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VIRGINIA RECREATIONAL FISHING DEVELOPMENT FUND
PROJECT APPLICATION

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

DESCRIPTIVE TITLE OF PROJECT

Virginia Game Fish Tagging Program 2007 (Yr. 13 Proposal)

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. As of January 1, 2005, annually training anglers via a series of coastal workshops, the program enables a corps of 150-200 experienced anglers to direct tagging effort on select target species important to VA's marine recreational fisheries (valued in 2002 at over one billion dollars annually). Database records, used by researchers, fishery mangers, and anglers, are currently maintained on approximately 80,000 tagged fish and 8,000 associated recaptures (9.6-9.9% recapture rate during 2002-2004).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 accomplished under a cooperative USFWS/state coast-wide tagging program. During 2003 and 2004, trained anglers tagged and released approximately 8,100 and 12,000 fish, respectively. About 950-1,000 recaptures were reported each year. Cooperative tagging "rodeo" days are conducted with Dominion Resources at two power plants where red drum and speckled trout are shown to use the areas as "warm-water havens" during winter. The program database is regularly used by VMRC, VIMS, researchers outside VIMS, the Atlantic States Marine Fisheries Commission (ASMFC), and others. Understanding of movement and migration patterns of the species through Virginia waters is being enhanced, as well as understanding habitats frequented by the species within state waters. All target species either spawn in the lower Bay, or in offshore-nearshore waters of VA-NC, using Virginia waters as nursery/feeding grounds. Tagging program 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 likely return annually to Chesapeake Bay to spawn. The longest know Atlantic coast migration record for cobia (from Virginia to offshore MS/LA) was documented by the program in 2004. From 2002-2004, undersized flounder are being shown to enter the bay, then remain in surprisingly close proximity to specific structure sites (for periods of 2-17 weeks), before again moving offshore. This VA pattern is now supported by researchers using acoustic telemetry tracking of flounder during summer months in a relatively small NJ coastal river.

EXPECTED BENEFITS

Provide data on local fish movement and seasonal migrations, data previously unavailable on species important to VA's marine recreational fisheries (except for several tagging studies over a decade ago on flounder). Data are used by researchers, fishery managers, and anglers in better fitting management actions to Virginia's fisheries. Through the program information on fish movement and habitat use patterns in Virginia waters continues to improve. The program also provides the angling community an active, substantiated educational experience regarding the benefits accruing to Virginia recreational fisheries from careful release of undersized fish, and fish over the daily bag limits, by anglers throughout lower bay and nearshore-offshore state waters.

COSTS

VMRC Funding: $ 43,644 (VIMS portion) **+ $21,143 (VMRC portion) = $64,787**

VIMS Funding: $ 18,897

Total Cost : $ 62,541 (VIMS portion) **+ $21,143 = $83,684**

Detailed budget included with proposal

Virginia Game Fish Tagging Program
Year 13 Proposal (2007)

January 1, 2007 to December 31, 2007

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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Virginia Game Fish Tagging Program (VGFTP)
Year 13 Proposal (2007)

Overview

This project, beginning in 1995, is a cooperative program of the Virginia Saltwater Fishing Tournament (program of the Marine Resources Commission) and the Virginia Institute of Marine Science, College of William and Mary (VIMS). The project coordinators are Claude Bain (VSWFT) and Jon Lucy (VIMS).

Through December 31, 2005, nearly 88,000 fish have been tagged-released and approximately 8,300 recaptures reported. The cumulative overall recapture rate through 2005 was approximately 9.4 %, a rate similar in magnitude to previous year-end rates observed since 2000 (9.6-9.9 %). The sport fishing community, trained observers on trawlers, and fish packing-fish retail businesses together reported about 961, 992, and 955 recaptures in 2003-2005, respectively.

Training workshops for new taggers were postponed during 2003 due to staffing transitions in the VSWFT and budget uncertainties. Bringing the training workshops back on board during late winter 2004 improved participation from 120 up to nearly 200 trained taggers. Working cooperatively with Dominion Resources and Bass Pro Shops to hold a special Chesapeake Game Fish Tagging Rodeo day on the property of the Chesapeake Energy Conservation Center (Elizabeth River Power Station) also helped attract new taggers to the 2004 training workshops.

While no special tagging rodeos were organized during 2005, our four Tagging Training Workshops held during February 2005 brought approximately 40 new taggers into the program. Given that almost an equal number of taggers chose not renew their program registration as of January 2005, the level of trained taggers remains at the program's target maximum level of about 200 individuals.

Once again joining with Bass Pro Shops, hosted one of four tagging training workshops during 2005 that helped bring more experienced anglers into the tagging program. In comparison to previous years' tagging activity, the mild 2004/2005 winter allowed greater catches of tautog, and an early start on flounder, the result being that as of mid June 2006, approximately three times more fish have been tagged, with similarly increases in recaptures, than typical for previous years.

Information generated by the VGFTP has been utilized by the Atlantic States Marine Fisheries Commission (ASMFC), VMRC, VIMS and other management groups to assist in expanding their available data to improve fisheries research and management. Information generated by the VGFTP has been helpful in suggesting informational gaps in fisheries data and has led to more intensive studies of specific fish species.

We are regularly requested to provide up-dated information on numbers and sizes of tagged tautog for each year, and tag-recapture records. These data are used by the ASMFC Tautog Technical Committee in updating information on sizes of fish caught in the recreational

fishery, and provide an index of release rates and released fish size distribution (see Tautog section). Because of the sampling design of the NMFS/NOAA Fisheries "Marine Recreational Fisheries Statistics Survey" (MRFSS), dockside sampling of Virginia anglers' catches typically include very few tautog (it is a specialty fishery and not participated in by as large a proportion of anglers as the case for species such as striped bass, flounder, gray trout, etc.).

During 2004, at our request we were permitted to join cooperatively in a NMFS tagging study of black sea bass. We participated in two tagging trips funded by NMFS, double tagging with our T-bar tags approximately 180 small and medium fish. Double-tagged fish each had a T-bar tag in the shoulder musculature and was also tagged with a NMFS internal anchor (belly) tag. Given internal anchor tags traditionally have a very high retention rate in many species (it is the tag used by all states for striped bass), this provided the opportunity to test tag retention of our tag against the NMFS tag. To date nearly 25 recaptures have occurred for the double-tagged fish Within the first 3-5 months of recaptures being reported, all fish still had the T-bar tag and NMFS internal anchor tag in place. This result indicated the T-bar tag was staying in the fish at a comparable level to the internal anchor tag. However, as more recaptures of double-tagged sea bass were reported throughout 2005, T-bar tag retention rates began to decline. Unfortunately since most of the 2005 recaptures were from commercial sea bass fishers, the reduced reporting of Game Fish Tagging Program T-bar tags might have been "influenced" by the fact that no monetary awards were being offered for the T-bar tags, while the NOAA Fisheries tag recaptures resulted in a $5 reward (with an occasional high-tag reward of $100 for specially tagged fish). Therefore it is unclear whether the decline in reports of T-bar tags in the double-tagged sea bass were possibly "biased" by the differential reward systems for the two different types of tags.

NMFS is enthusiastic about our cooperative tag-retention study. As part of their coast-wide tagging program to reassess the black sea bass stock, the state of New Jersey only used T-bar tags for its part of the tagging effort. Other states, including Virginia, have used internal anchor tags. Our work not only verifies the validity of using T-bar tags for black sea bass in Virginia's Game Fish Program, but will assist NMFS in evaluating how to merge the New Jersey black sea bass tagging data with that of other states.

Also in October-November 2004, we began double-tagging field experiments with speckled trout. The primary issue is whether T-bar tag retention rates decline over long periods when fish are at large in the bay and moving along ocean beaches. Our tagged trout exhibit nearly 100 % retention rate for T-bar tags when held in net pens or vinyl wire cages (5-8 day field trials). However, it is unknown if some tags might work out of the fish's muscle over long periods. Some anglers wonder if even bluefish might sometimes bight off tags in trout (or even eat the trout (a black sea bass "T-bar tag" was once discovered in a bluefish stomach).

As with the sea bass, double-tagging study, we hope to answer this question by tagging numbers of trout with both our T-bar tag and a Hallprint soft-anchor, internal "belly" tag. Another issue with speckled trout is low recapture rates. We receive valuable, quality returns showing our specks move farther distances along the coast (VA to NC) than typically shown by tagging studies on the species in southeast Atlantic waters, or Gulf coast waters (the fish largely stay in the same estuaries where they were spawned outside VA to mid-NC). Possibly double tagging specks could result in a higher reporting rate of tagged fish, especially important information to have.

During fall 2004, approximately 35 fish were double-tagged, most in Lynnhaven Inlet, but also a few in Rudee Inlet waters. Holding sample specimens of double tagged specks in VIMS Aquarium (three fish: 10, 12, and 14 inches TL) from late December 2004 through April 2005 showed tag entry areas healed over well and both tags stayed in the fish during the 14 week trial.

During fall 2005, working cooperatively with various taggers in Lynnhaven and Rudee Inlets we double-tagged an additional 155 speckled trout. Continuing this effort during January-march 2006 in the area of the Elizabeth River Hot Ditch (in the general area (Deep Creek and "the Pit") as well as inside the actual discharge canal of the Dominion Resources Chesapeake Energy Conservation Center plant, and 30 more trout were double-tagged. Recaptures to date indicate that retention is 100 % with both tags.

Outreach to Scientific and Angling Communities

As the case in most years, VIMS and VMRC's Saltwater Fishing Tournament Program each have adjacent exhibits at the Virginia Beach Fresh and Saltwater Sport Fishing Show. In addition to other projects, we highlight accomplishments of the Game Fish Tagging Program using posters and handouts. We always receive numerous questions about the tagging program garner interest among anglers in going through our annual tagging training workshops.

We also presented our flounder tag-recapture data results at a Flatfish Conference (December 2004, Connecticut). With over 100 attendees from marine research labs and universities along the Atlantic coasts, our results were well received. The presented our interpretation of patterns of site fidelity of juvenile flounder to lower Chesapeake Bay structure sites, particularly at Hampton's Buckroe Fishing Pier where the pattern has held for four years (2000-2003, before the pier was destroyed in September 2003 by Hurricane Isabel). Our results and their interpretation were supported at the meeting by New Jersey researchers. Acoustic tag tracking of juvenile flounder over periods of weeks in a small New Jersey coastal river showed the same pattern as our multiple recaptures of flounder over weeks to months at fishing piers, bridge-tunnels, and rock jetties where they had been initially tagged. Our data on wide dispersal of Chesapeake Bay tagged flounder during the subsequent year to tagging, i.e., being recaptured in coastal areas from Long Island to the North/South Carolina line, was also of interest to the audience, expanding upon earlier results of tagging studies conducted by VIMS and NC researchers.

In June 2005, as part of invited participation in the Fourth World Recreational Fishing Conference (Trondheim, Norway; attendance: about 180 persons from 37 countries), J. Lucy gave an oral presentation addressing some of the successes of the Virginia Game Fish Tagging Program. Received well by conference participants, the presentation was entitled, "Catch and Release in Marine Recreational Fisheries: Expanding Research and Educational Tools Provided by Angler-Assisted Tagging Programs."

As a result of working with the Game Fish Tagging Program's recapture data for tautog (1995-2002), a manuscript was submitted for consideration by the American Fisheries Society's bimonthly periodical, "Fisheries." Entitled, "Evaluating Localized vs Large-scale Management: A Study of Tautog (*Tautoga onitis)* in Virginia" (authors: Tuckey, T., N. Yochum, J. Hoenig, J.

Lucy.), the article has been reviewed and undergone final editing. We are waiting to learn if in its edited form it will now be accepted for publication.

The involvement of Virginia anglers in collection of tag-recapture data useful to researchers and fishery managers was highlighted in a presentation at a symposium held in conjunction as part of the annual meeting of the American Fisheries Society (September 2005; Anchorage, Alaska). The oral presentation, "Catch and Release Research and Education: Contrasting Issues, Results, and Outputs in the U.S., Canada, and Australia;" (authors: J. Lucy, W. Otway-Canada, and W. Sawynok-Australia Released Fish Survival Program) was part of the Sea Grant Program coordinated symposium entitled, Catch-and-Release Science and Its Application to Conservation and Management. The presentation was well-received by nearly 70 persons attending the session.

Red drum tag-recapture data (for puppy drum/sub-adult fish and large fish-- > 38 inches TL) from our program, compared to that of North Carolina Division of Marine Fisheries, are showing similarities and differences in patterns of movement of fish tagged in the respective states. These patterns were highlighted in a poster presentation at the Southeast fish and Wildlife Association annual conference in South Carolina. Up to 20% of puppy drum tagged in Virginia waters have been recaptured in subsequent fall-winter-spring months in North Carolina. However, to date no large (>38 inches TL) red drum tagged along Virginia barrier island beaches or inside the lower bay have been recaptured in North Carolina. Mixing of adult fish from both states off North Carolina during winter months is yet to be documented by the combined tagging programs. However, by changing to Hallprint's stainless steel, wire core, dart tags for large fish in 2001 (with higher retention rates in the big fish), recaptures of large drum are on the increase.

Representatives of both the South Carolina Game Fish Tagging Program and the Maryland DNR Recreational Fisheries Program attended 2004 tagging training workshops to assess possible applications of our training methods and organizational structure to their respective programs.

Red Drum

Regarding red drum migration and movement patterns in Virginia's Chesapeake Bay and ocean waters, VGFTP data was the only data available to VMRC for input into the developing ASMFC Red Drum Fishery Management Plan during 2001. The flexibility of the program to respond effectively to the sudden appearance during mid-summer 2002 to an extremely large year class of juvenile (puppy) red drum resulted in high numbers of drum tagged in key locations, the major areas of concentrated tagging were: Lynnhaven Inlet (August-October 2002), Mobjack Bay area (August-September 2002), the Elizabeth River Hot Ditch (December 2002-March 2003), and the York River Hot Ditch (December 2002-March 2003).

Efforts by taggers at the York River Power Plant warm-water, discharge canal had major influence on encouraging VIMS and Dominion Resources to plan and conduct the VGFTP's first significant day-long educational event (VIMS-Dominion Resources Red Drum Tagging Rodeo). The event attracted over 40 anglers and experienced taggers, many from the Richmond area, resulting in over 130 red drum being tagged during the day. The resulting data have indicated site fidelity of drum to the discharge canal can be from 4-6 weeks to nearly 3 months. Once taking up residence in the canal waters during November-December, the fish often remain there

until adjacent waters warm to about 45-50 F. At that time some fish begin leaving the canal area while others remain there well into spring months.

Not surprisingly, this same pattern has been observed for puppy drum tagged at the Elizabeth River Hot Ditch where a longer data history exists. The success of the Red drum Tagging Rodeo led Dominion Resources, VIMS, VMRC, and the VGFTP to cooperate in a second full day educational event at the Elizabeth River Power Station discharge canal in January 2004. While attracting over 80 anglers from Richmond, Williamsburg, and Hampton Roads, reduced numbers of red drum held the day's tagging effort to less than 50 fish, most of which were juvenile black drum. However several speckled trout and one summer flounder were also tagged. The program increased interest in the February-March 2004 tagging training workshops with over 40 anglers turning out for the workshop held cooperatively with Bass Pro Shops at its new Outdoor World store in Hampton.

During 2004 we had five recaptures of large red drum tagged 1-2 years earlier from the area holding such fish (from the Inner Middle Ground Shoal around Nautilus Shoal and up along the southern Eastern Shore barrier islands all the way to Cobb Island). This shows the benefit of changing to the larger, stainless steel dart tag for the larger fish. Of eight such recaptures of large red drum (34-47 inches TL) during 2003-2004, seven of the fish had been tagged with the larger tag and only one with a smaller plastic dart tag. These returns show the importance of the shoals and sloughs along the barrier island beaches to adult, spawning size drum over the period from May 2002 to October 2004.

uring 2004-2005, tagging effort continued on large red drum in Virginia's waters. During 2005 the payoff finally occurred, i.e., 3 adult red drum (45-50 in. FL) tagged in Virginia were recaptured in North Carolina waters. One recapture was from the Corolla surf and another from the surf at Avon, each occurring approximately one month after having been tagged in September-October 2005 at the Little Island Fishing Pier in the Sandbridge surf zone. The other large drum (45 in. FL) was recaptured about two miles offshore of Frisco, NC in June 2005, having been tagged May 2003 at the southern end of the Eastern Shore Barrier Islands.

Tautog

The program's tautog tag and recapture data helped support the VIMS/VMRC position with the Tautog Technical Committee of ASMFC that the Committee accept Virginia's plan for maintaining status quo regulations on the state's largely recreational fishery. As a result at the 2002 ASMFC Committee meeting, Mr. Jack Travelstead of VMRC, in concert with Dr. John Hoenig of VIMS Fisheries Sciences Department, were able to convince Committee members that Virginia should be exempted from a 25% cutback in fish landings (reducing fishing mortality by 29%) put into effect for more northern states where the stock is more heavily fished (with the exception of Rhode Island). Catch-curve analyses using VMRC Virginia landing/dockside sample data, have also supported lower fishing pressure on the species in Virginia compared to states north of New Jersey. The tagging program data also make up a significant part (about 50%) of fisheries data used to characterize the size distribution of captured and released fish in the tautog recreational fishery within the species' southern management region (New Jersey to Virginia).

Equally as important, tag returns through 2005 show only three fish out of about 2,000 recaptured tautog (0.2%) have moved beyond Chesapeake Bay or Virginia offshore waters. Two fish tagged inside Chesapeake Bay in 1999 were recaptured in spring 2000, one at the jetties at Ocean City, MD and one at jetties at Oregon Inlet, NC. There is only one additional recapture of a Virginia tagged tautog beyond Virginia waters. A fish (13 in. TL) tagged May 2003 at the Chesapeake Bay Bridge Tunnel was recaptured during May 2004 at Cape Henlopen Harbor of Refuge, just inside the mouth (south side) of Delaware Bay.

These results have been used to strengthen arguments with the ASMFC Tautog Technical Committee that it is of no fishery management/conservation value to impose cuts on Virginia's tautog fishery (almost all recreational). Our data is counter to the concept that by reducing fishing pressure in Virginia, local tautog will likely move up the coast to enhance more northern populations. Not only is Virginia's fishery not over-fished (as in the northern management area), tagging data support that fish inside Virginia waters, or on wrecks and reefs offshore the state, do not migrate in significant numbers to the northern management area. The tagging data is based upon both small and large fish being tagged in the bay and offshore waters out to 30 miles.

In addition, a special analysis of the tautog tagging data and VMRC landing data, funded in 2003-2004 by the Recreational Fisheries Advisory Board/VMRC (J. Hoenig, D. Hepworth, and J. Lucy, PI's), strengthened Virginia's position on how our fishery warrants being managed somewhat differently than that in northern states. The tagging data analysis confirms there is little seasonal movement of tautog inshore-offshore, the case from New York north, nor do fish in Virginia waters migrate significantly north or south. Tagging results show that the majority of tautog recaptured remain at or near the site of initial tagging for periods from 1-4 years. The application of the tagging program data to these and other issues was highlighted in the spring 2005 Virginia Marine Resources Bulletin, the article "Angling for Answers" directed to the angling community and general public (the MRB is published by VIMS Sea Grant Marne Advisory Program).

Through efforts of our taggers, Virginia has also cooperated with University of Rhode Island in providing fin clip samples from tautog caught in Virginia for inclusion in a coast-wide genetic study of the fish population. The study was completed during 2004 and the results appear to show slight genetic distinctions in Virginia tautog versus fish sampled from New Jersey-New York-Rhode Island-Massachusetts waters, another indicator of limited mixing of the species between the extreme southern region and areas to the north (unlike the case with black sea bass and flounder, validated along with other studies by the Game Fish Tagging Program's database).

Cobia

Tag return data continue to document that a significant portion of sexually mature fish return possibly annually, or at least 1-2 times over periods of 2-5 years, to Chesapeake Bay waters. Spawning has been documented to occur during summer months in the lower Bay thorough other studies supported by the Recreational Fishing Development Fund. Adult cobia tagged inside the Bay have been recaptured again in the Bay after being at large for periods of 1-5 years, with several fish being recaptured in the Bay more than once over periods of 1-3 years post tagging. After leaving the Bay in late summer, tagged cobia have also been recaptured along North Carolina beaches in fall-winter months, and as far south as Florida (at St. Augustine and Melbourne, February-March 2002).

A long-distance record for coastal movement of cobia, the only such well-documented record know to exists, resulted from the tagging program. A 38 inch TL fish tagged in August 2000 at York Spit (in lower Chesapeake Bay) was recaptured in May 2004 at an oil-gas platform about in the Gulf of Mexico (about 30+ miles southeast of the mouth of the Mississippi River (Delta). Traveling a minimum, straight-line distance of 1600+ miles (in 1,367 days), the cobia covered more than one mile per day (overall average). Growing from 37 to 55 inches (FL), the fish was likely a 6-year old female (according to Dr Jim Franks, Gulf Coast Research Lab, Gulf Springs, MI, also doing tagging studies on cobia).

During 2005 and additional four cobia tagged in 2002, 2004, and 2005 were recaptured inside the lower Chesapeake Bay. This data continues to support the concept that either annually, or over multi-year periods, sexually mature cobia, utilizing Chesapeake Bay as a spawning and nursery area, return again to the bay in subsequent years.

Flounder

Data on undersized flounder tagged at numerous fishing piers in the lower Bay indicate such fish remain in close proximity to pier and jetty structures over periods of 2-17 weeks, behavior not previously documented in Virginia waters. A poster highlighting tagging results with flounder was presented at the Atlantic Estuarine Research Society Conference (March 2004, Salisbury, MD; 125 attendees). Results through summer 2005 were included in the September 2005 American Fisheries Society presentation (previously referenced).

The unusual flounder results at fishing pier and other structure sites (bridge tunnel sites) from 2000-2005 lead VIMS researchers, Dr. Mary Fabrizio and Mr. Jon Lucy, to submit a new research proposal to the Recreational Fisheries Advisory Board of VMRC. To go the next step and fill the data gaps from the conventional tagging data results, the project, funded in May 2006, will initiate an acoustic tagging study of flounder. Using moored, underwater hydrophones at three sites (a fishing pier, another “structure site” (artificial reef), and for comparison at a “non-structure” site, movement and presence-absence of acoustically tagged flounder will be continuously monitored to determine if primarily undersized flounder remain in proximity to such sites during the majority of each warm-water season.

Other Program Activities and Benefits

The VGFTP continues to be involved in the ASMFC Interstate Tagging Committee. The Committee has been developing guidelines for evaluating research-based and angler-assisted tagging programs to ensure program quality and long-term management/sharing of databases. Ultimately the effort should provide a general certification mechanism for marine fishery tagging programs. The Committee has developed a Tagging Programs web site which serves as a guide to anglers and organizations interested in becoming more involved in tagging, as well as a resource for determining tag types and tag color/number series used for various fish and shark tagging efforts.

A strong element of the VGFTP lies in its flexibility to take advantage of successful spawns of targeted species and direct significant tagging effort at the resulting large numbers of fish being caught and released by anglers. This was especially important during 2002-2003 when

the highest abundance levels in decades of small red drum (puppy drum) appeared in Chesapeake Bay and Rudee Inlet. Late summer-fall tagging efforts in Lynnhaven and Rudee Inlets produced some of the most interesting movement patterns to date as the fish began leaving the Bay, moving south along the North Carolina beaches during late August-November. Many of the fish also were documented to over-winter in the warm-water discharges of at least two power plants, the Elizabeth River "Hot Ditch" and the York River "Hot Ditch" (Yorktown Power Station). While abundance levels of yearling red drum dropped in our area during 2004-2005, some "puppy" drum continued to be tagged, especially during fall 2005 in Rudee Inlet. The results of such tagging, coupled with speckled trout double-tagged in Lynnhaven and Rudee Inlets, continue to document the often rapid movement during fall of such fish from Virginia waters to the beaches of North Carolina and into Pamlico Sound, sometimes fish ending up as far south as the Cape Lookout area.

Needs and Objectives

This project is multi-dimensional, fulfilling both research and data needs, as well as combining a serious element of public education. The VGFTP has selected targeted species that are not the subject of intensive efforts from other tagging programs, in which there are gaps in baseline data and information, and which are recreationally important. Targeted species currently include red drum, black drum, cobia, spadefish, tautog, speckled trout, summer flounder, sheepshead, triggerfish, and black sea bass.

The types of information the project attempts to generate includes: 1) information on fish movements and migratory patterns; 2) some information relating to growth rates (length); and, 3) some data helpful in suggesting, verifying or evaluating mortality rates and stock analysis.

The public education component of the VGFTP has three important aspects:
1) fostering of public interest in conservation and resource management by direct involvement in the program as volunteer taggers or through the reporting of recapture events and subsequent communication; 2) communication about scientific study of fisheries resources – how the process works, how information can and cannot be used, limitations; and 3) educating the public about resource needs, catch-and-release fishing, and fish handling techniques to improve resource survival of catch and release events.

Approach

The VGFTP utilizes a limited number of trained volunteer taggers from the recreational fishing community. Volunteers are enrolled on a "first-come, first-served" basis during December and January. Veteran taggers are required to re-enroll upon the same terms as new taggers to ensure fair access to the program for all Virginia recreational fishermen. Four training sessions are held in February and early March – one at the VIMS lab in Wachapreague, one at VIMS in Gloucester Point, one at VMRC headquarters in Newport News, and one in Virginia Beach. All new enrollees must attend a training session, where they receive information about the program, about handling and tagging fishing, about procedures used by the VGFTP, and where they receive their tagging equipment. Veteran taggers are not required to attend another seminar each year (although they are encouraged to attend and share ideas), and a fair percentage of veterans attend each year.

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 VGFTP hat or a pewter pin for reporting the recapture to the VGFTP. Taggers receive a letter summarizing the original tagging and detailing the recapture. All parties receive a VGFTP decal that is intended to help program visibility and provide program promotion.

Volunteer taggers receive a VGFTP "Conservation Award" certificate for tagging a minimum of 25 fish during the year; and the top taggers in each species are awarded a small plaque.

The program will continue to explore opportunities to conduct tag retention studies on target species and experiment with various tag designs. The program's tag manufacturer, HALLPRINT LTD., in South Australia is supportive of this activity and will supply experimental tags as warranted, generally at no cost (Mr. David Hall, Hallprint Lty., personal communication). The program shared tag retention data on T-bar and dart tags with researchers in Delaware as they are considering whether to initiate a weakfish (gray trout) tagging project. Results of from up to three and six month holding trials of tagged trout in tanks largely verify the results observed by our own tank trials in earlier years, i.e., T-bar tags, while only retained in the spiny dorsal fin area in 8-10 inch TL trout at a rate of about 79% (first dorsal fin area muscle) and 67% (second dorsal fin [with soft spines] muscle), still exceed retention of dart tags in the first dorsal fin area (a 64% retention rate). However, discounting tags with broken anchors during insertion, the higher first dorsal fin T-bar retention rate drops to 64%, considerably below the 80% retention level often used as a standard for tags considered to work successfully in a species.

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 a group of trained taggers. This occurred in 1999, 2000, and especially 2002 with juvenile red drum, 2001 with spadefish, and 2001-2003 with summer flounder. Strong tagging efforts continue in 2004 and 2005 with 1-2 year old flounder, plus greater numbers of larger flounder (>17 inches TL). In such instances, large, unexpected fish concentrations presented a "window of opportunity" to tag significant numbers of fish (a window which would have closed before funding and a new targeted tagging effort could have been mounted from scratch by research groups). The VGFTP was able to capitalize on the opportunity quickly. This type of situation could even occur in a species not targeted by the VGFTP: a simple memorandum to taggers stating the addition of a new species to the program and requesting a targeted effort due to the special needs or opportunity could result in tagging efforts commencing in less than a week.

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 2005 was completed in May 2005 and a copy provided to the Recreational Fishing Advisory Board. Particularly valuable information on black sea bass, cobia, summer flounder, red drum, spadefish, speckled trout, and tautog were presented and discussed in the 2004 and 2005 annual reports.

Budget
(follows as a separate page)

BUDGET

Proposed Budget for January 1, 2007 to December 31, 2007

BUDGET CATEGORY			DIRECT	MATCH
I. Salaries				
a. Jon Lucy, Co-PI	1.5 mm/1 mm		$ 9,481	$ 6,320
b. Data Technician, TBN	2 mm		$ 5,296	$ -
Subtotal			$ 14,776	$ 6,320
II. Fringe Benefits (30%)			$ 4,433	$ 1,896
Total Salaries and Fringe Benefits			$ 19,209	$ 8,216
III. Publications (Annual Report, Recapture Updates)			$ 1,500	
IV. Travel (Local travel for field work, Tagging work group meetings, presentations at scientific meetings and association clubs.)			$ 3,500	
V. Supplies			$ 10,706	
20,000 T-Bar Tags @$430/1,000		$ 8,500		
1,000 Steel Dart Tags @$1		$ 1,000		
30 Tagging Guns @$30		$ 900		
32 Tagging Needles @$3		$ 96		
35 Measuring Boards @$6		$ 210		
Subtotal		$ 10,706		
VI. Total Direct Costs			$ 34,915	$ 8,216
VII. Indirect Costs - 25% VMRC			$ 8,729	
Indirect Costs - 45% on Match				$ 3,697
Indirect Costs - 20% from Direct				6,983
VIII. TOTAL PROJECT COSTS			$ 43,644	$ 18,897

6/15/2006

Note: no salaries, fringe benefits or indirect costs taken on time devoted by VSWFT personnel despite substantial time commitment or VSWFT funding, since all funding for VSWFT programs is provided directly by MRFAB

Virginia Game Fish Tagging Program
Budget – 2007
VMRC Portion

Tagging Awards		
600 Hats @ $6.50 each	3900	
600 T-Shirts @ $6.00 each	3600	
150 Pewter Fish Pins @3.00 each	450	
1000 Decals @ .60 each	600	
500 Digital Stickers @ 1.75 each*	875	
300 Tackle Organizers @ 2.50 each*	750	
12 Tag Plaques @ $14 each	168	
Conservation Certificates	500	
Data Sheets and Cards	500	
	11343	
Postage and Shipping		
U. S. Postage	1300	
UPS Shipping	6500	
	7800	
Supplies (Paper, Envelopes, Mailers, Tape, Bubble Wrap etc.)	800	
Travel	1200	
Total		**$21,143**

***VGFTP is exploring a small tackle organizer with VGFTP logo on it as a recapture award (total price approx. $4.25) as an option for fishermen; cost savings on a per award basis of approx. $1.00-$1.50 per award, if feasible. Still would use hats and t-shirts, but would have another, less expensive choice for anglers**