

VIRGINIA RECREATIONAL FISHING DEVELOPMENT FUND
PROJECT APPLICATION

NAME AND ADDRESS OF APPLICANT Virginia Institute of Marine Science P.O. Box 1346 Gloucester Point, VA 23062-1346	PRINCIPAL INVESTIGATORS Jon Lucy, VIMS Marine Adv. Services Lewis Gillingham, VA Saltwater Fishing Tournament., VMRC
PRIORITY AREA OF CONCERN Recreational Fisheries Research and Education	PROJECT LOCATION VIMS and VSFT-Virginia Beach; lower Chesapeake Bay and VA offshore waters
DESCRIPTIVE TITLE OF PROJECT Virginia Game Fish Tagging Program 2009	

PROJECT SUMMARY

Initiated in 1995, primarily funded by Saltwater Recreational Fishing License Funds and matching VIMS funds, this project is a cooperative program of the Virginia Saltwater Fishing Tournament (Marine Resources Commission) and VIMS Sea Grant Marine Advisory Program. Annually training anglers via a series of coastal workshops, the program enables a corps of 100-200 experienced anglers to direct tagging effort on select target species important to VA's marine recreational fisheries, (a value of over one billion dollars annually). As of 2007 database records (used by researchers, fishery managers, anglers, etc.) include 104800 tagged fish/fish length records and over 12,700 fish recapture records (a 9% recapture rate as of 2007). Target species are: black and red drum, black sea bass, cobia, flounder, gray triggerfish, sheepshead, spadefish, speckled trout, and tautog. Striped bass is not tagged, such work in VA accomplished by VIMS in cooperation with USFWS/state coast-wide tagging program. During 2006 and 2007, trained anglers tagged and released approximately 16,300 and 18,400 fish, respectively, and nearly 1,900 and 2,300 recaptures, respectively, were added to the database. Tagging continues at two power plant areas during fall-winter-early spring in cooperation with Dominion Power as the plant areas serve as "warm-water havens" in particular for red drum and speckled trout. The program database is regularly used by staff and fishery technical committees with VMRC, the ASMFC, and MAFMC. Tag-recapture data is shared between VA and NC, and researchers from each state co-author presentations at scientific meetings. Program results are documenting both expected, and unexpected, movement and habitat use patterns of target species. Target species either spawn in the lower Bay, or in offshore-nearshore waters of VA-NC, using Virginia waters as nursery/feeding grounds. Tagging data on tautog, black sea bass, tautog, and flounder have been specifically requested for use in FMPs (fishery management plan development and plan updates). Tag-recapture data for cobia show sexually mature fish return consistently returning to the bay over periods of 1-5 years after tagged in the bay. Tagging annually shows large numbers of flounder, red drum, and speckled trout inside Rudee Inlet, a heavy use area. Tagging results on sub-legal flounder continue documenting close association with structure-based habitats in the bay (fishing piers, artificial reefs, bridge-tunnel areas, etc.). This VA pattern is supported by acoustic tracking of flounder in a small NJ coastal river. Building on the tagging data, for 2006-2007 VIMS conducted a flounder acoustic tracking study of 3 sites in York River and mid bay waters. Flounder "site fidelity" and movement at, and among, the sites is more complex than anticipated.

EXPECTED BENEFITS

Provide data on local fish movement and seasonal migrations, data previously unavailable on tagging program target species all of which are important to VA's marine recreational fisheries. In the case of flounder, the Game Fish Tagging Program has collected more data on flounder movement and habitat use than possible in VIMS tagging studies in the mid-1980s and early 1990s. The "new" data basically support VIMS's conclusions. Of use to fishery managers, tagged fish size data annually document fish year classes supporting VA fisheries, data collected by anglers on the fishing grounds. Tag-recapture data demonstrate surprisingly rapid seasonal movements of some species between VA and NC waters. Data document overwintering of large numbers of speckled trout and red drum in at least two power plant areas, and possible retention of these species in Rudee Inlet during mild winters. The heavy boat-traffic areas of Rudee are being documented as major habitat and forage areas over multiple years for flounder, speckled trout, and red drum. Tagging results can be used by researchers and fishery managers to document numbers and sizes of species released under fishery regulations in the VA fishery. The data will help improve management of Virginia's fisheries. Through the program, information on fish movement and habitat use patterns in Virginia waters continues to improve. It reaches the angling community through talks to fishing clubs and VIMS web site, but more importantly through trained angler taggers spreading results across the angling community. The program also provides the angling community an educational and fisheries conservation experience regarding benefits to Virginia's marine recreational fisheries from carefully releasing fish as directed by fishery regulations. Results of the tagging program show anglers first hand that significant numbers of released catches survive and can be caught again for improved angling experiences.

COSTS

VMRC Funding: \$ 61,040 (VIMS portion) + \$25,658 (VMRC portion) = \$86,698
VIMS Funding: \$ 22,756
Total Cost : \$ 83,796 (VIMS portion) + \$25,658 (VMRC portion) = \$109,454

Detailed budget included with proposal

Budget (follows as a separate page)

**Virginia Game Fish Tagging Program
Virginia Institute of Marine
Science
Proposed Budget for January 1, 2009 to December 31, 2009**

<u>BUDGET CATEGORY</u>	<u>DIRECT</u>	<u>MATCH</u>
I. Salaries		
a. Jon Lucy, Co-PI 1.5 mm/1 mm	\$ 9,954	\$ 6,636
\$79,631 Per Year		
\$6,636 Per Month		
b. Data Technician, TBN 2.5 mm	\$ 7,188	\$ -
\$34,503 Per Year		
\$2,875 Per Month		
Subtotal	\$ 17,142	\$ 6,636
II. Fringe Benefits (35%)	<u>\$ 6,000</u>	<u>\$ 2,323</u>
Total Salaries and Fringe Benefits	\$ 23,142	\$ 8,958
III. Publications (Annual Report, Website/Recapture Updates)	\$ 2,000	
IV. Travel (Local travel for field work, Tagging work group meetings, presentations at scientific meetings and association clubs.)	\$ 4,000	
V. Supplies	\$ 19,690	
25,000 T-Bar Tags @\$605/1,000*	\$ 15,125	
1,000 Plastic Dart Tags @0.77	\$ 770	
1,000 Steel Dart Tags @\$1.98	\$ 1,980	
50 Tagging Guns @\$30	\$ 1,500	
35 Tagging Needles @\$3	\$ 105	
35 Measuring Boards @\$6	<u>\$ 210</u>	
Subtotal	\$ 19,690	
VI. Total Direct Costs	\$ 48,832	\$ 8,958
VII. Indirect Costs - 25% VMRC	\$ 12,208	
Indirect Costs - 45% on Match		\$ 4,031
Indirect Costs - 20% from Direct		9,766
VIII. TOTAL PROJECT COSTS	\$ 61,040	\$ 22,756

Virginia Game Fish Tagging Program

Budget – 2009

VMRC Portion

The VMRC portion of the budget is broken down into tagging awards (53.6%), postage and shipping (36.9%), shipping supplies (3.8%) and travel (5.7 %).

Tagging awards consist primarily of rewards sent to the general public for reporting tag recapture information. The number of reported recaptured fish in any given year correlates to the number of fish tagged in that year but is also influenced by the number of fish tagged the prior year. The years 2006 and 2007 were record-setting years; both in terms of numbers of fish tagged and the reported number of recaptured fish (refer the attached pdf file, particularly the last column titled “total”). For the first time in any year, the number of active volunteer taggers in 2008 has exceeded 200. Therefore, the total number of fish tagged, and resulting number of reported recaptures, is expected to continue to increase. To cover the expected increase in recaptures, the number of each reward item has been increased by 20% for the 2009 budget. However, with the exception of the tagging decals, the price of each individual award is expected to remain the same as in 2008.

Postage and shipping costs are projected to increase 20% due to the additional number of awards shipped. Additionally, UPS and U.S. postal base rates have increased, and it is expected a fuel surcharge will be added on top of the base rate increase each month. To project the postage and shipping costs for 2009, the base number was increased by 20% (to cover the additional rewards) and then 10% was added (this is intended account for the base rate increase of 5% and cover fuel surcharges).

The 2009 budget request for mailing supplies was increased by 20% to cover the projected increased number of rewards.

Travel expenditures are expected to remain at or below the prior year.

Tagging Awards

720 Hats @ \$6.50 each	4680
720 T-Shirts @ \$6.50 each	4680
180 Pewter Fish Pins @3.00 each	540
1200 Decals @ .85 each	1020
600 Digital Stickers @ 1.75 each	1050
360 Tackle Organizers @ 2.50 each	900
12 Tag Plaques @ \$14 each	168
Conservation Certificates	500
Data Sheets and Cards	<u>600</u>
	14138

Postage and Shipping

U. S. Postage	1560
UPS Shipping	<u>7800</u>
	9360

<u>Supplies (Paper, Envelopes, Mailers, Tape, Bubble Wrap etc.)</u>	960
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<u>Travel</u>	1200
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<u>Total</u>		\$25,658
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Game Fish Tagging Program
 Virginia Marine Resources Commission
 Virginia Institute of Marine Sciences
Recaptures / Tagged by Year and Species Report



Print Date: June 13, 2008, 11:31 am

Year	Black Drum	Black Sea Bass	Cobia	Flounder	Grey Trout	Red Drum	Sheeps Head	Spade Fish	Speckled Trout	Striped Bass	Tautog	Trigger Fish	Total
2008	1 / 99	13 / 311	5 / 2	132 / 2062	0 / 13	206 / 626	0 / 7	2 / 23	50 / 540	0 / 0	86 / 454	0 / 0	495 / 4137
2007	36 / 546	290 / 1875	13 / 60	1044 / 8616	0 / 7	511 / 3358	41 / 229	73 / 433	60 / 2927	0 / 0	238 / 964	47 / 262	2353 / 19278
2006	28 / 288	260 / 1268	26 / 187	791 / 6218	1 / 1	361 / 4153	0 / 176	28 / 221	51 / 1953	0 / 1	309 / 2081	32 / 79	1925 / 16629
2005	4 / 205	107 / 686	4 / 98	621 / 6123	0 / 0	42 / 794	3 / 185	21 / 173	29 / 1149	1 / 2	133 / 822	4 / 23	974 / 10260
2004	5 / 232	70 / 1012	5 / 184	648 / 7286	0 / 0	23 / 503	27 / 274	43 / 299	26 / 990	0 / 1	119 / 1221	41 / 193	1016 / 12195
2003	5 / 176	88 / 922	11 / 14	397 / 3704	1 / 0	339 / 2270	0 / 6	26 / 236	8 / 361	0 / 0	59 / 497	12 / 31	964 / 8219
2002	15 / 188	231 / 1732	15 / 63	317 / 3566	0 / 0	193 / 2752	1 / 10	55 / 470	23 / 1247	0 / 0	129 / 653	23 / 56	1053 / 10741
2001	4 / 395	280 / 1913	19 / 87	636 / 6880	0 / 0	27 / 295	1 / 7	49 / 553	13 / 486	0 / 6	149 / 951	2 / 14	1215 / 11605
2000	5 / 109	294 / 2008	10 / 65	161 / 2603	0 / 6	173 / 1124	1 / 12	60 / 523	11 / 362	1 / 3	156 / 713	0 / 0	913 / 7528
1999	7 / 90	384 / 2139	16 / 59	4 / 4	25 / 1512	135 / 1073	0 / 0	25 / 233	16 / 521	2 / 11	356 / 1923	0 / 0	1000 / 7572
1998	8 / 196	455 / 2655	13 / 73	3 / 28	26 / 2937	92 / 551	0 / 0	38 / 476	29 / 495	0 / 2	226 / 1347	0 / 0	907 / 8763
1997	2 / 72	48 / 592	9 / 108	2 / 38	17 / 2503	44 / 438	0 / 0	36 / 547	12 / 440	0 / 12	77 / 914	0 / 0	250 / 5665
1996	3 / 85	0 / 0	9 / 75	0 / 6	4 / 2194	4 / 92	0 / 0	8 / 189	4 / 409	0 / 1	74 / 543	0 / 0	106 / 3595
1995	37 / 200	0 / 0	2 / 50	0 / 3	0 / 0	2 / 66	0 / 0	25 / 193	14 / 601	0 / 1	30 / 260	0 / 0	110 / 1375

Virginia Game Fish Tagging Program (2009)

January 1, 2009 to December 31, 2009

Proposal Submitted to:

**Virginia Recreational Fishing Development Fund
Virginia Marine Resources Commission
2600 Washington Avenue, Third Floor
Newport News, Virginia 23607**

Proposal Submitted by:

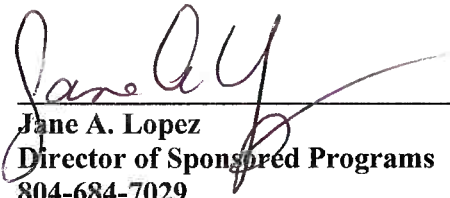
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June 13, 2008

Virginia Game Fish Tagging Program (VGFTP) Proposal (2009)

Overview

Initiated in 1995, the Virginia Game Fish Tagging Program (VGFTP) coordinates a fish tagging and fish tag-recapture database generated through contributed efforts of a dedicated corps of trained marine anglers. The program was conducted cooperatively from 1995 through September 2007 between Claude Bain, now retired Director of the Virginia Saltwater Fishing Tournament (VSFT) under VMRC, and Jon Lucy of VIMS Marine Advisory Program. Since the latter part of 2007, the joint effort continues under the direction of Mr. Lucy and Lewis Gillingham, the new VSFT Director. This proposal is seeking to continue funding for the project through 2009.

Significant matching funds are provided by the Virginia Institute of Marine Science of the College of William and Mary. There is also additional administrative support provided by the Virginia Sea Grant Program, a federal funding source (National Oceanic and Atmospheric Administration-NOAA) of major significance to VIMS as part of the broader Virginia Sea Grant Marine Advisory Program.

Program responsibilities are shared, taking advantage of the respective organizations' communication links with the marine recreational angling community and strengths in data handling-analysis and graphics-publication production. For example, the VSFT's Virginia Beach location and its regular contact with marinas, tackle shops, and anglers through the citation program makes it the natural partner for receiving and keying tagged and recaptured fish data. Tags, tagging needles, etc. are regularly mailed to taggers and records maintained regarding tag-number series individual taggers have. Tag-recapture reports are sent by the office to both to taggers and persons reporting tagged fish, and appropriate reward items (hats, T-shirts, etc..) mailed to persons phoning in recaptured fish reports. Database files are maintained and updated at the office, then forwarded to VIMS. As of late 2007 the database was moved and is now maintained on a server at VMRC's office in Newport News.

At VIMS, tagged fish data and tag-recapture data records are checked for possible inconsistencies or errors, then summarized and analyzed for production of annual reports (hard copies and web-based formats). Text, graphics, and data files are maintained and updated in user-friendly formats for both to anglers as well as fishery researchers and managers. Graphics illustrating fish movement and habitat use patterns are developed for a variety of educational programming (VIMS Marine Science Day, "Kids Fishing Clinics," science teachers' courses, and public presentations, i.e. to angling clubs and civic groups, etc.). Data and graphics also are organized in appropriate formats for the annual series of Tagging Training Workshops, for posters alerting anglers to report tagged fish, and for presentations at regional and national scientific conferences. Ordering of tags and tagging equipment, and construction of measuring boards, is handled by VIMS.

The Institute also periodically conducts tag retention field trials, primarily to determine whether changes are warranted in the type of tag used for specific species. Also depending upon the range in size of fish, certain tags are more appropriate for “small” fish specimens (like the 2.5 inch/63 mm T-bar tag used with “tagging gun” applicators) versus large “adult” fish. For example, the T-bar tag is appropriate for juvenile black and red drum, and juvenile cobia, up to about 26-28 inches total length (660-711 mm TL). However, as these fish grow up to 50+ inches TL (1,270 mm TL), once over about 28 inches TL the smaller T-bar tag is not the most effective nor visible tag for larger specimens of these species. Therefore, the program uses a 6.25 inch (159 mm) long stainless steel dart tag (with wire core sheath) in such specimens.

Target species for 2002-2007 are listed below. Summer flounder replaced weakfish in 2000 as significant tagging effort on the latter species never produced greater than a one percent recapture reporting rate (tank-based tag retention trials indicated high tag loss rates over 2-4 week periods).

Black Drum	<i>Pogonias cromis</i>
Black Sea Bas	<i>Centropristis striata</i>
Cobia	<i>Rachycentron canadum</i>
Summer Flounder	<i>Paralichthys dentatus</i>
Gray Triggerfish	<i>Balistes capriscus</i>
Red Drum	<i>Sciaenops ocellatus</i>
Sheepshead	<i>Archosargus probatocephalus</i>
Spadefish	<i>Chaetodipterus faber</i>
Speckled Trout	<i>Cynoscion nebulosus</i>
Tautog	<i>Tautoga onitis</i>

Through 2007, the program’s database includes over 140,000 tagged fish records and approximately 12,700 recapture records (Table 1). The database helps to document within year, and year-to-year habitat utilization and movement patterns of carefully selected target species in Virginia waters. In addition, the program documents significant coastwise migrations for certain species.

The program’s data are of interest both to the angling community as well as to fishery researchers and managers. The number and size distribution of target fish tagged each year are of special interest to fishery managers as such data provide useful indicators of the mix of year classes sustaining top ranked recreational fisheries and the relative size distribution of fish being released in the fishery under ever-changing size and bag limit management regulations.

The program maintains a corps of experienced, trained angler-taggers who can capitalize on opportunities to focus significant tagging effort on key species which often suddenly exhibit high levels of abundance during any given fishing season. While contributing significantly to the rebuilding and sustaining of specific fisheries comprising Virginia’s one billion dollar marine recreational fishery, such events take on greater value when tagging documents sizes and relative numbers of recreationally-targeted fish occurring in state waters, and the habitats they utilize year to year.

In recent years the program has maintained its team of trained angler taggers at approximately 100-125 active individuals. This level of participation keeps the program manageable and generally produces useful data on the number and size distribution of fish tagged, as well as a valuable time series of tag-recapture data for the species targeted. Due to increasing angler interest in the program, the winter 2008 series of annual tagging training workshops resulted in 72 new taggers, bringing the number of active participants to just over 200 for the first time in the program's 14 year history.

Examples follow to illustrate what the program is accomplishing. Through the combined effort of trained anglers tagging select target species across major popular fishing areas in Virginia bay and offshore waters, hard data are being acquired on (1) how and when species seasonally important to Virginia's coastal anglers use local waters, (2) juvenile and adult fishes' long-term habitat preferences while in state waters, and (3) defining waters and fish habitats beyond Virginia's borders important to sustaining fish populations on which the state's marine angling fishery depends.

- Flounder tagged in Chesapeake Bay and Chincoteague Inlet waters consistently demonstrate that of fish tagged one year the majority of recaptures within the tagging year show the flounder (mostly fish from 12-13 inches to 18 inches or "sub-legal fish") remain associated fairly closely with their original tagging sites. This is particularly the case for flounder tagged at fishing piers, rock jetties, and structure sites such as artificial reefs, shipwrecks, and bridge-tunnel complexes. In the year following being tagged, a majority of the tagged fish typically return to (and/or over-winter) in Virginia's estuarine, bay or nearshore waters where they were initially tagged. However, approximately 1-3% of such fish are recaptured/reported as having migrated away from Virginia's bay and Eastern Shore seaside waters, being reported by trawlers (or sometimes fish houses buying trawl boat catches) which show the expected pattern of Virginia tagged flounder moving out onto the shelf offshore Virginia-North Carolina as well as to shelf waters off Delaware to Rhode Island. In addition, anglers capitalizing on spring-early summer runs of flounder also reported Virginia tagged flounder from North Carolina beaches/sounds to inlets-bays-sounds extending from New Jersey north to Long Island Sound.
- Adult cobia tagged inside the bay continue to be recaptured occasionally months to years post tagging outside the bay either off North Carolina's Outer Banks beaches/inlets or along Florida's east coast. Interestingly there have yet to be any tagged cobia recaptures reported from either South Carolina or Georgia waters. Of greater significance, since the program's beginning years of 1995-1996, adult cobia, tagged inside the lower bay, have been documented returning again to the bay after periods of 1-5 years from the time they were tagged.

- During 1999, 2000, 2002, 2003, 2006, and 2007, significant year-classes of juvenile and sub-adult red drum have been documented to contribute significantly to Virginia's marine recreational fishery. Good numbers of adult fish have also entered Virginia's fishery in more recent years, these especially true in 2007. During recent years characterized by milder winters, Rudee Inlet waters on the Virginia Beach oceanfront appear to have held over-wintering sub-adult drum, i.e., fish were tagged there on January 1, 2006, and from mid-November through late December 2006. However, in fall 2006 sub-adult red drum were scarce in Rudee waters, and this situation continued until fish showed enough for some reasonable tagging effort during spring 2007.
- The contribution of strong year classes of speckled trout to the recreational fishery has likewise been confirmed by tagging efforts during 1995, 1999, 2002, and 2004-2006, and 2007. As with sub-adult red drum, speckled trout over-wintered in the area of lower bay power plants during both cold and mild winters. From December 2007 through March 2008 the Elizabeth River Hot Ditch area provided one of the best speckled trout tagging opportunities in years. In January 2006 large concentrations of speckled trout were tagged associated with the Hampton Roads Bridge Tunnel where surface water temperatures ranged from 46-50 F. However, during fall 2007 into January 2008, the occurrence of adult trout in the same area was inconsistent. As a result tagging of trout was much reduced in that area.
- With Chesapeake Bay largely the northern range of significant angling fisheries for red drum and speckled trout, rather discrete, episodic fall migrations of Virginia-tagged fish occur to North Carolina waters with numerous fish moving distances of 30 to 200+ miles in 3-90 days post tagging, i.e., such fish therefore are covering estimated "straight-line distances" of 1-5 miles, even 6-15 miles per day.
- Through 2007 tagging effort on tautog in Virginia Bay and offshore waters has resulted in nearly 14,000 fish being tagged. From this effort has resulted over 2,100 recaptures have been reported. Tag-recapture results for tautog continue to document that the fish do not undergo consistent seasonal movements inshore in spring and offshore during fall-winter (the pattern in waters from New York to Rhode Island). More importantly, fish tagged in Virginia bay and offshore waters show no distinctive northward migration over time. Through 2007, only 0.1% of all tautog recaptures have occurred in waters north of the Virginia-Maryland border (were the border to be extended eastward through nearshore and continental shelf waters).

2007 Accomplishments Overview

Regarding tagging effort during 2007, just over 18,400 fish were tagged across ten target species, exceeding the record setting effort in 2006 (when 16,300 fish were tagged). The record number of fish tagged during 2007 also resulted in a record 2,300 recaptures. Anglers, charter captains and head boat mates, trained observers on trawlers, commercial fishers, fish packing-fish retail businesses, etc., all contributed to reporting tagged fish.

For a broader perspective over recent years, from 2005-2007 (Table 1) database records accounted for just over 10,000, 16,000, and 18,000 fish tagged, respectively (across ten target species). During the same period, recapture files matching tag event data numbered nearly 1,000, 1,900, and 2,300 records, respectively. Overall cumulative recapture rates for each of the three years range from about 9-10 %.

For the tagging program to accomplish its objectives, large numbers of fish have to be tagged at key fishing locations. During 2007 eighteen anglers tagged a total of 50-100 fish each, 19 anglers tagged 100-200 fish each, 14 anglers tagged 200-400 fish each, and 6 anglers tagged 500-750 fish each. Two especially dedicated anglers tagged over 4,300 and nearly 1,300 fish each, respectively. By the end of 2007, the program's database included over 140,800 tagged fish records and just over 12,700 recaptures of tagged fish, an overall cumulative reporting rate of 9%.

Training of Taggers

Tagging Training Workshops for new taggers were held at five different locations from late February through late March 2007 (VIMS-Gloucester Point campus, VIMS Eastern Shore-Wachapreague campus and Cheriton-two back to back workshops, Virginia Beach-Ocean East Tackle II, and Hampton-Bass Pro Shops host). Trained anglers active in the program during 2007, an annual requirement, had to notify program coordinators they wanted to continue with the program for 2008. This "re-registration" requirement serves two purposes. It allows those who might lose interest in tagging for whatever reasons to ease out of the program gracefully (we dropped 42 taggers from our roll for 2007). The process also provides guidance regarding how many new participants can be brought onboard during training workshops. From the five tagging training workshops we added 72 new taggers to the program (compared to about 35 in 2007 from four workshops). Training sessions in 2008 resulted in the highest participation level to date in the tagging program (208 anglers).

In addition to updates on program results, new taggers receive detailed instruction on recording and reporting tagged fish data including use of water-resistant data sheets. They also learn catching, handling, and hook-removal protocols required to minimize stress in fish. Experienced taggers also share their experiences on such issues and how to avoid mistakes in recording tag numbers and total lengths for fish tagged. New taggers also are walked through proper tagging techniques using the Hallprint T-bar tags (for fish from about 10-26 inches TL) and stainless steel dart tags (for larger specimens of drums and cobia), with experienced taggers weighing in on tagging techniques found especially workable, especially when catches come in rapidly. Once completing hands-on" tagging trials with freshly iced fish, new taggers receive a limited number of tags, a tagging gun (for T-bar tags) and/or tagging needle plus tagging stick (for stainless steel dart tags), measuring boards, and data sheets.

Database Use

Tagging results are periodically used by researchers and fishery managers to help quantify sizes of target species released under Virginia fishery regulations, data largely lacking from NOAA Fisheries' Marine Recreational Fisheries Statistical Survey. Regarding the tagging program's data on large red, drum, black drum, and cobia, this size distribution data enhance VIMS ChesMMap trawl survey aimed at sampling larger fish (compared to VIMS Juvenile Fish Trawl Survey). Information on fish movement and habitat use patterns in Virginia waters continues to improve. The angling community is particularly interested in within-season and season-to-season movement of fish tagged. Tag-recapture results spread

through the angling community through word of mouth, talks to fishing clubs, and visits to VIMS Game Fish Tagging Program web site. Reports of recaptured fish (and associated information on when and where the fish was tagged) are regularly sent both to taggers and anglers reporting tagged fish. Such reports help keep the angling community interested in the tagging program, including helping remind anglers to be on the lookout for tags on fish they catch. The reports also provide hard evidence to the angling community that catch and release conservation practices, whether voluntary or a result of fishing regulations, make for better fishing in the future.

Special Use of Program Data on Speckled Trout:

During summer 2007, a North Carolina Division of Marine Fisheries biologist (Ms. Beth Burns, Wanchese) requested to review the program's tag-recapture data on speckled trout (spotted seatrout) for a twelve year period (1995-2006). The state was planning to develop a Fishery Management Plan for the species, and the only known tagging data showing fish seasonally moving between North Carolina and Virginia was that of the Virginia Game Fish Tagging Program. Determining that year to year, approximately 15 % of trout tagged in Virginia waters were recaptured in North Carolina waters, the decision was made to include both Virginia and North Carolina waters in the geographical coverage of the management plan. Plans are now underway for a preliminary tagging study of spotted seatrout in North Carolina to be initiated in mid-summer 2008 which then will carry over into 2009.

Data Uses: Red Drum

Data on tagged red drum were requested by VMRC during spring 2007. The red drum data are being considered, along with much other data, for input into updating the species' stock assessment. Again in 2008, updated red drum data on tagged fish, and tag-recapture results, were requested from VMRC.

Data Uses-Ties to New Research: Summer Flounder

Given the obvious association of flounder to structure in the bay, it is important to clarify how flounder actually use structure-based habitat areas in the bay. If such areas provide long-term, seasonal aggregation areas for juvenile and adult fish, such areas could then be significant in contributing towards overall rebuilding of the flounder population in the mid-Atlantic region.

Building upon the flounder tagging program's data, VIMS initiated a study aimed at clarifying the interaction of flounder and structure-associate habitat areas ("Understanding Localized Movements and Habitat Associations of Summer Flounder in Chesapeake Bay Using Passive Acoustic Arrays"). Currently data are being analyzed from buoyed hydrophones tracking flounder movement from June 2006 through late March 2007 at three sites (Gloucester Point Fishing Pier, Back River Artificial Reef, and a non-structure area at York Spit off the mouth of the York River). Surgically implanted with small acoustic transmitters, 120 legal and sub-legal flounder, equally divided among the three sites, have now been documented to exhibit rather complex movements in the vicinity of, and among the study sites. The preliminary results of this project were compared with the tagging program's results from the Gloucester Point Fishing Pier in a poster presentation for the American Fisheries Society's Annual Meeting in September 2007.

Tag Retention Concerns in Speckled Trout and Red Drum

For example, after changing from smaller dart tags to larger, stainless steel dart tags in large drum, recaptures reports dramatically improved. We are continuing to conduct field trials to examine tag loss concerns in adult speckled trout and juvenile and sub-adult red drum by double-tagging fish with various combinations of dart, T-bar, and internal anchor tags.

Some positive results may be slowly developing from the effort with speckled trout. Of the 86 double-tagged trout from 2005, seven recaptures have been reported to date (4 during 2005 and 3 more in 2006). Compared to the typical 3% recapture reporting rate for single-tagged trout tagged during 2005, the double-tagged fish are showing a recapture reporting rate of 8%. Of course the slight improvement to date could be due to nothing more than fish with two tags are more likely to be seen and reported than fish with only a single tag. Also, in the angling community a “double-tagged fish might be considered “more important to report” and/or likely to result in a better reward than a single-tagged fish. So far, only 3 of the 136 double-tagged trout from 2006 have been recaptured, a reporting rate of 2.2%. Results from 2007 are still being examined. Some inconsistencies in entering double tagged fish tagging data and in recapture record details for double-tagged fish are being sorted out. The difficulties with recaptured fish data are largely due to anglers not always noticing whether a second tag may be in a fish. In addition, when anglers call in recaptured fish reports over weekends, they must leave detailed catch information on the Virginia Beach office’s voice mail system. Such information is not always as clear as would be desired, and it can be difficult, or impossible (if no contact phone number is given), to follow up with such anglers regarding the status of tags in the case of a double tagged fish recapture event.

Sheepshead: T-Bar Tags Not Adequate for Species

The T-bar tag, the primary tag used for all small to medium size target species, is not producing recapture results in sheepshead. Plans continue to replace it with a single barb, plastic tip dart tag during 2008. In 2006 just over 150 sheepshead (18-22 inches total length) were tagged at the Chesapeake Bay Bridge Tunnel. With repetitive fishing and tagging occurring in much the same area, no recaptures occurred. This indicates the T-bar tags are possibly being abraded against barnacle-encrusted structure or in some other way being lost from the fish. Consulting with our tag manufacturer, Hallprint, the indicated dart tag has produce recapture results elsewhere in Sparidae (porgy) species. Therefore a version of the dart tag will be tried on the species. Unfortunately the fishery developed relatively poorly during 2007 so there were few opportunities for taggers to try new types of dart tags acquired. Hopefully 2008 will turn out better regarding trying different tags in this species.

Database Revamping

Still in its original format since 1995 (FileMaker Pro), the database began experiencing serious problems in summer-early fall 2007. Unexplained crashes of the database began occurring, causing numerous problems, i.e., loss data having to be re-entered, delays in reporting tag-recapture results to anglers, etc. With the assistance of Mr. Todd Sperling of VMRC, the database was reformatted (CSV format) and placed on a server at VMRC in Newport News where it is maintained and backed up on a regular basis. Data entry screens were changed for more efficient keying of data, and the Virginia Beach office began operating as a “satellite location” for data entry. Tag-recapture reports were streamlined, and several basic data summary reports were programmed for quick retrieval. Mr. Sperling continues to make

improvements in the database resulting in more efficient data entry. The Database is being designed with the ultimate goal of allowing taggers, who meet avidity and computer-literacy skills, to directly enter their own tagging data much like VMRC's online Fishermen's Log (Mr. Sperling was primarily the lead designer on this project).

Experimental trials are also underway setting VIMS up as a satellite data entry location. Since March 2008 VIMS Marine Advisory Services staff have become more proficient at entering tagged fish data. Once these trials are completed and bugs worked out of the system, then the program wants to experiment with having select taggers access the database to both enter tagged fish data and to be able to review their tagged fish records. The key to success in this area is to maintain strict adherence to taggers being assigned specific tag number series, taggers' tag number series then being the key to accessing the database.

Accomplishments-General and Species Highlights (2007)

Regarding the program's trained angler taggers, about 80-90 individuals were responsible for the vast majority of the 18,000+ fish tagged during 2007. Table 2 displays the accomplishments of these anglers by species tagged and their respective tagged fish totals for the year. Forty-six additional taggers also contributed to the tagging effort but at a lower level (tagging 1-24 fish each). These totals are preliminary for now. Table 3 displays the recapture results by species associated with each angler's tagging effort whereby respective taggers had five or more recaptures occurring during the year.

Awards for outstanding tagging accomplishments (Top Tagger by Species, Most Tagged Fish, and Most Recaptured Fish) are made annually. The first place winners for 2007, and the runners up, are listed in Table 4. The first place awards were presented at the Bass Pro Shops Spring Fishing Classic (February 29-March 2, 2008) in Hampton. In addition, Bass Pro Shops provided mixed fishing tackle promotion packages to runners-up in each category. In Table 5, top tagging award winners for 2005-2007 are listed. Some continuity exists whereby certain taggers take the top tagger award across multiple years. However, changes also occur from year to year. Several "new" names appear in the 2007 awards listing, i.e., Mr. Dan Peters for top spadefish tagger and Captain Ed Lawrence for top speckled trout tagger.

Notes of Interest by Species

Compared to 2006, during 2007 increases in numbers of tagged fish occurred for black drum, black sea bass, flounder, gray triggerfish, sheepshead (nearly all juvenile fish at the Yorktown Power Plant warm-water discharge canal), spadefish, and speckled trout. Compared to 2006, declines in tagged fish numbers occurred for cobia, red drum, and tautog.

1). Black Drum: At the invitation of organizers of the First World Black Drum Fishing Tournament, held in May 2007 at Cape Charles, tagging program coordinators experimented with a brief afternoon tagging training program for interested captains the day before fishing began. While a number of boat captains participated in the training (using large, stainless steel dart tags designated for large drum and cobia), only a few fish were ultimately caught during the tournament. Therefore only a few large drum were tagged at the event. Two of the tournament tagged fish were recaptured in less than two weeks of tagging, one being killed and the other released without its tag. The remaining recaptures of tagged black drum represented juvenile fish tagged at the Yorktown Power Station during fall-early winter 2007.

Most juvenile black drum tagged at the power plant canal were recaptured within 1-40 days post tagging. Some multiple recaptures also occurred at the canal. Interestingly, two juvenile black drum tagged during October 2007 in the canal moved out of the canal, being recaptured in at Kitty Hawk, NC and in the Neuse River, NC. Unrelated to the canal drum tagging, a juvenile black drum tagged during October 2007 in the Sandbridge surf was recaptured at Nags Head, NC, only five days post tagging.

2). Black Sea Bass: the majority of tagging occurred at the Chesapeake Bay Bridge Tunnel (CBBT), Back River Reef, Gloucester Point Fishing Pier, York River Coast Guard Pier, in Lynnhaven Inlet area waters, and at several lower bay and nearshore wrecks. Most recaptures occurred at the tagging location within 2-8 weeks post tagging. Some multiple recaptures occurred. From tagging during 2006 at the Sea Gull Fishing Pier (CBBT first island), approximately 10 recaptures of sea bass occurred at the bridge-tunnel's third and fourth islands during 2007, nearly one year post tagging. A sea bass tagged during 2006 at the fishing pier also was also recaptured at a wreck off Ocean City, MD, during 2007.

3). Cobia: As in past years, while only 12 cobia recaptures were reported, they again showed the consistent pattern whereby tagged adult fish return to lower Chesapeake Bay from 1-3 years post tagging. Of cobia tagged inside the bay during 2004-2006, and recaptured during 2007, nearly all were recaptured again in the lower bay. A 53 inch TL cobia tagged in 2005 in the lower bay (Baltimore Channel Buoys) was recaptured in summer 2007 off Cape Lookout, NC. Three cobia recaptured during 2007 had been gut-hooked when caught and tagged. However, the leaders were cut to take stress off the hooks in the fish and to reduce additional damage from trying to remove the hooks. Such practices have been demonstrated in hook-release mortality studies to sometimes result such hooks falling out of the fish's oral cavity. Program tag-recapture data on cobia have demonstrated numerous times that handling the fish this way can result in recapture of a gut-hooked fish one or more years post tagging.

4) Flounder: The majority of flounder tagging took place during 2007 at the usual locations, i.e., CBBT islands, Hampton Roads Bridge Tunnel-Off Willoughby Spit, Lynnhaven waters, Rudee Inlet waters, Lower York River (Gloucester Pt. Fishing Pier, York River Coast Guard Pier), and in protected waters associated with the Chincoteague-Assateague channels. At many of these locations there were some flounder tagged during 2006 which were then recaptured in the same general area during 2007. However, most recaptures occurred within the tagging year approximately 5-60 days post tagging. Tagging at the Gloucester Point Fishing Pier resulted mostly in short-term recaptures at the pier, including some multiple recaptures. But a few flounder tagged at the pier moved significant distances into the bay, as well as moving offshore (a pier tagged flounder was recaptured at Charleston Beach, RI. and another off Sandy Hook, NJ.) A flounder tagged in 2006 in the Ware River (Mobjack Bay) was recaptured in 2007 at Gargathy Inlet (mid-way along the seaside of the Eastern Shore). As in past years, some other long-distance seasonal movements were noted. Several flounder tagged in the Chincoteague Channel area were recaptured at Indian River, DE and off Pt. Judith, RI. Flounder tagged at the Chesapeake Bay Bridge Tunnel resulted in some recaptures off Ocean City, MD and off Rhode Island (fish tagged in 2005, recaptured in 2007). In both Lynnhaven and Rudee Inlets, some flounder tagged in 2006 were again recaptured in the same general area during 2007. However most 2007 recaptures inside these two inlets were fish still found there 5-50 days post tagging.

5) Gray Triggerfish: Most tagging occurred at the Chesapeake Light Tower, at wrecks in the Cape Henry area, and around the CBBT third island. A few triggerfish were tagged and recaptured at the Back

River Reef. All recaptures occurred within the year, typically within 7-40 days post tagging at the general location where the fish were initially tagged.

6) Red Drum: Seven adult red drum (32-50 inches TL) were recaptured during 2007. Four of these fish were tagged in 2005 of which three were recaptured in NC waters. The remaining one was recaptured at Smith Island Inlet. Of two adult drum tagged during 2006, one was recaptured off Smith Island, the other recaptured in the vicinity of Ocracoke Inlet, NC. A sub-adult (26 inch TL) drum tagged in Rudee Inlet during 2006 was recaptured during 2007 in Pamlico Sound. The final 2007 recapture of an adult drum was a 32 inch TL fish tagged September 2007 in the Ship Shoal Island surf where it was recaptured in October. Sub-adult red drum were tagged in good numbers in Rudee and Lynnhaven Inlets, at the Little Creek Jetties, at the Elizabeth River Hot Ditch area (including the power plant CEC canal), in the "York River Hot Ditch" (Yorktown Power Plant discharge canal), and at Winter Harbor (just up bay of New Point and beyond Horn Harbor). As in past years, recaptures occurred both within the initial tagging area over periods of 7-60 days. But numerous recaptures also occurred in NC waters of sub-adult drum tagged during 2006 and 2007. Nearly 300 sub-adult red drum were double tagged for tag retention studies. This data is being to determine over what "times at large" T-bar tags were lost. \

7) Sheepshead: Compared with previous years, the 2007 sheepshead fishery at the CBBT never became well developed. Only a few adult fish were tagged. However, good numbers of juvenile sheepshead (5-7 inches TL) congregated in the Yorktown Power Plant "Hot Ditch" and were tagged during fall 2007. Most recaptures occurred in 4-24 days post tagging with the fish remaining in the discharge canal area.

8) Spadefish: Most tagging occurred at the Chesapeake Light Tower offshore, at the CBBT, and at lighted structures inside the bay (Occahannock Range Light, Wolf Trap Light, and York Spit Light). Nearly all recaptures occurred again at the tagging site within 3-30 days post tagging. There were a few instances of movement, i.e., a fish tagged at the Chesapeake Light was recaptured in the bay at Wolf Trap Light, a spadefish moved from the CBBT to off Hoopers Island, MD, and a fish moved from York Spit Light down the bay to the CBBT).

9) Speckled Trout: Over 2,100 fish were tagged. Of these, 320 were double tagged and 19 triple tagged for tag retention trials. The double and triple tagged fish data are being examined to see the periods over which T-bar tags might have been lost from the fish. In December, nearly 200 trout were tagged in the Elizabeth River CEC canal. Over half of these fish were double tagged. Besides in the Elizabeth River "Hot Ditch canal", significant tagging was done at Lynnhaven and Rudee Inlets, the Little Creek Jetties, Hampton Roads Bridge Tunnel (January 2007), the Yorktown Power Plant "Hot Ditch" canal, the Ware River, and the Piankatank River. As in past years there was some movement of fish to NC. A trout tagged at the Hampton Roads Bridge Tunnel moved to the Kitty Hawk surf. A trout tagged during 2006 in Lynnhaven moved to Cape Point, NC, but another fish tagged in the same period moved to Mobjack Bay. A fish tagged during 2007 in Lynnhaven moved to Pamlico Sound, and a fish tagged in fall 2007 in the Ware River moved quickly to Harkers Island, NC. A trout tagged in 2006 in Magothy Bay (ES seaside) was recaptured during 2007 at Cape Lookout, NC. Local bay movement occurred in trout tagged at the Little Creek Jetties, i.e., one moved up bay off Crisfield, MD, one to the Elizabeth River Hot Ditch, and one to Rudee Inlet. A trout tagged in January 2007 at the Hampton Roads Bridge Tunnel was recaptured in the Machipongo River (ES seaside) during May 2007. Results are continuing to come in from the winter 2007-2008 tagging in the Elizabeth River Hot Ditch CEC canal. Most recaptures of these fish

continue to be either from the canal, or the nearby warm-water area influenced by the canal discharge plume (Deep Creek and adjacent waters of the Southern Branch of the Elizabeth River).

10) Tautog: The same pattern as previous years prevailed during 2007. The majority of tagging took place at the Back River Reef, the CBBT islands, the Cape Henry Wrecks, the Winthrop Wreck (4 mi. off VA Beach), the Chesapeake Light Tower Reef, and the Triangle Wrecks (about 30 miles offshore the bay mouth). Tautog were typically recaptured at their initial tagging sites from months to several years post tagging. The longest times at large were one fish for three years (stayed at the Winthrop Wreck), and five fish for 2-2.5 years (two of these fish remained at the respective second and fourth islands of the CBBT). Some movement occurred also. A tautog tagged at the Back River Reef moved to the CBBT (tagged 2006, recaptured 2007), however most fish tagged at the reef during fall 2006 were again recaptured there during 2007. Two fish moved into the bay from the Cape Henry wrecks, one to the CBBT and one to the Back River Reef. An unusual case involved a tautog tagged at the CBBT (April 2006) which was recaptured in Croatan Sound, NC in June 2007. A fish tagged at the Chesapeake Light Tower Reef in January 2007 was recaptured at the Triangle Wrecks in March 2007. Two fish tagged at the Triangle Wrecks moved inshore, one to the Cape Henry Wrecks and one to the CBBT. Two tautog tagged in December 2006 at the Winthrop Wreck moved into the bay, both being recaptured at the CBBT in May-June 2007.

The preceding highlights and examples of tagging effort, and associated recaptures of tagged fish, will be defined in more detail in the 2007 annual report.

2009 Project Needs and Objectives

This project is multi-dimensional, contributing to both research and management data needs as well as including a public education component. The tagging program has carefully selected targeted species that are not typically the subject of intensive tagging studies in Chesapeake Bay waters. In the case of flounder, the program is collecting current and comprehensive data on how the species uses bay and Eastern Shore habitats. With more data than some earlier studies, the tagging program's flounder results are generally supporting findings of earlier VIMS flounder tagging research (in the late 1980s and mid-1990s) and that other researchers working to understand the species' seasonal and year-to-year migration patterns in mid-Atlantic waters (see R. Kraus and J. Musick. 2001. A Brief Interpretation of Summer Flounder, *Paralichthys dentatus*, Movements and Stock Structure with New Tagging Data on Juveniles. Marine Fisheries Review 63 (3):1-6).

As indicated at the beginning of the proposal, the tagging program currently directs trained angler taggers to focus tagging on red drum, black drum, cobia, speckled trout, summer flounder, black sea bass, spadefish, tautog, sheepshead, and gray triggerfish.

Overall program objectives focus on teaching anglers to carry on quality tagging on select target species and to maintain, as well as submit in a timely fashion, accurate tagging data. The program strives to produce data which helps expand understanding of (1) target species' seasonal movements within years, and between years, as the fish move into and then leave Chesapeake Bay and nearshore waters (all target species but tautog are generally seasonal visitors to state waters), (2) within-year movement and habitat use patterns of target species using bay and offshore waters, (3) movement times and rates of target species between Virginia waters and coastal waters both north and south, (4) the year classes (fish

sizes) of target species contributing to Virginia's marine recreational fisheries and their temporal dynamics in the fishery, (5) growth data on target species, (6) relative numbers and sizes of fish released by anglers under fishery size and bag limit regulations, and (7) feedback to anglers, based on hard data, about the relative survival rates of released fish when handled properly, including how such fish ultimately contribute to anglers' catches both short and long-term.

The public education component of the VGFTP has three important aspects: (1) fostering of public interest in conservation and resource management by direct angler involvement in the program, (2) communication regarding the science of studying fisheries resources – how the process works, the types of information needed, and how anglers can contribute to the process, and (3) educating the public about resource needs, the benefits of catch-and-release fishing, and fish handling techniques to improve survival of released fish.

Approach

The program limits the number of trained, angler taggers participating at any one time in the program. This enables better management and tracking of tagging material needs, allows keeping up with data processing needs, and helps keep response time reasonable regarding sending fish tagging information and rewards to those reporting catches of tagged fish. Volunteers are enrolled on a “first-come, first-served” basis during December and January. At the end of the year, veteran taggers are required to re-register to continue with the program in the coming year.

Four training sessions are held in February to early March each year to update taggers on current results and to train those new to the program. All new enrollees must attend a training session. During the two hour session, they receive information about program objectives, proper ways to reduce catching and handling stress in fish to be tagged, proper tagging procedures, and required recording and submission of tagged fish data. After completing a practical exercise where they satisfactorily anchor tags in freshly iced fish specimens, new taggers receive their tagging equipment.

Veteran taggers are not required to annually attend training workshops, although they are invited to do so to not only become updated on results from their tagging efforts, but also to share ideas and tips regarding maintaining accurate tagging data records and efficient ways to handle and tag various target species. Every training workshop includes experienced taggers interacting with new comers.

Persons recapturing and reporting a tagged fish receive a letter thanking them for their effort and detailing information about the fish they caught. They have the option to receive a program hat, T-shirt, or other reward item for reporting the recapture. Taggers receive a letter summarizing the original tagging and detailing the recapture.

Volunteer taggers receive a “Conservation Award” certificate for tagging a minimum of 25 fish during the year. Anglers having the greatest number of tagged fish records by target species in a given year are awarded with a “Top Tagger” plaque. The angler tagging the most fish overall also receives an award plaque as does the angler whose tagging effort results in the greatest number of overall recaptures during the year.

The program remains alert to the need to conduct tag retention studies on target species and to experiment with various tag designs for the program's mix of target species. Such efforts will continue to be focused on adult speckled trout, sub-adult red drum, and spadefish.

The record level of trained angler taggers in the program during 2008 should result a significant increase in the database regarding tagged fish and recaptured fish records during the immediate year. However, as now being seen more consistently, the tagging effort in a given year results in significant long term results for as many as five years post tagging. In cases of fish being at large for a year or more, recapture results contribute a temporal, and sometimes a geographical dimension to the data set not likely to occur with only short-term results. Along with other obvious reasons already referenced, this particular aspect of the tagging program, now maturing, is another major reason for extending its funding through 2009.

Expected Benefits

1. Generation of information and data on recreationally important fish species, as detailed in the section on "Needs and Objectives". Standing alone much of this information may not be sufficient to generate actions or decisions on resource-related issues, but it may point to potential problems, may point out new or previously unknown possibilities warranting targeted scientific work, may bolster, verify, bring into question, help evaluate current research and management regimes.
2. The opportunity to tag large numbers of fish on short notice with an experienced group of trained taggers. This situation has occurred numerous times, especially with regard to juvenile and adult red drum, cobia, summer flounder, speckled trout, spadefish, sheepshead, and tautog. During 2006 strong year classes of sub-adult and adult red drum resulted on the program able to tag more drum than any previous year in the 12 year history of the program.
3. Better communication, understanding and cooperation among scientists, managers, and anglers regarding tagging programs. Better information to the public about tagging efforts, proper fish handling techniques, and the role and importance of catch-and-release fishing in the recreational fishery.
4. An annual report summarizing the tag program results. Annual report available on website at VIMS.
5. A database available for fisheries managers, scientists and institutions.

Location

The project is located in Virginia and the taggers are Virginia recreational fishermen. All species of fish targeted by the VGFTP are recreationally important and are found seasonally in the Chesapeake Bay. Tagging efforts will occur in the Chesapeake Bay and adjacent offshore waters.

Annual Report

The annual report for year 2006 was completed in May 2007 and a copy provided to the Recreational Fishing Advisory Board and VMRC staff. Program participants and others in the angling community are provided hard copies of such reports, if requested. Annual reports for all past program years have now been added to VIMS web site (www.vims.edu/adv/recreation/tag/index).. A link to the VIMS site is provided on the VMRC web site as well.

Table 1. Tagged and Recaptured Fish by Year and Overall Recapture Rates by Species (2005-2007)

Species	No. Tagged				No. Recaptured				Overall Recapture Rate		
	2005	2006	2007*	1995-2007	2005	2006	2007*	1995-2007	2005	2006	2007
Black Drum	206	289	542	3,325	4	29	37	158	4.7%	5.4%	4.8%
Black Sea Bass	682	1,264	1,865	18,680	107	267	286	2,563	15.0%	15.2%	13.7%
Cobia¹	96	134	59	1,130	4	22	12	146	12.6%	13.2%	12.9%
Flounder	6,123	6,210	8,582	53,629	623	797	1,030	4,664	9.1%	10.0%	8.7%
Gray Triggerfish	23	79	262	922	4	32	47	163	26.3%	29.1%	17.7%
Gray Trout²	0	2	5	9,206	0	1	0	67	0.7%	0.7%	0.7%
Red Drum⁴	795	4,057	3,026	20,059	41	348	513	1,958	11.0%	10.3%	9.8%
Sheepshead	188	153	227	1,096	3	0	41	74	6.7%	5.1%	6.8%
Spadefish	160	219	433	4,984	22	28	71	509	10.3%	10.6%	10.2%
Speckled Trout^{3,5}	1,150	1,830	2,527	13,953	31	47	68	310	2.7%	2.7%	2.2%
Tautog	823	2,068	951	13,824	134	318	233	2,116	15.7%	15.8%	15.3%
Grand Total	10,246	16,305	18,479	140,808	973	1,889	2,338	12,728	9.9%	9.6%	9.0%

¹ - 2006 totals do not include 155 and 186 tagged juvenile cobia, respectively, released from VIMS Finfish Aquaculture Facility.

² - 2007 totals include 2 double tagged gray trout for tag retention field trials.

³ - 2005 and 2006 totals include 201 and 110 double tagged trout, respectively, for tag retention field trials.

⁴ - 2007 totals include 294 double tagged and 11 triple tagged sub-adult red drum, all for tag retention field trials.

⁵ - 2007 totals include 320 double tagged and 19 triple tagged trout for tag retention field trials.

* Total counts are preliminary.

Table 2 - Anglers Tagging 25 or More Fish During 2007

First Name	Last Name	Black Drum	Black Sea Bass	Cobia	Flounder	Gray Trout	Red Drum	Sheeps-head	Spade-fish	Speckled Trout	Tautog	Gray Triggerfish	Total
Ed	Shepherd	267	224	1	2398	0	1061	202	0	169	1	0	4323
Scott	Vinson	0	0	0	1279	0	0	0	0	9	0	0	1288
Jon	Lucy	0	2	0	39	2	343	0	0	537	1	0	924
Ed	Lawrence	3	1	1	83	0	321	0	0	451	0	0	860
Rob	Collins	1	335	0	69	0	11	2	19	5	124	145	711
Bill	Knapp	5	56	11	117	0	98	1	32	145	174	40	679
Kevin	Whitley	14	20	0	152	0	181	5	2	183	75	3	635
James	Johnson	53	13	0	470	0	5	0	3	13	0	0	557
Jay	Duell	0	36	0	333	0	64	0	2	33	0	1	469
Hugh	Green	0	60	0	136	0	14	0	0	157	0	0	367
David	Griffith	2	30	2	123	0	19	1	1	149	5	0	332
Jim	Duell	14	24	0	242	0	26	0	0	19	1	0	326
Mike	Perron	2	102	0	132	0	3	7	0	12	56	3	317
Don	Miller	3	0	1	8	0	196	0	0	75	1	0	284
Tracy	Boyd	1	199	0	33	0	3	1	2	26	0	0	265
David	Agee	0	23	0	146	0	0	0	0	0	76	0	245
Woody	Harrell	0	205	0	21	0	0	2	0	3	0	0	231
Jason	Hodges	0	0	0	218	0	1	0	0	2	0	0	221
Brandon	Poulter	1	0	0	100	0	92	0	0	28	0	0	221
David	Barnhart	0	1	7	16	0	158	0	2	32	4	0	220
Mike	Handforth	0	14	0	195	0	0	0	0	0	0	0	209
Brandon	Bartlett	5	21	5	37	0	58	5	61	12	0	0	204
Susan	Harrell	0	170	0	27	0	0	0	0	2	0	0	199
Marvin	Hardisty	0	1	0	22	3	26	0	0	146	0	0	198
Dorothy	Elliott	0	0	0	196	0	0	0	0	0	0	0	196
James	Leiffer	0	0	0	170	0	0	0	0	0	12	0	182

Table 2 - Anglers Tagging 25 or More Fish During 2007

First Name	Last Name	Black Drum	Black Sea Bass	Cobia	Flounder	Gray Trout	Red Drum	Sheeps-head	Spade-fish	Speckled Trout	Tautog	Gray Triggerfish	Total
David	Cohn	3	12	1	10	0	4	0	0	4	81	62	177
Doug	Purcell	0	2	0	17	0	19	0	17	122	0	0	177
Dan	Peters	0	45	0	10	0	2	0	69	18	26	2	172
John	Zarella	0	8	0	138	0	3	0	0	0	0	0	149
Jim	Robinson	6	29	0	52	0	10	0	19	16	12	0	144
Rick	Guyot	3	0	2	72	0	47	0	5	12	2	0	143
Rory	Goggin	0	0	0	127	0	3	0	0	7	0	0	137
Jared	Seeloff	4	0	0	112	0	17	0	0	3	0	0	136
Gil	Wilson	0	0	1	0	0	0	0	51	83	0	0	135
Terry	Lowry	6	33	0	22	0	12	1	0	0	55	0	129
Brian	Henderson	0	11	0	92	0	0	0	0	0	12	0	115
Ken	Neil	12	0	0	1	0	6	0	0	0	95	0	114
Donald	Leviner	0	16	0	56	0	0	0	32	0	9	0	113
Bill	Perron	0	0	0	85	0	20	0	0	0	4	0	109
Mary	Goggin	0	9	0	72	0	13	0	0	7	0	0	101
Anthony	Brigantic	0	0	0	96	0	0	0	0	0	0	0	96
Danny	Taylor	0	0	0	74	0	0	0	0	0	20	0	94
Brandon	Honeycutt	0	3	2	10	0	7	0	7	47	16	0	92
Doug	Casady	1	0	2	30	0	37	0	14	1	0	1	87
B	Capps	0	23	0	40	0	3	0	14	2	0	0	82
C	Hester	0	33	0	46	0	1	0	0	0	0	0	80
Keith	Baron	11	1	0	44	0	5	0	0	17	0	0	78
Doug	Wehner	39	4	0	34	0	0	0	0	0	0	0	77
Corey	Routh	0	0	0	14	0	44	0	0	17	0	0	75
Lance	Stitcher	0	25	0	34	0	0	0	7	0	9	0	75
Wayne	Seymour	0	0	0	0	0	70	0	0	3	0	0	73
Jeff	Davis	0	0	0	72	0	0	0	0	0	0	0	72

Table 2 - Anglers Tagging 25 or More Fish During 2007

First Name	Last Name	Black Drum	Black Sea Bass	Cobia	Flounder	Gray Trout	Red Drum	Sheeps-head	Spade-fish	Speckled Trout	Tautog	Gray Triggerfish	Total
Brian	Jones	0	0	0	2	0	23	0	0	41	0	0	66
Rob	Holtz	4	0	0	3	0	33	0	0	0	26	0	66
Brian	Watkins	0	0	0	32	0	23	0	0	8	0	0	63
Elmer	Diggs	6	17	0	4	0	16	0	0	0	14	3	60
JIMMY	ROBINSON	0	0	0	0	0	0	0	51	0	0	0	51
Jay	Young	0	0	0	2	0	8	0	0	40	0	0	50
Jim	Jenrette	22	0	21	0	0	6	0	0	0	0	0	49
Brad	Braendle	0	0	0	3	0	23	0	0	19	0	0	45
Shawn	Whitworth	0	0	0	43	0	1	0	0	1	0	0	45
Gerald	Head	0	0	0	6	0	7	0	0	30	0	0	43
Al	Bunnell	0	0	0	0	0	43	0	0	0	0	0	43
Bryan	Grenier	6	3	0	1	0	21	0	0	10	0	0	41
Cameron	Mann	0	15	0	13	0	1	0	11	0	0	0	40
Ed	Stumphauzer	0	0	0	15	0	0	0	0	23	0	0	38
M	Otterson	0	0	0	0	0	0	0	2	35	0	0	37
Kendall	Osborne	0	0	0	0	0	10	0	0	27	0	0	37
Charlie	Johnson	0	0	0	28	0	0	0	0	7	0	0	35
Tim	Cannon	0	0	0	12	0	0	0	0	21	0	0	33
Bob	Lee	0	7	0	17	0	4	0	0	2	2	0	32
Ron	Duke	1	0	0	24	0	0	0	0	7	0	0	32
Justin	Hurst	0	0	0	0	0	31	0	0	0	0	0	31
Rudy	Bosher	0	0	0	31	0	0	0	0	0	0	0	31
James	Johnston	9	0	0	3	0	19	0	0	0	0	0	31
Michael	Winn	1	10	0	16	0	0	0	2	1	0	0	30
Steve	Cibik	0	2	0	15	1	0	0	0	10	0	0	28
Gary	Donaldson	0	4	0	23	0	0	0	0	0	0	0	27
Charles	Camp	6	0	0	15	0	0	0	5	0	0	0	26

Table 3 - Anglers Having 5 or More Fish Recaptured During 2007

Tagger	Black Drum	Black Sea Bass	Cobia	Flounder	Gray Trout	Red Drum	Sheeps-head	Spade-fish	Speckled Trout	Tautog	Gray Triggerfish	Total
Shepherd	32	50	0	402	0	222	39	0	6	0	0	751
Vinson	0	0	0	126	0	5	0	0	1	0	0	132
Johnson	0	0	0	117	0	1	0	0	0	0	0	118
Knapp	0	9	0	7	0	15	0	7	2	58	10	108
Collins	0	48	0	4	0	2	0	0	0	22	9	85
Whitley	2	6	0	24	0	21	0	0	8	13	2	76
Boyd	0	72	0	1	0	0	1	0	0	0	0	74
Cohn	0	3	0	1	0	8	0	0	0	35	17	64
Lucy	0	0	0	1	0	35	0	0	12	0	0	48
Perron	0	13	0	15	0	0	0	0	0	17	2	47
Lawrence	0	0	1	2	0	35	0	0	8	0	0	46
Duell	0	5	0	32	0	7	0	0	0	0	0	44
Miller	0	0	0	1	0	35	0	0	0	0	0	36
Bartlett	0	4	0	0	0	12	1	16	1	0	0	34
Hodges	0	0	0	33	0	0	0	0	0	0	0	33
Barnhart	0	0	0	3	0	26	0	1	0	1	0	31
Duell	0	2	0	20	0	4	0	0	0	0	0	26
Seymour	0	0	0	1	0	24	0	0	0	0	0	25
Seeloff	0	0	0	20	0	4	0	0	0	0	0	24
Goggin	0	0	0	24	0	0	0	0	0	0	0	24
Green	0	8	0	8	0	2	0	0	4	0	0	22
Whitworth	0	0	0	15	0	0	0	0	0	4	0	19
Guyot	0	0	1	9	0	6	0	0	1	1	0	18
Harrell	0	16	0	1	0	0	0	0	0	0	0	17
Neil	0	0	0	1	0	0	0	0	0	15	0	16
Peters	0	4	0	0	0	0	0	8	1	2	1	16
Robinson	0	1	0	7	0	0	0	3	0	4	0	15
Wilson	0	0	0	0	0	0	0	14	1	0	0	15
Agee	0	3	0	5	0	0	0	0	0	7	0	15

Table 3 - Anglers Having 5 or More Fish Recaptured During 2007

Tagger	Black Drum	Black Sea Bass	Cobia	Flounder	Gray Trout	Red Drum	Sheeps-head	Spade-fish	Speckled Trout	Tautog	Gray Triggerfish	Total
Handforth	0	1	0	13	0	0	0	0	0	0	0	14
Diggs	0	6	0	0	0	1	0	0	0	2	4	13
Elliott	0	0	0	13	0	0	0	0	0	0	0	13
Goggin	0	2	0	8	0	2	0	0	0	0	0	12
Harrell	0	10	0	2	0	0	0	0	0	0	0	12
Purcell	0	1	0	0	0	0	0	7	4	0	0	12
Poulter	0	0	0	5	0	6	0	0	0	0	0	11
Perron	0	0	0	9	0	0	0	0	0	2	0	11
Leiffer	0	0	0	9	0	0	0	0	0	1	0	10
Henderson	0	0	0	8	0	0	0	0	0	2	0	10
Casady	0	0	0	6	0	4	0	0	0	0	0	10
Hughes	0	0	0	9	0	0	0	0	0	0	0	9
Harrell	0	0	0	0	0	0	0	0	0	8	0	8
Lowry	0	5	0	1	0	2	0	0	0	0	0	8
Stitcher	0	4	0	3	0	0	0	0	0	1	0	8
Griffith	0	1	0	6	0	0	0	0	1	0	0	8
Brigantic	0	0	0	7	0	0	0	0	0	0	0	7
Jenrette	1	0	6	0	0	0	0	0	0	0	0	7
ROBINSON	0	0	0	0	0	0	0	7	0	0	0	7
Holtz	0	0	0	1	0	0	0	0	0	5	0	6
Lee	0	2	0	3	0	0	0	0	0	1	0	6
Wehner	1	0	0	5	0	0	0	0	0	0	0	6
Seeloff	0	0	0	5	0	0	0	0	0	0	0	5
Hester	0	3	0	1	0	1	0	0	0	0	0	5
Hurst	0	0	0	0	0	0	0	0	0	5	0	5
Capps	0	1	0	0	0	0	0	4	0	0	0	5
Hardisty	0	0	0	1	0	0	0	0	4	0	0	5
Nagel	0	0	0	5	0	0	0	0	0	0	0	5
Baron	0	0	0	5	0	0	0	0	0	0	0	5

Table 4
Virginia Game Fish Tagging Program
2007 Annual Tagging Awards

Most Tagged Fish	Ed Shepherd Scott Vinson	4323 1288
Most Recaptured Fish	Ed Shepherd Scott Vinson	746 132
Most Tagged Black Drum	Ed Shepherd James Johnson	267 53
Most Tagged Black Sea Bass	Rob Collins Ed Shepherd	335 224
Most Tagged Cobia	Jim Jenrette Bill Knapp	21 11
Most Tagged Flounder	Ed Shepherd Scott Vinson	2398 1279
Most Tagged Gray Triggerfish	Robert W. Collins David Cohn	145 62
Most Tagged Red Drum	Ed Shepherd Ed Lawrence	1061 252
Most Tagged Sheepshead	Ed Shepherd Mike Perron	202 7
Most Tagged Spadefish	Dan Peters Brandon Bartlett	69 61
Most Tagged Speckled Trout	Ed Lawrence Kevin Whitley	425 183
Most Tagged Tautog	Bill Knapp Rob Collins	174 124

**Table 5. Virginia Game Fish Tagging Program Annual Tagging Awards
2005 - 2007**

Category	2005		2006		2007	
Most Recaptured Fish	Ed Shepherd	255	Ed Shepherd	348	Ed Shepherd	746
Most Tagged Fish	Ed Shepherd	2551	Ed Shepherd	3591	Ed Shepherd	4323
Most Tagged Black Drum	Dennis Cline	27	Dennis Cline	61	Ed Shepherd	267
Most Tagged Black Sea Bass	Robert Collins	143	Tracy Boyd	243	Rob Collins	335
Most Tagged Cobia	David Barnhart	26	Jim Jenrette	28	Jim Jenrette	21
Most Tagged Flounder	Ed Shepherd	2351	Ed Shepherd	1513	Ed Shepherd	2398
Most Tagged Gray Triggerfish	Robert Collins	15	Robert W. Collins	38	Robert W. Collins	145
Most Tagged Red Drum	Wayne Seymour	115	Ed Shepherd	1608	Ed Shepherd	1061
Most Tagged Sheepshead	Robert Holtz	59	Robert W. Collins	28	Ed Shepherd	202
Most Tagged Spadefish	Gill Wilson	48	Robert S. Holtz	42	Dan Peters	69
Most Tagged Speckled Trout	David Barnhart	138	Ed Shepherd	350	Ed Lawrence	425
Most Tagged Tautog	Bill Knapp	142	Bill Knapp	314	Bill Knapp	174