FISHERIES MANAGEMENT SECTION

American Fisheries Society

Volume 28, Issue 1 April 2011

President's Message

BRIAN GRAEB

FMS Members-

I am sitting in South Dakota staring out the window at the possibilities of spring...hoping for rain This would be a welcome sight in the midst of a prolonged drought.

I attended the Institute of Fisheries Management (IFM) meeting in Edinburgh Scotland as a representative of the Fisheries Management Section. I believe this is the fourth cycle of exchanges between the societies. In short, the experience was fantastic. I learned about the issues facing fisheries biologists in the UK, and they were genuinely interested in learning about our issues in North America. It is apparent that despite radically different philosophy's, political structures, fish species, anglers, etc., the issues faced by FMS and IFM members are very similar. Habitat management, stream passage, angler and commercial harvest, and genetic concerns were some of the themes of the IFM meeting. It was a tremendous learning experience for me and I felt a little guilty that no one else from FMS could share it. I expressed this notion to several IFM members and we discussed the possibility of including young professionals from both sides in the exchange program. The IFM will pursue this option, and I tasked the Young Professionals *ad hoc* committee to develop a plan for FMS. We hope to discuss this idea at the annual business meeting in Little Rock. Stay tuned.

> "I attended the Institute of Fisheries Management (IFM) meeting in Edinburgh Scotland as a representative of the Fisheries Management Section. What a great experience!"

I also wanted to update the membership on the goals of our two *ad hoc* committees. The Young Professionals committee, chaired by Quinton Phelps, is tasked with developing ideas to enhance the value of FMS to students and young professionals. They will present recommendations to the membership at the annual business meeting. The second committee will evaluate the future of the hall of excellence. This committee, chaired by Mark Porath, was spawned after a discussion at our last business meeting on how better to showcase the Hall of Excellence. Currently, the collection of inductee plaques is housed at the Aksarben Aquarium in Nebraska. Many members felt that FMS should explore ways to expand this collection so that it would have a broader reach. Some of the ideas included a mobile Hall of Excellence to be showcased at various meetings, replicating the displays to several regional centers, or moving the entire display to a more popular venue (e.g., Bass Pro Shops). The committee is currently gathering information and discussing options. They will deliver the report to the membership at the annual business meeting.

As always, please contact us if you have any questions, comments, or input. I can be reached at Brian.Graeb@sdstate.edu.

Thanks!

Brian

INSIDE THIS ISSUE:

Red Snapper Rodeo

In 1988 the first Gulf of Mexico red snapper stock assessment found that the population was undergoing overfishing, and estimated that a reduction in fishing mortality of between 60 and 70 percent was needed to rebuild the stock (Goodyear 1988[1]). In response to these findings, managers began implementing minimum size limits, bag limits, reducing total allowable catch, and restricted harvest seasons. After almost two decades of continually constricting regulations, the 2011 stock assessment showed that the red snapper population was no longer undergoing overfishing, but was still overfished, and was therefore in a state of rebuil ing. In response to the 2011 stock assessment, the annual catch limit has been increased each subsequent year; with bag limit (2 fish/day) and minimum size limit (16“) remaining the same. However, due to a dramatic increase in the recreational popularity of red snapper over the last decade the recreational quota has been reached in fewer days, resulting in a shorter season each year.

Many recreational anglers don’t understand why the season is continually shortened when they’ve seen and reported an abundance of red snapper for the last few years. Anglers have voiced discontent with the seemingly slow response of management to what appears to be a thriving population. In addition, some anglers see the Marine Recreational Information Program sampling, as the only data used in stock assessments instead of the several types of fishery-dependent and -independent data that are actually incorporated into each assessment. While managers do use the best available data to set regulations, anglers are correct that the dataset is limited.

In June 2012, the Louisiana Department of Wildlife and Fisheries (LDWF) applied for and received an Exempted Fishing Permit (EFP) from National Marine Fisheries Service (NMFS) for the collection of red snapper, during the closed season, by recreational anglers at select fishing tournaments. The purpose of the EFP was to study red snapper not normally sampled by recreational fishing surveys. The study objectives were to increase the available data on red snapper life history, compare biological parameters of fish collected under the EFP to those collected by current fishery-dependent sampling methods, and to assess the viability of single-use tags as a management tool. This study also worked towards improving manager-angler relations by providing anglers with an extra opportunity to fish for this popular sport fish, gave anglers a chance to see firsthand what information managers utilize, and provided managers with more samples than could be collected by biologists alone.

The LDWF worked with the other four Gulf States fisheries departments in the execution of this project and the collection of biological data (including lengths, sex, fecundity, age, and capture habitat). The EFP allowed for a maximum harvest of 1,600 red snapper spread across seven rodeos, however, a last minute season extension incorporated two of the rodeos into the regular season, resulting in five eligible out-of-season rodeos. At those five rodeo 1,199 tags were distributed, (200/tournament, except the Destin Rodeo which received 400) resulting in 657 (55%) tagged fish turned in for sampling, 381 (32%) tags returned unused, and 161 (13%) missing tags. Specimens had a mean total length of 24.79” and a mean total weight of 7.79 lbs.

Upon completion of all appropriate lab work a comprehensive database will be assembled and sent to the contributing Gulf States fisheries departments and NMFS for use in future stock assessments.

[1]Goodyear, C. P. 1988. Recent trends in the red snapper fishery of the Gulf of Mexico. National Marine Fisheries Service, Southeast Fisheries Science Center, Miami Laboratory Report CRD-87/88–16, Miami, Florida.

Jim and Ben Hatcher (left to right) of Theodore, AL with their tagged red snapper at the Alabama Deep Sea Fishing Rodeo July 21,2012 on Dauphin Island, AL. Photograph courtesy of Press-Register/

Analysis of grass carp movements in an Appalachian reservoir system

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Triploid grass carp *(Ctenopharyngodon idella)* are used as a biological control for nuisance vegetation such as hydrilla (*Hydrilla verticillata*) in numerous large reservoirs. In 2011, the Virginia Department of Game and Inland Fisheries (VDGIF) approved the introduction of triploid grass carp by Pulaski County Officials into Claytor Lake, VA to control a rapidly-expanding hydrilla infestation (Photo 1). Claytor Lake is an impoundment of the New River with a hydraulic retention time of 63 days, and a shoreline development index of 10.65. Since grass carp are known to be highly migratory, VDGIF biologists are concerned grass carp will immigrate seasonally into the New River, thereby impacting native vegetation. Above Claytor Lake, the New River is unimpeded for 39 km, and supports a trophy smallmouth bass (*Micropterus dolomieu*), walleye (*Sander vitreus*), and muskellunge (*Esox masquinongy*) fishery. We initiated a multi-year telemetry study concurrent with annual grass carp stockings to investigate potential intra- and inter-system movement patterns in Claytor Lake and the New River.

A total of 79 radio-tagged grass carp have been released into Claytor Lake, 34 in 2011 and 45 in 2012. Tagged fish are tracked on a monthly basis by boat, seaplane, or by truck. We measured distance between tracking locations using the Euclidean distance formula. We compiled mean monthly values for fourteen environmental predictors and completed a principal components analysis (PCA). We then used the significant PCA factors in a step-wise multiple regression analysis to determine important predictors of grass carp movement in Claytor Lake.

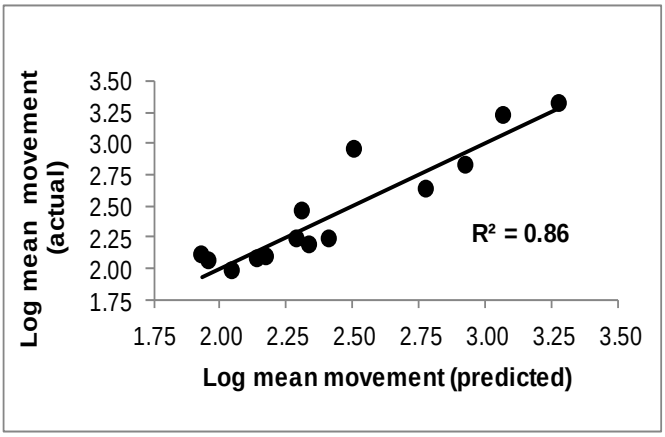

Table 1.— Results of a stepwise multiple regression used to predict grass carp movements

	Factor descriptor	*P*	Partial R^2	Directional correlation
Factor 1	Temperature	<0.0001	0.64	+
Factor 2	Habitat	0.0075	0.16	+
Factor 4	Age	0.075	0.06	-

(Continued on page 4)

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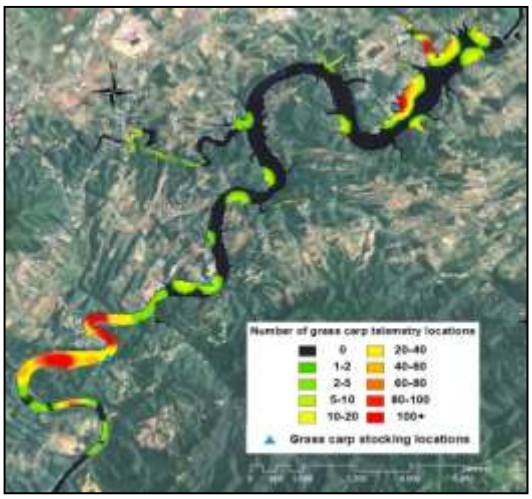
Tracking results of the 2011 cohort indicate moderate average grass carp movements for the first 2 months post-stocking (1.8 km mo^{-1}), and thereafter a predominantly sedentary behavior (0.26 km mo^{-1}). The highest densities of grass carp telemetry locations coincided with the major hydrilla beds present in Claytor Lake (Figure 1). We have not observed emigration from Claytor Lake by the 2011 cohort; however two of the radio-tagged grass carp stocked in 2012 recently entered the New River above Claytor Lake. Multiple-regression analysis using significant factors from PCA (temperature, habitat, and age) accounted for 86 percent of the variation in log mean monthly grass carp movement in Claytor Lake (Table 1, Figure 2).

The current snapshot of grass carp movement patterns indicates temperature is the main driving variable for grass carp movement. As hydrilla control is approached, and as fish age, we expect to gain a better understanding of the movement patterns and migration potential of grass carp in this system. This research is one component of a large-scale grass carp study in Claytor Lake. Beyond telemetry work, we are conducting an exclosure study to determine grass carp herbivory rates on both hydrilla, and native vegetation. Additionally, we are monitoring annual grass carp and hydrilla production, along with grass carp population dynamics to simulate hydrilla coverage at various levels of grass carp standing biomass.

We thank VDGIF, and the Federal Aid in Sportfish Restoration program for funding this research, and Pulaski County for supplying the grass carp used in the study. .

Large hydrilla bed in Claytor Lake in September 2011.



Density map of radio-tagged grass carp locations in Claytor Lake. The highest densities of locations coincide with the major hydrilla beds of the lake.

INTERACTIONS BETWEEN FISH AND ANGLERS: A SPATIAL ANALYSIS OF FISH VULNERABILITY TO ANGLING

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For recreational fisheries where fishing effort is not typically controlled with regulations, assessing fish stocks is vital to fisheries management to prevent stocks from being overfished. Aside from size selectivity, most fisheries assessment models assume that fish populations are comprised of fish that are equally vulnerable to angling (Cox and Walters 2002). However, it is unknown how anglers target fish in relation to fish habitat preference. We assessed whether habitat selection by fish or anglers could cause a portion of a fish population invulnerable to angling. We then used data from angler tag returns to empirically test if there was a portion of a population that was invulnerable to angling. This study was conducted on a 2,450 ha lake in North Central Florida. This lake has a thin band of emergent vegetation around the perimeter and very little vegetation in the open water areas.

The locations of anglers were sampled to evaluate the spatial distribution of fishing effort from November 2010 through October 2011. The spatial distribution of largemouth bass *Micropterus salmoides* was also measured using radio telemetry. Eighty-one largemouth bass were captured using electrofishing and angling in the fall of 2010. The fish were also tagged with an external reward tag ($200) to obtain angler catch data on the tagged fish. Fish were tracked on the same days that anglers were surveyed.

Largemouth bass and bass anglers did completely not overlap spatially. Three hundred thirteen anglers were categorized as targeting largemouth bass out of 832 anglers surveyed. Ninety-one percent of the largemouth bass anglers were targeting the onshore littoral zones of the lake. Fish were divided into three habitat preference groups based on how often they were located onshore; with 39 onshore fish that selected littoral habitats, 19 offshore fish that selected open water habitats, and 23 generalist fish that extensively used both types of habitats. Assuming the distribution of tagged fish was representative of the largemouth bass population as a whole, about a third of the fish appeared to be invulnerable to angling based on their location at any one time. Results from the tag returns indicated that 58% of all radio tagged fish were caught at least once by anglers. Forty seven percent of the offshore fish were caught, 65% of the generalist fish were caught, and 59% of the onshore fish were caught. Results from the Chi-square test indicated there was not a significant difference between the portions of fish caught based on the habitat preference of the fish (Chi-square = 1.39, P = 0.45), indicating all fish had similar vulnerabilities to angling regardless of the fish's habitat preference.

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Differences in the distributions of largemouth bass anglers and largemouth bass lend support to Martin (1958) and Cox and Walters (2002) hypothesis that fish populations are often comprised of fish that are either vulnerable to angling or invulnerable to angling. However, data from the tag returns indicated that even though a subset of fish spent most of the time in areas invulnerable to angling, ultimately they were captured at similar rates to onshore fish. Therefore, the movement of largemouth bass between areas targeted and not targeted by largemouth bass anglers could have been sufficiently high such that all fish did not remain invulnerable to angling or there were other factors such as learning and hook avoidance or angler behavior influenced their vulnerability.

With recreational anglers being a major component in many of today's fisheries, it is important to understand the dynamics of angler behavior. The spatial distribution of effort can significantly impact both the fish population and the vulnerability of individual fish. Not only is it possible for recreational anglers to overfish populations (Post et al. 2002; Lewin et al. 2006), but with selective, non-random targeting of individuals within a population it might also be possible to alter the genetic structure of the population by targeting individuals with certain life history traits (Philipp et al. 2011). Additionally, the non-random distribution of fishing effort can essentially create protected areas for fish in systems where the distribution of anglers is not the same as the distribution of the targeted species. This can happen when the majority of a population congregates in certain areas or when fish are distributed throughout a large area and anglers are limited by the number of access points and distance (such as many costal fisheries). Incorporating these differences in vulnerability to angling into stock assessment models can allow for more accurate predictions of stock status. Spatial differences in vulnerability to angling may offer unique alternatives to the use of protected areas as management tools, and thus, should be considered when assessing fish stocks.

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Fish Management Call for Awards

Hello AFS Fisheries Management Section (FMS) Members. Each year the FMS accepts nominations for the Award of Excellence, Award of Merit, Conservation Achievement Award, and induction into the Fisheries Management Hall of Excellence. There is a description of each award on the FMS web site http://www.sdafs.org/fmsafs/awards/ including past recipients and nomination criteria.
Please take the time to nominate a mentor or colleague who has made significant contributions in fisheries management. Most of you know someone who is deserving of one of these awards. Please consider submitting a nomination by **May 15, 2013** in the form of a detailed letter describing the nominee's qualifications for the specific award. Electronic versions of nominations are requested to facilitate Awards Committee review. I look forward to your nominations. Please feel free to contact me if you need more information.

Thanks,

Mark Porath, FMS President-elect
Aquatic Habitat Program Manager
Nebraska Game and Parks Commission

Detecting fish movements on a budget

Passive integrated transponder (PIT) tag systems are used extensively in the Pacific Northwest for monitoring the behavior and survival of juvenile and adult salmonids in the Columbia River Basin. PIT technology is a type of RFID (radio frequency identification) which operates at low frequencies. Study animals are implanted with a PIT tag and movements of animals through antennas are then recorded. PIT tag systems are composed of a transceiver and a wire loop antenna. The transceiver powers the tags and reads unique ID codes transmitted by the tags by energizing one or more loops of wire to generate a magnetic field. When a tag enters the field, it becomes energized and transmits a unique ID code which is received by the wire loops and is decoded by the transceiver. The PIT tag codes are synced with a time and date stamp and data is often collated to a computer or memory chip for later download at the site or autonomous upload to a database. Systems can be installed in remote locations and powered by various on-site power sources (solar panels, thermoelectric generators, hydropower, wind turbines, etc.) to minimize the need for grid power, and remote communications can be established through a variety of means (cellular, satellite, or meteor burst modems, etc.).

The Applied Research Program in Ecological Physiology at the Abernathy Fish Technology Center has the technological knowledge and tools to design and develop remote monitoring devices for detecting fish, frogs, or other aquatic organism movements. The Program has developed stationary remote monitoring systems to measure fish movements through water diversions, culverts, estuarine habitats, near dams, and in streams as well as mobile tracking solutions. These systems, designed to be 'biologist budget' friendly, are individually tailored to the needs of each unique project and include biological (animal size and behavior), environmental (stream size, substrate characteristics, hydrology) and logistical (remote communication and data access, duration of deployment) considerations. Our staff can help you customize a design for your specific needs.

For a detailed standard operating procedure (SOP) on PIT tag interrogation system construction (3.99MB PDF file), please see the following website: http://www.fws.gov/aftc/PIT%20Tag%20Interrogation%20System%20%20Construction%20SOP%2006142011.pdf

Northern Snakehead Range Expansion Continues in Mid Atlantic States

Recent catches of northern snakeheads by biologists and anglers suggest the range of this exotic fish is expanding in numerous mid Atlantic states including Maryland, Delaware, New Jersey, and Virginia. Abundance also appeared to be rising in newly colonized areas, but some evidence suggests abundance in Potomac River tributaries initially colonized over a decade ago may be stabilizing.

Virginia Department of Game and Inland Fisheries boat electrofishing samples in areas originally colonized (three core tributaries sampled annually since 2006) yielded a 7.5 fish per hour catch rate in 2011 which represented a slight decline from the record catch of 2010 (7.8 fish per hour). ANOVA (alpha=0.05) detected significant differences between catch rates of 2010 and 2011and most other years (but no difference between 2010 and 2011). The hypothesis that northern snakehead abundance has stabilized in these creeks is intriguing and will be further evaluated.

Range expansion continued within Virginia as well. Known colonized waters included the entire mainstem Potomac River from Great Falls downstream to Chesapeake Bay and several small drainages feeding directly into the Bay adjacent to the mouth of the Potomac. Given recent trends, colonization of the Rappahannock River from the mouth upstream was expected in 2012, but fish were found in a Rappahannock River tributary in summer 2012 near an angler access point a short distance below the fall line. Subsequent sampling turned up numerous snakeheads suggesting the second major river drainage in Virginia has been colonized. Salinity tolerances were greater than anticipated, and snakeheads appeared to be utilizing freshets to travel across otherwise inhospitable stream reaches and then travelling upstream to lower salinities as floodwaters receded.

Recent analysis suggested growth rates were faster than originally estimated. Growth increments (mm/d) of recaptured Floy-tagged fish (n=51, mean time-at-large 310 days) were compared to growth increments derived from otolith annuli of sacrificed fish. Fish tagged between 400 and 500 mm TL (n=22) grew an average of 0.44 mm/d, while the growth increment from age 1 and 2 otolith fish was 0.46 mm/d. Annual growth increments for fish aged 1-4 (mean length at age of 394, 563, 644, and 721 mm TL). Minimal growth was observed after fish attained 700 mm TL (age 4).

For more information, contact John Odenkirk 540-899-4169 x117 or john.odenkirk@dgif.virginia.gov

Post-lavage survival tested in a natural system

Andrew Barbour, PhD Candidate
University of Florida

Understanding the trophic dynamics of a fishery is necessary for a complete management framework to be successfully implemented. While multiple research methods exist to collect data on trophic dynamics, the use of pulsed gastric lavage (PGL) has been one of the most commonly used techniques in fisheries science. PGL forces the study subject to regurgitate food items by flushing the stomach with pressurized water from a tube inserted past the esophagus. This technique is popular in fisheries management because the results of multiple experiments support the notion that PGL is a non-lethal method. However, these prior studies have been conducted in laboratory settings or relied on caging individuals in the wild, thereby eliminating additive effects found in natural systems that may increase mortality rates (e.g., predation).

Working with collaborators Ross Boucek of Florida International University and Dr. Aaron Adams of Mote Marine Laboratory and the Bonefish and Tarpon Trust, we recently published what we believe to be the first study of PGL on fish released back into a natural, uncontrolled system. This study, "Effect of pulsed gastric lavage on apparent survival of a juvenile fish in a natural system," was published in the Journal of Experimental Marine Biology and Ecology, and suggests a result that runs contrary to previous findings. In the experiment, we uniquely marked 200 juvenile common snook (*Centropomus undecimalis*) with PIT tags in two study sites and lavaged half of the fish in each location. Using an array of autonomous PIT tag antennae, which function like underwater tollbooths, we resighted 90% of the marked fish at least once. This high detection rate allowed a thorough investigation of the effect of PGL on survival.

Using the Barker joint data survival model, we found that pulsed gastric lavage significantly reduced apparent survival (apparent survival = 1 – mortality – emigration) in both study sites. In fact, the PGL effect reduced maximum likelihood estimates of survival by 12.0 - 17.4%. Since we calculated apparent as opposed to true survival, the modeling approach itself does not shed insight into whether the procedure led to mortality or to emigration following the traumatic event. However, using PIT tag antennae outside of the creeks, we detected 38% of lavaged fish and 53% of non-lavaged fish as emigrating during the study. This disparity in emigration rates suggests the declines in apparent survival were due to mortality and not movement.

Pennsylvania Chapter Hosts Otolith Workshop

This past April, the Pennsylvania Chapter hosted an otolith and aging workshop at the University of Pittsburgh's Pymatuning Laboratory of Ecology in Linesville, Pennsylvania http://www.biology.pitt.edu/facilities/pymatuning). Although only 32 AFS members registered, the workshop attracted fisheries professionals and students from Pennsylvania, West Virginia, Ohio, New York, Delaware, New Jersey, Virginia, Kentucky, and Iowa. For more info contact Bob Ventorini at rventorini@pa.gov.

AMERICAN FISHERIES SOCIETY

PENNSYLVANIA CHAPTER

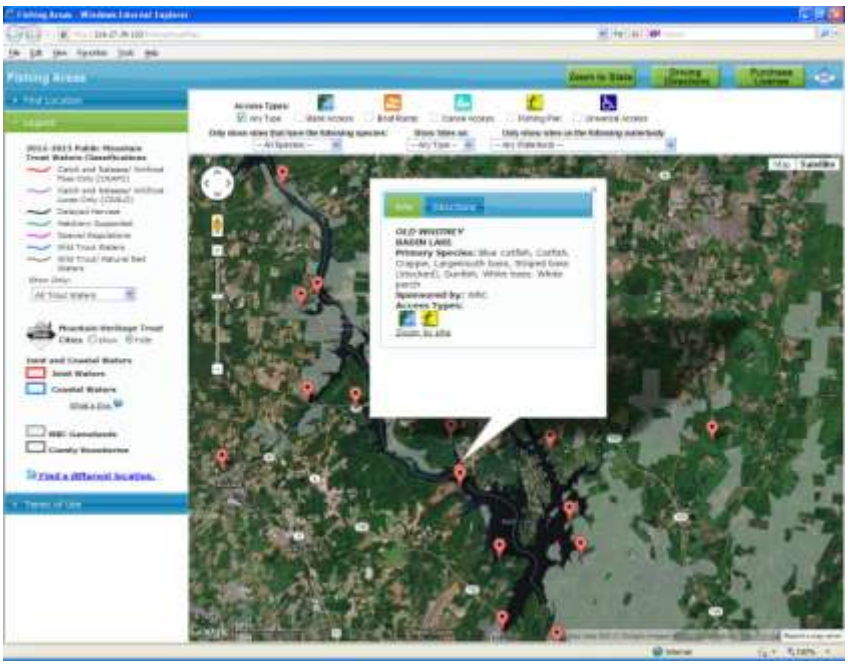
Online Databases for North Carolina Anglers
Lawrence Dorsey, North Carolina Wildlife Resources Commission

The North Carolina Wildlife Resources Commission recently added two online databases that will provide detailed information for anglers across North Carolina. The first database contains an online map of fish attractor locations across the state to the agency website. The interactive map can be found at http://216.27.39.120/WrcMaps/WRCFishAttractors.htm It is searchable by waterbody and each site contains information about the type of fish attractor used. A separate link contains images of the attractors used and future additions will feature detailed information about the fish attractor program. Along with the interactive map, anglers can also download the GPS coordinates for these attractors to be loaded onto their own GPS devices.

Over 500 fish attractors are now in place on over 50 waterbodies in North Carolina. Prior to the creation of the online map, coordinates for these attractors were kept on file in district and regional offices and were only available to the public on request. An additional advantage of this setup will be that field staff can update the map in real time as attractors are added or removed.

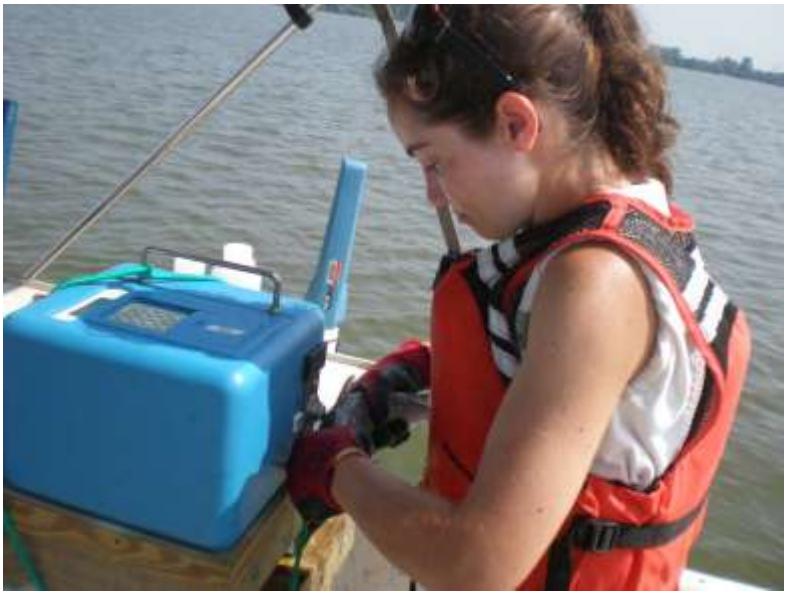
An additional interactive map features information on over 500 publicly accessible areas available to anglers across North Carolina. These areas include several types of waterbodies and users can filter their searches by amenities (piers, boat ramps, bank fishing, etc.) as well as by county or proximity to their location. An additional feature is that queries can also be filtered for universally accessible areas for those anglers with special needs.

The information displayed for each area contains the formal name of the area, waterbody type, and amenities present. Future upgrades to this database will include pictures for each site and the ability to link fisheries research and survey reports to the database to provide anglers with additional information for each site. As with the fish attractor database, staff members are able to modify the database in real time. The fishing areas interactive map can be found at http://216.27.39.120/FishingAreasMap/



Blue catfish in tidal tributaries of Chesapeake Bay: moving the science forward for informed management of this invasive species

Alicia J. Norris, Mary C. Fabrizio, and Troy D. Tuckey, Virginia Institute of Marine Science, Gloucester Point, VA



The blue catfish *Ictalurus furcatus* is native to the Mississippi, Missouri, and Ohio River basins, but was introduced in the 1970s and 1980s to the James, York, and Rappahannock Rivers of Virginia to create fishing opportunities for recreational anglers. It was first introduced to freshwater tidal habitats but is now found in both upriver, non-tidal habitats and downriver, mesohaline habitats (salinities up to 14.7 psu). Although this species has spread to rivers throughout the Chesapeake Bay region, little is known of their ecological role in these systems. What we do know is that blue catfish attain large sizes (> 45 kg), are long-lived (≥20 years), become piscivorous as adults, and can represent a substantial portion of the biomass in standardized fish collections. As such, there is a potential for blue catfish to adversely affect native aquatic organisms, some of which are the focus of conservation efforts in the region. In particular, freshwater mussels, white catfish *Ameiurus catus*, Atlantic menhaden *Brevoortia tyrannus*, river herrings *Alosa* spp., and American shad *Alosa sapidissima* are thought to be vulnerable to predation by blue catfish. Blue catfish populations in Chesapeake Bay are expanding, both in abundance and spatial distribution; the management of this species is hampered by numerous factors, including the complex, poorly known ecology of blue catfish, conflicting recreational and commercial objectives, low market demand, and human consumption concerns from suspected contaminant accumulation.

Researchers at the Virginia Institute of Marine Science (VIMS) are working closely with state (Virginia Department of Game and Inland Fisheries, Virginia Marine Resources Commission, Maryland Department of Natural Resources), federal (NOAA, EPA), state and regional partnerships (Potomac River Fisheries Commission, Chesapeake Bay Program), and university (Virginia Commonwealth University, Virginia Tech) collaborators to understand the increasing abundance and distribution of blue catfish in Chesapeake Bay tributaries. A coordinated management plan seeking to control the spread and growth of these populations was developed as part of the Sustainable Fisheries Initiative in Chesapeake Bay. The necessary first steps are to estimate population size and to understand connectivity between adult blue catfish in freshwater reaches and those inhabiting estuarine reaches.

During summer 2012, researchers at VIMS embarked on the first year of a multi-year mark-recapture study focused on the James River, Virginia, which supports a trophy fishery for this species. We chose coded wire tags (CWTs), because these tags were retained by blue catfish and could be applied efficiently to large numbers of fish. Over a 30-day period, starting in July, blue catfish (≥ 250 mm FL) were captured with the assistance of a commercial fisher (or waterman). Nearly 16,000 tagged fish were released in the James River near the Chickahominy River confluence, and almost 1,000 fish were recaptured. A second year of tagging is planned during summer 2013. Also starting in summer 2012, blue catfish (N=750; ≥ 300 mm FL) in the tidal freshwater reaches of the Potomac River were tagged by MD DNR fisheries biologists using dart tags to gain a better understanding of the general patterns of blue catfish movements in estuarine environments. Each blue catfish received two tags to estimate retention. Rewards will be given to anglers for reported tags.

The multi-faceted nature of this study presents new challenges to fisheries researchers but also provides opportunities to collaborate, work alongside local watermen, interact with the recreational angler community, and field test CWTs for tagging adult fish. Ultimately, results from this study will be combined with other ongoing research efforts (namely, developing relative abundance assessment methods, estimating historical biomass from research surveys, describing trophic interactions and native species effects, and understanding contaminant dynamics) to inform future management actions.

ON-THE-GROUND PROJECTS

Spotlight on Shoreys Brook Diadromous Fish Passage and Habitat Restoration

Located in South Berwick, ME this project will restore approximately 800 feet of habitat for diadromous fish species and enhance approximately 4.3 miles of habitat in Shoreys Brook. The Great Works Regional Land Trust completely removed a partially-breached dam and restored the streambed to its approximate original condition in 2011, and is coordinating with the Maine Department of Transportation to replace a failing perched culvert with an open-arch culvert in the summer of 2012. The project was identified as a priority by the Atlantic Coastal Fish Habitat Partnership.

Former dam on Shoreys Brook

The former dam was located at head-of-tide on Shoreys Brook, approximately 1,500 feet upstream from its confluence with the Salmon Falls River. The culvert is located upstream of the dam. Shoreys Brook is a small, second-order stream surrounded by upland forest. The multi-habitat property, through which the brook runs, is managed to promote wildlife and biodiversity and the greater watershed includes upland forest, forested wetland, and open marsh.

The dam and the failing culvert together rendered Shoreys Brook impassable to diadromous fish species. Additionally, significant erosion has a negative impact on Shoreys Brook and the Salmon Falls River, and the eroded stream bank presents a significant public safety hazard. Dam removal and culvert replacement should allow resumption of normal in-stream flows that, over time and assisted by stream restoration efforts, will provide access to suitable diadromous fish habitat. The project should also eliminate the ongoing source of sedimentation discharging into the Salmon Falls River, eliminate the potential for Shoreys Brook to create a new channel due to erosion, and eliminate a significant public safety hazard.

With the assistance of US Fish and Wildlife Service funds, Great Works Regional Land Trust contracted with a local vendor to remove the partially-breached dam. Many additional partners (federal, state, private, and non-governmental organizations) have or will contribute to various components of the project.

In 2012, the project was expanded to include the replacement of a failing bridge located upstream of the original project site, which could take place as early as 2013.

Project text and photo provided by Great Works Regional Land Trust.

Project Partners

- National Oceanic and Atmospheric Administration/ Conservation Law Foundation
- US Fish and Wildlife Service
- Coastal Conservation Association – New Hampshire
- Great Bay Trout Unlimited
- Piscataqua Region Estuaries Partnership
- Local Wetland Scientist
- Stantec – Consulting Engineer
- Great Works Regional Land Trust
- Atlantic Coastal Fish Habitat Partnership
- Gulf of Maine Council
- American Rivers
- Maine Corporate Wetland Restoration Partnership
- Maine Department of Transportation

For more information on the Partnership visit us at:
www.atlanticfishhabitat.org

Young Professional Activities Committee

Quinton Phelps, Travis Neebling, Marty Hamel, Tony Sindt, Tyler Stubbs

This group was formed during the 2012 FMS business meeting to determine how the subsection can increase awareness and involvement of FMS to young professionals and students. We have had several brainstorming sessions and have identified a range of potential items that may increase participation by young professionals and students. Our committee will continue to evaluate these ideas and we are hopeful to receive more insight from the FMS membership. Please email your thoughts and additional ideas to Quinton Phelps (quinton.phelps@mdc.mo.gov)

Activities identified by the committee to increase awareness and involvement by young professionals:

1. Have an additional FMS meeting at AFS that is tailored to students and young professionals. We would provide a free fish fry and beverages.
2. Offer two travel grants each year to attend the AFS meeting (one to a young professional one to a student). This would be very similar to the Skinner Award.
3. Provide a brochure/web info on why it's important to be part of FMS (professional development, meeting your peers, etc)
4. Personally walking around the meeting and handing out flyers to "young" people.
5. Have a representative from the Fish Management Section provide a presentation/talk/whatever at the state's annual chapter meeting. Also distributing brochures at this time and really try and recruit.
6. Have a booth at the trade show with FMS information...and a simultaneous raffle.
7. Formally or informally poll students and young professionals as to why they are not renewing their memberships or dropping out after securing employment.
8. Encouraging a President's Hook (perhaps tied in with a Student's Angle or Guest article written by our committee) in the Fisheries magazine on the benefits of section membership (not necessarily FMS specific).
9. Work with the Education Section and Student Subsection to engage, inform, and recruit new members.
10. Develop an online forum for fisheries management information
11. Create a mentor program to increase interaction between students/young professionals and existing fisheries management section members.

FMS WEBSITE UPDATED

We are happy to announce that the FMS website (http://www.sdafs.org/fmsafs/) is going to be re-designed later this year. We hope that the new website will better serve members needs. Among many other features, the website will have an easier to use interface, more up-to-date content, and an expansive archive.We are currently soliciting member input on this process. If you have any thoughts or recommendations, please forward them to the webmaster: Travis Neebling (Travis.Neebling@wyo.gov). We look forward to better meeting members needs with the new website.