June 2015 Fisheries GIT Updates

2015

List of Updates in order of appearance as of 6/1:

- US Army Corps of Engineers
- Mid-Atlantic Fishery Management Council
- Oyster EBFM Indicators– Amy Freitag (VASG/NOAA Post doc)
- Delaware Department of Natural Resources and Environmental Control-Division of Fish and Wildlife
- Potomac River Fisheries Commission
- Virginia Fishery Resource Grant Program
- Virginia Marine Resources Commission
- Habitat GIT Management Strategy Summary
- Oyster Reef Ecosystem Services Project
- Choptank Oyster Restoration Update (separate document)
- Pianktank Restoration Update (verbal only)
- CBF Oyster Reef Three Dimensionality (brochure at meeting)

USACE Updates

USACE Baltimore District:

A substrate contract was awarded in August 2014 to Argo Systems, LLC, for Harris Creek (57 acres) and the Tred Avon River (24 acres). Work is expected to be completed by mid-June. Due to lack of availability of shell substrate, some acreage in the Tred Avon River may not be completed. With completion of construction and seeding in Harris Creek this year, the restoration goal will be met with over 370 acres completed. Monitoring will continue in Harris Creek to determine restoration success per oyster metric goals. The Tred Avon River tributary plan is undergoing final review and will be completed this FY. A supplemental EA for shallow water and seed-only sites in the Tred Avon River is being developed with completion planned for FY16. The Baltimore District and its partners (DNR, NOAA, ORP) have engaged with the Maryland's Watermen Association to discuss path forward for working more closely together throughout the process.

USACE Norfolk District:

An oyster reef construction/rehabilitation contract was awarded in spring 2015 for the Great Wicomico River in Virginia. That work is scheduled for Jun-August of 2015 and includes approximately 15 acres of oyster reef using fossil shell dredged from the James River. Work continues on planning for the Piankatank River oyster reef construction in the summer of 2016 with TNC and VMRC. Those reefs will be built with alternative substrate, the most likely material to be used is granite. NEPA and planning documentation is currently being processed for the Piankatank. Norfolk District continues to discuss oyster restoration in the Lafayette with the City of Norfolk and work with that tributary planning team to ensure long-term protection to the existing relic and restoration reefs. We have also been talking to the City of Newport News regarding construction of oyster reefs in tributaries of the James River. Our team did some informal monitoring of the Lynnhaven River reefs and found large, healthy abundant oysters on those reefs which were built in 2007-2008. The Lynnhaven River stakeholders continue to discuss the long-term restoration status of that tributary.

Mid-Atlantic Fishery Management Council

The Council is scheduled to meet June 8-11, 2015 in Virginia Beach, VA. The following highlights a few items that may be of particular interest on the agenda.

Day 1 of the agenda will include a Species Interaction Workshop, which will convene scientists and managers to discuss potential strategies to fully consider species interactions and climate drivers in the stock assessment process, determination of catch limits, and to build capacity within the region to conduct comprehensive management strategy evaluations (MSEs). The findings of this workshop are intended to support development of the Council's Ecosystem Approach to Fisheries Management Document.

On Day 2, the River Herring and Shad Committee will review and develop recommendations for the river herring and shad cap for 2016-2018, and review progress on river herring and shad conservation.

On Day 3, the Council will review the findings of the April 2015 Deep Sea Corals Workshop and identify areas on the Outer Continental Shelf where coral habitats are in need of protection. The Council is considering the precautionary approach of restricting fishing in discrete zones to protect corals in 15 incised and shelf-slope canyons within the Council's jurisdiction, as well as broad zone measures ranging from the 200 to 500 meter depth contours.

Also on Day 3, the Council will receive an update on progress on its unmanaged forage fish action, and will review and approve a scoping document to be taken to the public on this subject.

The meeting will be broadcast via webinar.
http://www.mafmc.org/council-events/2015/june-2015-council-meeting

Oysters and Ecosystem-Based Management Survey: Draft Indicators

Amy Freitag (VA Sea Grant/NCBO Post doc), aefreitag@vims.edu

The first goal of the survey was to prioritize the many possible ecosystem services that oyster reefs and bars contribute to the Bay and its communities, determining which ones should take priority in management decisions. Each ecosystem service could potentially be monitored through a related indicator; the most popular one for each service from the survey is listed below. Together, you can think of these indicators as a "checkup" on how healthy our oysters are.

Ecosystem Service Priorities	**Best Indicator**	**Feasibility**
1. oyster health	Survival ratio/age composition Total population	Good – State survey data from Mitch Tarnowski and Roger Mann
2. oysters providing habitat	Abundance and diversity of resident organisms	Possible – Fish trap and video data combined with benthic IBI
3. improve water quality	Total nitrogen	Definitely – Chesapeake Bay Program
4. improve system resilience	Biodiversity – number of species in a community	Good – component of data for #2
5. effective management and stewardship	Subsidies needed (shell, larvae, etc.)	Possible – not spatial, but state expenditure records
6. support economy	Commercial fisheries harvest and market value	Possible – Commercial records of aquaculture + wild harvest combined
7. healthy relationship between parts of the watershed	Change in land use/land cover	Definitely – NOAA CCAP maps
8. maintain cultural heritage	Cultural representations of Bay resources	Difficult – smaller components possible, but nothing comprehensive (yet)

Note: Feasibility is determined through existing data sets and whether they are available spatially and for the Choptank and Rappahannock river systems. Current testing and synthesis ongoing in ArcGIS.

Who took the survey?

43 government staff
39 academics
32 fishing industry folks
20 nonprofit staff
6 didn't specify
140 total

75% response rate

time period: March-April 2015

On a scale of 1-5, ***people rated current management as middle-of-the-road*** (2.6) and science as necessary (5) for success.

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Delaware Updates

Edna J. Stetzar/Delaware Department of Natural Resources and Environmental Control-Division of Fish and Wildlife

- American Shad Restoration on the Nanticoke River
    - 18 adult shad were implanted with Vemco transmitters and 5 receivers were installed in the Nanticoke River system. Johnny Moore is the contact for the project (Johnny.Moore@state.de.us or 302-735-2962).
    - Monthly downloads of the receivers will take place to monitor shad movement and to look for detections of Blue Catfish implanted with receivers as part of Matt Ogburn's research.

- Largemouth Bass Recreational Fishery
    - The fishery continues to be a priority for Delaware. There is a need for active management of the Largemouth Bass population given the popularity of this fishery and fishing pressure. Data from 2014 bass tournaments revealed that the river system supported the highest number of bass fishing tournaments in Delaware for the 22nd consecutive year. In addition, data was tabulated from a recent survey of anglers that freshwater fish in Delaware and the river system is the most popular (number of angler hours) of all the freshwater locations in Delaware.

Potomac River Fisheries Commission Updates

Marty Gary

- Oyster related: PRFC completed its 3rd year of rotational oyster seed plantings in the river. This year's planting was on Bluff Point Bar on the Virginia side of the river just north of Colonial Beach. The program was developed by a PRFC Blue Ribbon Oyster Panel which convened in 2011. The rotational program emulates Virginia's successful rotational program, and uses a 4 year delay till harvest. It is intended to revitalize oyster bars in the mid river which have not recovered from the effects of disease and freshets from the 1990s. Also, the triploid based Oyster Managed Reserve Program (also a Blue Ribbon Panel Program) is entering it's 4th year. This program is designed as an alternative to wild harvest on PRFC's public fishery grounds for fee paying participants to take advantage of the faster growing triploids. Both programs are being subsidized by PRFC for their first four years, but the intent is for each to become economically self sufficient after subsidies end.
- Finfish related: PRFC finfish harvest records indicated that Blue catfish surpassed Striped bass for the first time ever in commercial landings for the river. Anecdotal reports from this spring indicate the fishery is off to an impressive start in terms of harvest and number of participating watermen.
- Blue crab related: PRFC's Blue Crab Advisory Committee requested development of a female bushel limit option as an alternative to the seasonal closures on female Blue crab harvest that have been used the past several years in the Fall. After using bushel limits this Spring, PRFC will consider possibly expanding bushel limits as a management tool in the 2015/2016 management cycle.

Fisheries Collaborative Research – Virginia Fishery Resource Grant Program

Tom Murray, VIMS Advisory Services

- Year 2 of VFRG funded blue catfish electroshocking project is underway in the James, Mattaponi and Pamunkey Rivers.. Collaboration with VIMS Fisheries Dept, USFWS, VCU and VMRC VSG.
- Industry field work completed on SK funded project evaluating efficiency and technology transfer of experimental gill net configuration to reduce sturgeon interaction while maintaining target species harvests. Collaboration with VIMS Fisheries Dept., USFWS, VCU, VSG.
- Initated 4 new Virginia Fishery Resource Grant Projects dealing with:
    - spiny dogfish product handling;
    - reduction of summer flounder by-catch in crab pot;
    - demonstration of oyster tidal flupsy;
    - Reduced peeler crab mortality in shedding system using oxygen injection.

VMRC Updates

BLUE CRAB

At the May 2015 Commission meeting, the Commission voted unanimously to continue the current management framework timeline of July 5, 2015 through July 4, 2016, to open the 2016 commercial crab pot season March 17 through November 30th, and to maintain the current crab pot bushel limits. The Commission also adjusted the closure dates for non-crab pot gears, closing on September 26 instead of September 16 and reopening on April 21 instead of May 1. In addition, the date in which individuals are prohibited from possessing dark sponge crabs was modified from June 30th to June 15, based on recommendations from Dr. Lipcius from VIMS, who presented female mortality and water temperate data. Changes to closure dates of the blue crab sanctuaries were also made, to act as a "rolling closure" in May and June. The Crab Management Advisory Committee (CMAC) will continue discussing the possible opening of the winter crab dredge fishery season and addressing public concerns. The CMAC has until the October 2015 Commission meeting to complete their management framework ideas for the winter dredge fishery, and bring the issue back to the Commission for a formal vote on whether to open or close the 2015-2016 season.

STRIPED BASS

In order to comply with the ASMFC FMP for striped bass, the VMRC has made amendments to reduce harvest in both its commercial and recreational striped bass fisheries. Through several public hearings, the Virginia Marine Resources Commission adopted new amendments to Chapter 4 VAC 20-252-10 et seq. "Pertaining to the Taking of Striped Bass" to establish the annual commercial coastal quota as 138,640 pounds; establish the annual commercial Chesapeake Bay quota as 1,064,997 pounds; and amend management strategies for the recreational striped bass fisheries. Also new to 2015 is a free permit required for any person participating in the striped bass recreational spring trophy fishery. These anglers are required to report their trophy striped bass catch (or no catch) for the spring trophy season.

OYSTERS

All licensed, shellfish harvesters in Virginia have completed the Shellfish Harvester Health Safety Training required by the FDA and Interstate Shellfish Sanitation Conference (ISSC). In total, 1805 harvesters have completed the training. The annual oyster stock assessment results showed declining numbers of oyster standing stocks in many areas in Virginia in 2014. There have been relatively light spatsets in 2011, 2013, and 2014. Larger than normal spatsets in 2010 and 2012 resulted in improved market oyster harvests from 2012-2014 from both public and private oyster ground, but most of those cohorts have been harvested. Harvest within rotational management plans will have some harvestable stocks for the coming season, but the Commission staff is working with industry advisory groups to develop effort reduction strategies. The Shellfish Management Advisory Committee is evaluating a number of proposals by staff that would reduce harvest effort for the 2015-2016 oyster season. Shell availability and the rising costs for shell restoration have reduced the quantity of shell deployed on public grounds in 2014 and 2015. Currently shell degradation rates are exceeding the annual addition of new shell, resulting in loss of acreage of previously productive harvest and sanctuary areas.

STURGEON

The VMRC staff is in the final stages of preparing the state's application for the incidental take of endangered or threatened species under Section 10 of the Endangered Species Act, for the incidental take of Atlantic sturgeon in state waters for commercial gill net gear. The VMRC has been working with the NOAA Protected Species Resource staff to finalize monitoring, mitigating, and minimizing measures that will be implemented when the incidental take permit is issued. The current endangered or threatened species status of the five distinct population segments may have a direct impact on commercial gill net fishing activity because of the prevalence of this gear type in Virginia waters. Accurately estimating the potential number of interactions will aid in allowing harvesters to continue fishing activities, while providing protection for Atlantic sturgeon in Virginia.

RECREATIONAL

The agency is facing a significant challenge in the way that recreational catch data are collected and estimates are produced, as the NMFS continues to transition from the Marine Recreational Fisheries Statistical Survey (MRFSS) design to the current version of the Marine Recreational Information Program design (MRIP). At present, NMFS hires a private contractor to conduct the Access Point Angler Intercept Survey (APAIS) for the Atlantic Coast states. The survey involves statistically predetermined locations and blocks of time that recreational anglers returning from saltwater fishing trips are asked a series of questions about their trip and their catch and harvest is recorded. Of the thirteen Atlantic Coastal states, six states subcontract from the private contractor and conduct the survey with fulltime state personnel or part time individuals hired by their state. It is the consensus among all states that those states that conduct the survey see both improved quality of the data provided by the angler and efficiency in the collection of the data plus receive an increased "buy-in" by the recreational fishing community. Virginia is one of the seven states that use the private contractor to do the field survey at present. However, the VMRC, along with the other six states that rely on the private contractor hired by NMFS, began the planning process in 2014 to enable state personnel, and with the help of state hired part-time personnel, to conduct the APAIS. The first step was the development of a draft budget proposal for NMFS funding that was reviewed and approved at the Atlantic States Marine Fisheries Commission meeting in August 2014. All the states' budget requests were then combined and submitted as a package to NMFS for funding. Concurrently the VMRC submitted a request to the legislature, in January 2015, to create new positions and enable the agency to hire additional staff. The agency's proposal, approved by the legislature, will allow the hiring of three FTE's and provides additional funding for part-time contract work to conduct the APAIS. Once NOAA releases the funds to the states, hiring and training of staff will begin and implementation could occur as early as January 2016. Then the real challenge begins!

SOCIAL MEDIA OUTREACH

VMRC started its social media outreach in mid-March with Facebook and Twitter. (www.facebook.com/MRCVirginia and https://twitter.com/VaMRC) The Commissioner decided it was time to leverage the free tools social media offers to engage a

wider audience in VMRC's work in an informal way. Posting topics include Commission meeting agendas and summaries; news releases; Governor's announcements related to VMRC, announcements about fisheries opening dates and closing dates; decisions by the ASMFC; Advisory Board and Task Force Meetings; links to news articles, and most important lots of great photos and fishing tips from the recreational saltwater fishing community. April 24th we received 2,000+ visits to our page, when we posted photos of the 606 pound tuna – a trophy fish--that was caught off of Virginia Beach. Our second highest number of visits, almost 2,000 was a posting about the Artificial Reef Program and locations. We have NOAA educational information posted, USACE news, CBF resources, etc. So far we have 460 'likes' and on average reach between 300-500 people each week. The Hampton Roads area localities make up most of our followers. Other US followers are from Arizona, Colorado and New York City. 32% of our followers are women and 67% men. Followers speak 7 different languages.

VMRC wants to ask all of the GIT participants to 'LIKE' VMRC and share posts. If nothing else, put VMRC on your news release distribution list and we'll post your news releases or newsletters. Photos are always welcome and photos are the main drivers on Facebook pages.

VMRC MOBILE

https://webapps.mrc.virginia.gov/mobile went live last autumn. This web-based app for iPhone and Android mobile devices provides complete access to the VMRC Web site. Quick links are provided to recreational fishing regulations and trophy fish specifications, online registration for Fisherman's ID's and to establish a personal Saltwater Journal. Searching for artificial reefs, habitat permit applications as well as oyster ground applications can also be done on VMRC mobile. VMRC's Business Systems professionals have developed terrific GIS maps and interactive data bases' that are easily accessed when you are on the go. Information for the Marine Police Dispatch Center and Marine Police Regional Offices is also included. If you are on Virginia's tidal waters, you should have VMRC Mobile!

Habitat GIT Management Strategy Summary

Black Duck, Brook Trout, Fish Passage, SAV, Stream Health, Wetlands
Habitat GIT website

Black Duck Management Strategy

Outcome: "By 2025, restore, enhance and preserve wetland habitats that support a wintering population of 100,000 black ducks, a species representative of the health of tidal marshes across the watershed. Refine population targets through 2025 based on best available science."

All jurisdictions in the watershed have identified the black duck as a "Species of Greatest Conservation Need" as part of their State Wildlife Action Plans and use the Mid-winter Waterfowl Survey to estimate black duck populations.

Management Approaches

- Habitat Restoration
- Habitat Enhancement and Management
- Habitat Protection
- Other Conservation Actions Benefiting Waterfowl Habitat: review regulatory legislation and enforcement, streamline regulation, mitigation, information/education, extension education on BMPs, public use management, and predator management
- Choosing Appropriate Sites: high food availability, low risk to habitat loss due to sea level rise/land conversion

Brook Trout Management Strategy

Outcome: "Restore and sustain naturally reproducing brook trout populations in Chesapeake headwater streams with an eight percent increase in occupied habitat by 2025."

Management Approaches

- Identify priority focal areas for brook trout conservation
- Consider climate change in determingin priorities
- Apply decision support tools
    - Brook trout integrated spatial data and tools website
    - Chesapeake Bay Fish Passage Prioritization tool
    - Riaparian Restoration for Climate Change Resilience tool
    - Chesapeake Bay Brook Trout Model decision support application

Fish Passage Management Strategy

Outcome: "By 2025, restore historical fish migratory routes by opening 1,000 additional stream miles, with restoration success indicated by the presence of Alewife, Blueback Herring, American Shad, Hickory Shad, American Eel and/or Brook Trout."

The Fish Passage Workgroup is dedicated to restoring connectivity to creek, stream and river habitats for migratory fish through dam removal and fish passage projects. While the Fish Passage workgroup is primarily focused on blockage removals that benefit diadromous species, the group acknowledges the benefits of dam removal to resident species. As such, Brook Trout was added to the Fish Passage strategy target species list.

Management Approaches

- Prioritization of projects using the GIS-based Fish Passage Prioritization Tool. The tool determines high priority barrier removal projects based on the following: first blockages (the first barrier fish encounter on their spawning runs from the ocean to the headwaters), benefits to multiple species, largest habitat gains, high quality habitat, Brook trout
- Obtain the Mileage Goal. Open 132 miles every two years by working on existing dam removal projects and applying for restoration grants to fund design and removal of barrier projects.
- Project Development: Fish passage coordinators will develop new barrier removal projects using the Fish Pas-sage Prioritization tool, conduct assessment and design studies on potential projects, and focus on high priority communities to test several dam owner incentives and community outreach tools
- Local Government: Local governments, watershed associations, nonprofits and the private sector, including private dam owners, have a role in this strategy. Local governments often own the dams targeted for removal and permission is needed to pursue the project. Nonprofits are often managing and implementing removal projects, providing funding for projects and conducting outreach.

Submerged Aquatic Vegetation (SAV) Management Strategy

Outcome: "Sustain and increase the habitat benefits of SAV (underwater grasses) in the Chesapeake Bay. Achieve and sustain the ultimate outcome of 185,000 acres of SAV Bay-wide necessary for a restored Bay. Progress toward this ultimate outcome will be measured against a target of 90,000 acres by 2017 and 130,000 acres by 2025."

Monitoring
-In 2011, there were an estimated 63,074 acres of SAV in the Bay
-In 2013, there were an estimated 59,927 acres of SAV in the Bay

Management Approaches

- Restore water clarity by meeting pollutant allocations set by the Chesapeake Bay TMDL
- Protect existing SAV by characterizing threats and developing protection measures, establishing protection area criteria, minimizing the effects of invasive species, and increasing understanding of potential effects of sea-level rise
- Restore SAV where possible, targeting sites with suitable water quality and high potential to benefit living re-sources

- Enhance research, citizen involvement, and education

Stream Health Management Strategy

Outcome: "Continually improve stream health and function throughout the watershed. Improve health and function of ten percent of stream miles above the 2008 baseline for the Chesapeake Bay watershed."

Management Approaches

- Identify an appropriate suite of metrics to measure the multiple facets of stream health
- Provision of adequate funding and technical resources to support functional lift in stream restoration projects, in addition to nutrient and sediment reduction.
- Ongoing coordination with state and federal stream and wetland permitting authorities to ensure that stream restoration projects used for credit in the Bay TMDL are consistently applied and meet or exceed permitting requirements established to protect waters of the US.
- Develop and promote holistic stream restoration design guidelines that identified the level of degradation and improvement of stream functions and key stressors/factors limiting potential uplift.
- Local Engagement: Engage with local gov't to inform landowners as well as the general public of beneficial stream restoration and maintenance practices and their impact on the community.

Wetlands Management Strategy

Outcome: "Continually increase the capacity of wetlands to provide water quality and habitat benefits throughout the water-shed. Create or re-establish 85,000 acres of tidal and non-tidal wetlands and enhance the function of an additional 150,000 acres of degraded wetlands by 2025. These activities may occur in any land use (including urban) but primarily occur in agricultural or natural landscapes."

Management Approaches

- Reporting: work with NEIEN contacts to develop flow chart of how wetland restoration projects are reported from all organizations
- Prioritization: identify outcomes and criteria to prioritize areas in each state for restoration , focus efforts on projects that benefit species requiring high quality wetland habitats and incorporate water quality benefits where possible, identify areas where wetlands can be restored without taking ag land out of production, and identify opportunities for large acreage gains
- Identify and develop solutions to barriers to accelerate wetland restoration
- Increase technical understanding of factors that influence project success: Identify tools, models and other science needs for improving wetland restoration

Oyster Reef Ecosystem Services (ORES) Project – Spring FY 2015 Highlights

The NOAA Chesapeake Bay Office (NCBO), together with partners, has initiated the Oyster Reef Ecosystem Services (ORES) project to quantify the benefits restored oyster reefs provide to other species and the environment.

The NCBO project team is 1) doing field work to determine what species are present on oyster reefs before, during, and after oyster restoration work; and 2) using ecological modelling and economic analysis to place dollar values on the fisheries production supported by oyster reefs.

In FY 14 and 15, the NOAA Chesapeake Bay Office funded and is working closely with researchers to coordinate work on projects to better understand the ecological and economic benefits of oyster reefs and oyster restoration. A brief description of the projects is given below.

- VIMS, focusing on "Ecosystem Services of Restored Oyster reefs in the Lower Chesapeake Bay," using fish traps and video in the Great Wicomoco, Lafayette, and Lynnhaven Rivers, Virginia;
- UMD/VIMS, conducting an "Integrated Assessment of Oyster Reef Ecosystem Services: Macrofaunal and Productivity Utilization, Secondary Production, and Nutrient Sequestration," by sampling benthic organisms at restoration sites and nearby nonrestored sites in Harris Creek, Maryland (a tributary of the lower Choptank River);
- VIMS, conducting an "Integrated Assessment of Oyster Reef Ecosystem Services: Fish and Crustacean Utilization, Secondary Production, and Trophic Linkages," using a combination of fish traps, crab pots, gill nets, and gut content analyses to compare finfish and crustacean communities at restoration sites and nearby nonrestored sites in Harris Creek, Maryland; and
- UMCES/VIMS, conducting an "Integrated Assessment of Oyster Reef Ecosystem Services: Quantifying Denitrification Rates and Nutrient Fluxes" by collecting intact sections of substratum from restoration sites and nearby nonrestored sites in Harris Creek, bringing them into the laboratory, and measuring nutrient fluxes. This project will add to prior studies of denitrification rates associated with oyster reefs funded by the NOAA Chesapeake Bay Office in FY11 and FY12, which measured nutrient fluxes on experimental oyster reefs at two sites in Virginia.
- UMCES, focusing on oysters as "Natural Engineers in Ecosystem Restoration: Modeling Oyster Reef Impacts on Particle Removal and Nutrient Cycling";
- SERC, working on an "Application of Dual-frequency Imaging Sonar to the Study of Oyster Reef Ecosystem Services" to better identify the fish and other organisms found on a reef in areas where turbidity prevents visual identification of fish on reefs.
- VCU, working on "Pathways to Production: An assessment of fishery responses to oyster reef restoration and the trophic pathways that link the resource to the reef" in the Pianktatnk River.

These projects are complementary as they cover different geographic areas and different types of ecological and economic benefits of oysters.. NCBO and researchers from these academic institutions will work closely throughout their research to share information and discuss implications of their findings and develop a holistic picture of the ecosystem services provided by Chesapeake Bay Oysters.