Sustainable Fisheries Goal Implementation Team (Fisheries GIT) Meeting
December 2-3rd, 2014
Smithsonian Environmental Research Center – Edgewater, MD

Meeting Materials: http://www.chesapeakebay.net/S=0/calendar/event/22157/
Fisheries GIT Website: http://www.chesapeakebay.net/groups/group/sustainable_fisheries

Meeting Summary

Background

On December 2-3rd, 2014 the Sustainable Fisheries Goal Implementation Team (Fisheries GIT) of the Chesapeake Bay Program met at the Smithsonian Environmental Research Center (SERC) for its 10th biannual meeting. This report provides the meeting takeaways/next steps and short summaries of the presentations and discussions.

The Fisheries GIT draws together a diverse group of jurisdictional managers, scientists, and other stakeholders to improve management and recovery of oysters, blue crab, menhaden, striped bass, and alosines in the Chesapeake Bay. It focuses on advancing ecosystem-based fisheries management by using science to make informed fishery management decisions that cross state boundaries. Through this approach, the Fisheries GIT is focused on managing sustainable Chesapeake Bay fish populations that support viable recreational and commercial fisheries and provide for natural ecosystem function.

The *objectives* of this December 2014 meeting were to discuss:

- **STAC Forage Workshop:** preliminary outcomes and recommendations from the STAC November 2014 workshop.
- **Fish Habitat:** progress to date of the fish habitat action team to develop a Baywide strategy to characterize and inform conservation/protection efforts.
- **Management Strategies:** purpose, content, and format of management strategies that will document the context, guidance, and coordination for each fisheries outcome of the new Watershed Agreement. Breakout groups on the forage and fish habitat strategies.
- **Oyster Restoration:** progress on oyster restoration implementation in MD and VA; long-term monitoring and changing shell budget over time.
- **Blue Crabs:** CBSAC plans to develop of the terms of references and plan for the 2015-2016 benchmark blue crab stock assessment.
- **Invasive Catfish:** industry perspective on the catfish fishery and market; latest diet study results for MD and VA; STAC review of the Task Force Report.
- **GIT Member Updates:** recent fisheries-related projects and initiatives that GIT members and their organizations have been involved in.

Meeting Takeaways and Next Steps

STAC Forage Workshop (pg. 3)

- Workshop Steering Committee will develop the final workshop report including actionable recommendations to guide managers and priorities moving forward.
- Integrate workshop report and recommendations into the management strategy for the new Agreement forage outcome.
- Use workshop outcomes to prioritize research and monitoring funding.

Fish Habitat (pg. 3)

- GIT members will contact the fish habitat team with suggestions of specific data tools or existing resources that should be considered in this development of the fish habitat strategy.
- The GIT will be updated on the details and are invited to participate in the January webinar and in-person workshop to discuss the fish habitat strategy further and develop new content for the Baywide strategy.
- The draft management strategy will be sent to the full Fisheries GIT for their input once the draft is complete.

Management Strategies (pg. 4)

- Strategy teams and GIT staff will include the feedback from the Fisheries GIT in the strategy development process.
- Draft strategies will be sent to the Fisheries GIT for input throughout the process.

Oyster Restoration (pg. 4-6)

- Planned work for 2015 reef construction and seeding will continue in both MD and VA.
- Restoration partners will update the GIT on post-restoration monitoring results.
- Consider how the Fisheries GIT can help build local engagement and interest in protecting newly restored oyster reefs as well as relic reefs from past restoration projects.
- The Oyster Strategy Team will continue to meet to develop a complete draft management strategy by early March which will be shared with the Fisheries GIT.

Blue Crabs (pg. 6)

- The CBSAC subgroup will finalize the TOR's and planning by mid-2015.
- Work on CBSAC critical research needs that will be partially funded by EPA CBP funds that include work on a gear efficiency survey, recruitment success, and summer survey data analysis.
- Blue Crab Strategy Team will continue to meet to develop a complete draft management strategy by early March which will be shared with the Fisheries GIT.

Invasive Catfish (pg. 7-8)

- The Invasive Catfish Task Force will work to modify their report based on STAC's comments.
- The Task Force should incorporate new research into the report including diet study results.
- The Task Force should consider prioritizing their management recommendations based on input from the GIT, Ex Comm, and STAC.

Presentation and Discussion Summaries

STAC Forage Workshop

Assessing the Chesapeake Bay Forage Base: Existing Data and Research Priorities

Tom Ihde (ERT/NOAA) presented the preliminary outcomes from the STAC Forage Workshop held November 12-13th, 2014 in Solomons, MD. Tom along with Ed Houde (UMCES-CBL) co-chaired the workshop which was funded by the Chesapeake Bay Program's Scientific and Technical Advisory Committee. workshop focused on the Chesapeake Bay as a whole and on multiple forage species, including fish, shellfish, and invertebrate species. The objective of the workshop was to put forward, actionable recommendations applicable to management.

The workshop was broken up into distinct themes and featured multiple small breakout group discussions and presenters from both within the Chesapeake Bay and outside the region. The major products from the workshop will include a list of the most prominent forage species/groups found in the diets of major predators as well as a literature and data review. Major workshop recommendations include the need for habitat management, zooplankton and shallow water monitoring, estimates of predator demand, and the need for a comprehensive analysis of available forage and predator data, both current and historical.

GIT members emphasized the importance of prioritizing the research and monitoring needs in the full report to better inform managers. Discussion also centered on prioritizing items that managers can do something about. Key questions are what are the predators eating and is there enough? GIT members also pointed out the caveats of using one source of diet data and the implications of a species not showing up in the data.

Forage Workshop Next Steps

- Workshop Steering Committee will develop the final workshop report including actionable recommendations to guide managers and priorities moving forward.
- Integrate workshop report and recommendations into the management strategy for the new Agreement forage outcome.
- Use workshop outcomes to prioritize research and monitoring funding.

Fish Habitat

Fish Habitat Management Strategy

Jennifer Greiner (USFWS) presented the vision, progress and next steps for the newly formed Fish Habitat Action Team. The team had a kick-off call in November to address what the objectives of this outcome should be and what existing information is. There is a wide range of interest in habitat types from the tidal to nontidal to freshwater areas, and an interest in a wide range of species that the strategy should focus on. The group agreed that there are a lot of existing data but there is a need for a more comprehensive data compilation/analysis. The group agreed that the fish habitat outcome should include efforts to 1) identify threats to fish habitat, 3) compile data on habitats and fish utilization at various life stages, and 3) prioritize habitats for management and decision-making.

The Fish Habitat Action Team will host a webinar in January to discuss potential focus or representative species for the strategy, followed by an in-person workshop in January to more fully discuss content for the management strategy. Fisheries GIT members appreciated the work thus far and emphasized the need to identify and compile existing data and geospatial tools that exist for many tributaries/jurisdictions.

Fish Habitat Next Steps

- GIT members will contact the fish habitat team with suggestions of specific data tools or existing resources that should be considered in this development of the fish habitat strategy.
- The GIT will be updated on the details and are invited to participate in the January webinar and in-person workshop to discuss the fish habitat strategy further and develop new content for the Baywide strategy.
- The draft management strategy will be sent to the full Fisheries GIT for their input once the draft is complete.

Management Strategies

Strategy Overview

Emilie Franke (CRC) presented a brief overview of the Management Strategies that the Fisheries GIT is responsible for developing to address the fisheries outcomes in the new Watershed Agreement. The Fisheries GIT will have four separate management strategy documents: 1) blue crab abundance/management, 2) oyster restoration, 3) forage fish, and 4) fish habitat. Each strategy document will articulate the necessary actions and considerations to achieve each outcome and will include the key elements described in CBP's outline document. Complete drafts are due by March 2015 in order to go out for public input before they are finalized by June 2015.

Bruce Vogt (NOAA) reviewed the funding that EPA through the Chesapeake Bay Program for each of the Goal Implementation Teams (GITs) to assist with management strategy development. The Fisheries GIT received funding for three projects: 1) development of forage indicators based on the STAC forage workshop, 2) CBSAC research needs, and 3) striped bass health indicator.

Breakout Groups

Fisheries GIT members split up into groups to address the forage and fish habitat outcomes separately. Each group worked through discussion questions and began to fill in parts of the Management Strategy outlines including the objectives, baselines, factors influencing, current efforts and gaps, and the management approach. Members were also able to sign up to participate in the strategies or suggest those to be involved under the "Participating stakeholders" section. The groups then switched rooms and gave brief input on the other group's work.

Management Strategy Next Steps

- Strategy teams and GIT staff will include the feedback from the Fisheries GIT in the strategy development process.
- Draft strategies will be sent to the Fisheries GIT for input throughout the process.

Oysters

Maryland Oyster Restoration Updates

Stephanie Westby (NOAA) updated the GIT on 2014 oyster restoration progress in Maryland tributaries and next steps for 2015. Restoration implementation in Harris Creek is set to be complete in 2015, making it the first tributary where restoration activities would be complete under the Chesapeake Bay Executive Order and new Watershed Agreement. Post-restoration monitoring in Harris is planned for next year, but initial surveys show that oyster growth and spat survival are high. In the Little Choptank River, implementation began this year and will continue with seeding in 2015. Construction in

the Tred Avon River is set to begin in 2015. The tributary plans for the Little Choptank and Tred Avon are set to be finalized in 2015.

Fisheries GIT members discussed the post-restoration monitoring and reviewed the minimum density and year-class requirements for a restored reef. Part of the monitoring includes the physical reef structure to ensure that the reef is not shrinking in size or height. Tom O'Connell (MDDNR) pointed out that it is important to manage expectations and be prepared for potential disease and other mortality. Oyster restoration is a very long-term plan that is providing the structure and foundation for future oyster populations.

Lynn Fegley (MDDNR) emphasized to the GIT the importance of this monitoring and that it requires both financial and human resources. She reported out on recent recommendations from DNR's Oyster Advisory Commission, which include upgrades to DNR enforcement technology, integrating oyster restoration into land use planning considerations, and additional monitoring for individuals convicted of poaching violations. GIT members discussed the importance of local engagement and investment in protecting these newly restored tributaries. They also discussed the possibility of identifying a tributary on the western shore of MD as a candidate for restoration.

Virginia Oyster Restoration Updates

Jim Wesson (VMRC) presented on shell management in the Bay and how changes and limitations of the shell budget should be considered in planning oyster restoration activities in the long-term. He discussed inputs for new shells, recruitment, and substrate as well as causes of shell loss or degradation such as burial, biological organisms, and loss of attachment sites. He showed changes over time of shell volume and spat density at specific oyster reefs in Virginia. Major points are that shell loss rates depend on salinity, and that reefs require equilibrium between shell addition and loss. This addition of shell and offsetting loss from natural processed requires continuous effort and addition rather than a single or limited effort. Restoration partners should consider the need to replenish existing reefs over time and in the future when planning restoration activities.

Fisheries GIT members discussed the need for future replenishment activities and the need to recognize previously built reefs. They discussed what levels of funding and amount of shells that may be needed for these replenishment activities. Shell needs differ by jurisdiction and tributaries. For example, due to the high salinity in Virginia, there is always a negative shell budget.

Susan Conner (USACE) updated the GIT on ongoing and future plans for oyster restoration in Virginia related to the USACE's Native Oyster Restoration Master Plan, specifically in the Great Wicomico, Pianktank, Elizabeth, and Lynnhaven Rivers. In the Great Wicomico, 61 acres currently meet the "restored" criteria and more restoration work may happen in the future. In the Lynnhaven, previously restored reefs are currently being evaluated to determine if they meet the criteria for a restored reef. In the Lafayette, a group of restoration partners are trying to determine how to best protect surviving relic reefs as the water quality is improving and the possibility of harvest is considered. In the Pianktank, TNC, VMRC and USACE hope to build an additional 50-100 acres in the next few years.

GIT members discussed the relic reefs that are surviving and could be incorporated into the count of restored acres for some tributaries. Regarding funding, members discussed potential opportunities for dual-purposing of funding for restoration. Members also discussed that for tributaries like the Lynnhaven that have multiple uses including aquaculture areas, restored areas, leased areas, etc., how would these areas be incorporated into the count of "restored" acres and the status of tributaries?

Oyster Management Strategy

GIT members reviewed the outline that the Oyster Strategy team developed as a first step toward writing the oyster management strategy. Fisheries GIT members discussed the need to expand the "Adaptive Management" section to address how restoration will proceed in the future. Key questions to consider included what would be done if the acreage goal is not met or if the restoration does not achieve the desired change in the ecosystem. Members also discussed the importance of post-restoration monitoring and comparing results and differences among reefs.

Oyster Restoration Next Steps

- Planned work for 2015 reef construction and seeding will continue in both MD and VA.
- Restoration partners will update the GIT on post-restoration monitoring results.
- Consider how the Fisheries GIT can help build local engagement and interest in protecting newly restored oyster reefs as well as relic reefs from past restoration projects.
- The Oyster Strategy Team will continue to meet to develop a complete draft management strategy by early March which will be shared with the Fisheries GIT.

Blue Crabs

CBSAC Updates and Stock Assessment Plans

Joe Grist (VMRC) presented CBSAC's plan and timeline for the upcoming 2015-2016 benchmark Chesapeake Bay blue crab stock assessment. CBSAC met in September 25th to discuss the upcoming stock assessment and to identify a subgroup of CBSAC to work on planning the assessment and drafting the terms of reference (TOR's). CBSAC is aiming to answer important management questions and high priority research needs in the upcoming assessment and TOR's. Next year's Winter Dredge Survey (2016-16) will incorporate additional components to address TOR's, and all WDS results will be incorporated into a new assessment model in spring 2016. There will not be a usual blue crab advisory report in summer 2016 since CBSAC will just be working on the stock assessment. CBSAC hopes to present the results of the assessment at the December 2016 Fisheries GIT meeting along with an advisory report.

CBSAC emphasized the need for the TOR's and stock assessment to directly address jurisdiction management needs. CBSAC and GIT members also discussed the importance of a peer review of the assessment before it is published. This may delay the release of the assessment results until 2017, but the peer review is essential. Members also discussed the need to line up funding mechanisms as soon as possible so the data collection can begin next winter.

Blue Crab Management Strategy

GIT members reviewed the outline that the Blue Crab Strategy team developed as a first step toward writing the blue crab management strategy. Fisheries GIT members discussed the need to expand the "Adaptive Management" section to address how management responds to changes in blue crab abundance. The Strategy Team clarified that the allocation framework is linked to the current reference points; these are not two separate concepts. GIT members also discussed the importance of the upcoming stock assessment and additional data/analyses/tools that may result and inform current management. Members also discussed the scope of the document and if it should include environmental and human factors impacting the blue crab population like loss of habitat, climate change, etc. What should this strategy cover?

Blue Crab Next Steps

- The CBSAC subgroup will finalize the TOR's and planning by mid-2015.

- Work on CBSAC critical research needs that will be partially funded by EPA CBP funds that include work on a gear efficiency survey, recruitment success, and summer survey data analysis.
- Blue Crab Strategy Team will continue to meet to develop a complete draft management strategy by early March which will be shared with the Fisheries GIT.

Invasive Catfish

Stakeholder Panel

Andrew Turner (ERT/NOAA) coordinated a panel of catfish stakeholders from the Patuxent and Potomac Rivers to hear their perspective and experience with the blue catfish fishery and market. The panel included Bob Evans (Patuxent waterman), GIT members Billy Rice (Potomac waterman, DNR TFAC), and Tim Sughrue (Congressional Seafood). Bob and Billy discussed the types of gear they use, which can differ depending on conditions and preference. Bob discussed how historically, he has mostly caught white and brown/bullhead catfish, but 5-6 years ago he caught his first blue. He does not typically target blue catfish, as he does not have enough to create a market. He does target larger blue catfish in the spring time.

Billy discussed the differences between the Potomac and the Patuxent, since blue catfish have been established in the Potomac for a longer time period. In the spring most of the catfish he catches are blue catfish, and he emphasized that the success of a blue catfish fishery will depend on the available market. Tim discussed the growth of the blue catfish market within Congressional Seafood in the last year. Many restaurants up the East Coast now sell blue catfish, but the harvest numbers are unpredictable and can vary greatly from day to day. The catch is high in the spring and fall, but there is no processing infrastructure yet to create a frozen market to last year-round. He emphasized the need for more watermen targeting catfish with fewer regulations to build the market.

Diet Study Updates

Don Orth and Joseph Schmitt from Virginia Tech provided and update of the latest results of their diet studies in Virginia's tidal tributaries including the James, Pamunkey, Mattaponi, and Rappahannock. Over 4500 stomachs have been analyzed for gut content analysis in 2013-2014. Data show that blue catfish shift to piscivory around 600mm length in the Pamunkey and Mattaponi, but in the James shift to piscivory much earlier around 400mm. Until that switch, the catfish are feeding mostly on invertebrates and vegetation. In all three tributaries, gizzard shad appears the most in the diets. Cannibalism and white perch are also prominent aspects of their diets. Fish roe have also been identified in the stomachs, but have not been identified to specific species. Overall, breeding, alosine migrations, juvenile alosine abundance, freshwater inflows, and abundance of gizzard shad are influencing the diets of blue catfish. They can also switch to consuming vegetation and invertebrates if other prey is not available.

Matt Ogburn (SERC) discussed his latest results from catfish diet studies in Maryland that includes study sites in the Upper Bay, Nanticoke, and Patuxent and methods include gut content analysis and stable isotope analysis. Based on preliminary data, fish prey are occurring more frequently in blue catfish than in white catfish, and much of the blue catfish stomach content is invertebrate material, clams, or other material. Unidentified material is being identified using a genetic barcoding pilot study. Based on the data, blue catfish seem to shift to piscivory at about 300mm total length and habitat use suggests that predation impacts are greatest in tidal freshwater and oligohaline areas. Telemetry studies are tracking catfish movement and time spent in different areas of the Patuxent River.

STAC Review of Task Force Report

Bruce Vogt (NOAA) gave a brief overview of the Scientific and Technical Advisory Committee's peer review of the Invasive Catfish Task Force's final report and management recommendations. STAC was charged with providing comments on the technical feasibility, reasonableness, likelihood of success, and potential unintended effects of the Task Force's management recommendations. STAC's overall comments appreciated the creative ideas of the Task Force, but suggested that a comprehensive management plan should be developed due to a high level of uncertainty before these recommendations are formally implemented. STAC pointed out the most significant information gaps which include population size, movement, and distribution; minimum removal rates to be effective; gear effectiveness; and contaminant levels.

Moving forward, the Task Force plans to modify and clarify sections of their report based on STAC's comments. They plan to complete these changes by spring 2015. Fisheries GIT members acknowledged that some fishery activity is already occurring and these current activities should be taken into account in revised report. Task Force members discussed that the revised report will attempt to clarify and be more transparent about the unknowns and uncertainties regarding each recommendation. Members also discussed that current research and new data/results need to be added in order to more clearly communicate and determine the ecological impacts of invasive catfish. The key question should be what is the current state of the ecosystem and what are we trying to mitigate against.

Finally, the Ex Comm discussed that the Task Force should consider placing a higher priority on fishery-dependent removals in their revised report, and that report could lay out the steps needed for the jurisdictions and stakeholders to discuss fishery goals, including balancing commercial and recreational interests.

Invasive Catfish Next Steps

- The Invasive Catfish Task Force will work to modify their report based on STAC's comments.
- The Task Force should incorporate new research into the report including diet study results.
- The Task Force should consider prioritizing their management recommendations based on input from the GIT, Ex Comm, and STAC.

GIT Member Updates

Oysters

- PRFC Triploid Oyster Program
- CBF Vertical Relief in Oyster Restoration (Tangier Sound)
- USACE Restoration Update
- NCBO Oyster Reef Ecosystem Services (ORES) Research

Management Updates

- Mid-Atlantic Council Updates
- VMRC Species Updates
- DE DNREC Updates

Additional Updates

- Virginia Sea Grant/NCBO Ecosystem-Based Management Post Doc
- CBC Livestock Stream Exclusion Updates

Meeting Attendance

Fisheries GIT and Workgroup Members:

Peyton Robertson *(Chair)*	NOAA
Tom O'Connell *(Vice-Chair)*	MD DNR
Bob Beal *(Ex Comm)*	ASMFC
Marty Gary *(Ex Comm)*	PRFC
Bryan King *(Ex Comm)*	DC DDOE
Bruce Vogt *(Coordinator)*	NOAA
Jessica Coakley	MAFMC
Susan Conner	USACE
Lynn Fegley	MD DNR
Jack Frye	CBC
Greg Garman	VCU
Bill Goldsborough	CBF
Bob Greenlee	VDGIF
Joe Grist *(CBSAC Chair)*	VMRC
Jorge Holzer	MD Sea Grant
Tom Ihde	ERT/NOAA
Andy Lacatell	TNC
Rom Lipcius	VIMS
Ron Lukens	Omega Protein
Tom Miller	UMCES CBL
Matt Mullin *(teleconference)*	EDF
Matt Ogburn	SERC
Charles Poukish	MD DOE
Tom Powers	VA Blue Crab Advisory Committee
Jim Price	CBEF
William Rice, Sr.	MD DNR TFAC
Danny Ryan	DC DDOE
Kevin Sellner	CRC
Mike Slattery	USFWS
Geoffrey Smith *(teleconference)*	PFBC
Ken Smith	Virginia Waterman's Association
Edna Stetzar	DE DNREC
Ann Swanson	CBC
Andrew Turner	ERT/NOAA
Emilie Franke *(Staff)*	CRC

Additional Attendees and Presenters:

Karl Blankenship *(teleconference)*	Bay Journal
Pat Campfield	ASMFC
Jim Cummins	ICPRB
Brenda Davis	MD DNR
Bob Evans	Waterman
Amy Freitag	VA Sea Grant
Moochie Gilmer	MD DNR TFAC
Jennifer Greiner	USFWS
Troy Hartley	VA Sea Grant
Ken Hastings	Mason Springs Conservancy
Tuck Hines	SERC
Lee Karrh	MD DNR
PJ Klavon	NOAA
Mark Lukenbach	VIMS
Margaret McGinty	MD DNR
Maria Murray	NOAA
Earl Meredith	NOAA
Don Orth *(teleconference)*	Virginia Tech
Joseph Schmitt *(teleconference)*	Virginia Tech
Wendy Stuart	Wide Net Project
Tim Sughrue	Congressional Seafood
Peter Tango	USGS
Jim Wesson	VMRC
Stephanie Westby	NOAA