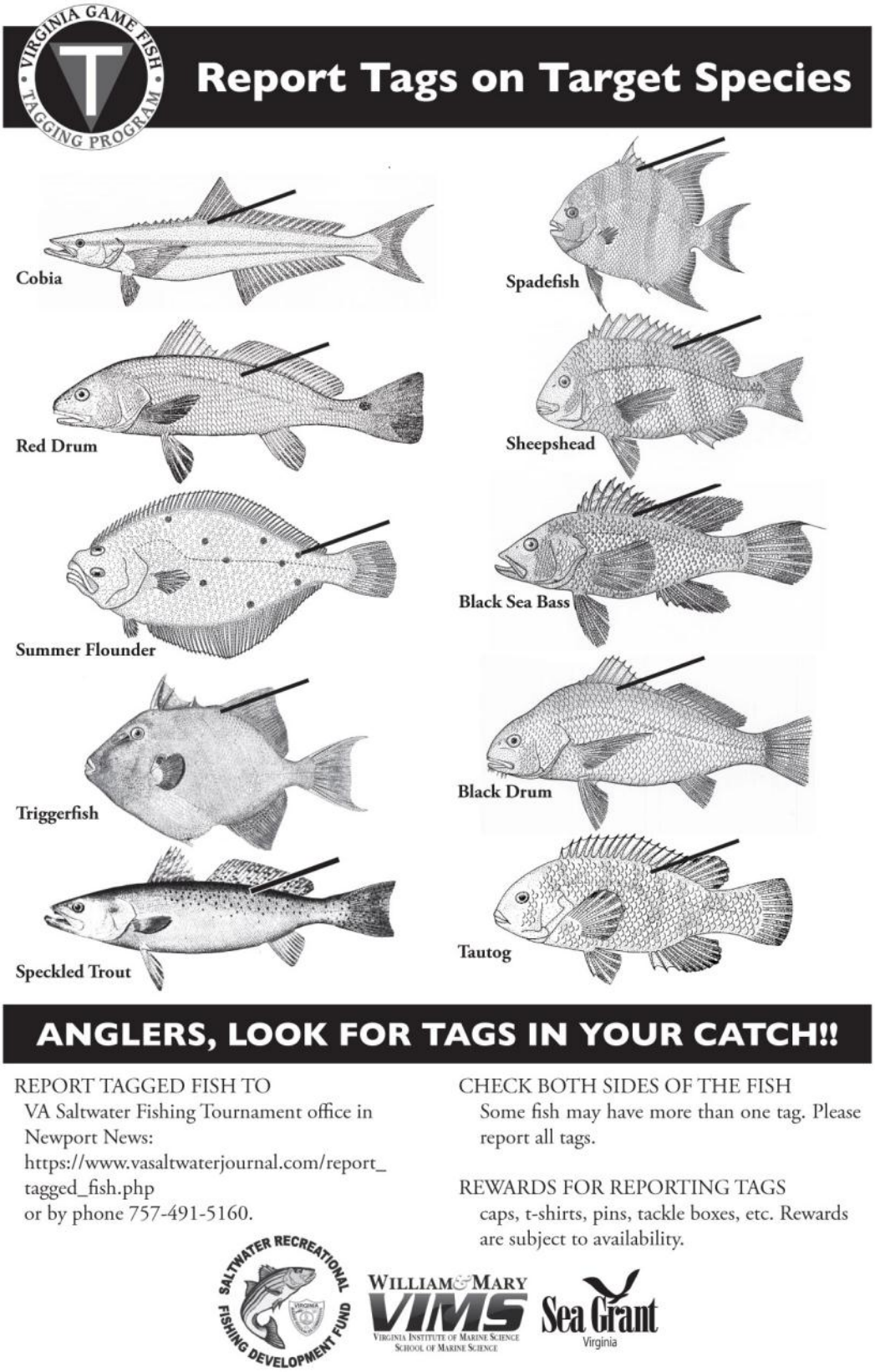


Figure 20. Triggerfish Tagging Size Frequencies



Appendix A:

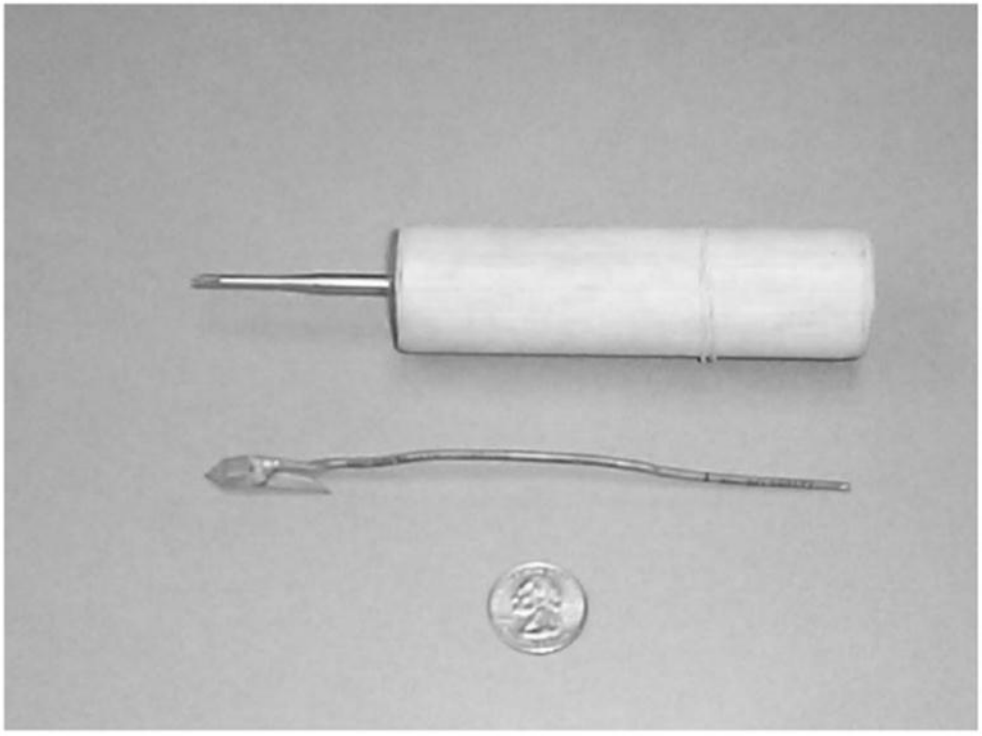
Tagging Program Target Species Poster



Appendix B:

2011 Tagging Program Equipment

Tagging Gun and T-Bar Tags (top photo); Stainless Steel Dart Tag and Applicator (bottom photo)
(Note: coin for scale – 0.75 inches diameter)



Appendix C:

2011 Tag Recaptures by Species

1. Multiple recaptures are distinguished for individual fish by the records having IDENTICAL Tag Numbers and Tag Dates.
2. Multiple recaptures are listed in sequential order, with the most recent recapture listed first on the Tag Number column. Multiple recaptures often document the location of the fish over two different or distinct times. However, two (or more) recaptures of the same tagged fish can occur on the same day and even the same location. These types of events document good tagging and release survival rates for the species.
3. Multiple recapture data provide especially valuable information. This information can only be recorded when anglers write down and report the tag number as soon as possible, then release the fish with the tag still in place.