Fish Habitat Action Team Meeting Notes

September 16, 2019 1:00 – 4:00 pm

Participants

Gina Hunt	Morgan Corey	Julianna Greenberg	Lisa Havel
Andrea Ostreff	Bruce Vogt	Scott Phillips	Kelly Maloney
Edna Stetzar	Jennifer Greiner	Mark Monaco	Suzanne Skelly
A.K. Leight	Peter Tango	Margaret McGinty	
Geoffrey Smith	Matt Ogburn	Kevin Wehrly	Gary Whelan
Pat Geer	Julie Devers	Tom Parham	Sherry Witts

Great Lakes Assessment Presentation - Kevin Wehrly and Gary Whelan (Michigan DNR)

- Condition assessment of nearshore fish habitat in the Laurentian Great Lakes region
    - Great Lakes Aquatic Habitat Framework (GLAHF)
        - Framework was determined in advance
        - Summarized biological, chemical, physical data basin-wide at multiple spatial scales from multiple sources to completely cover the entire basin
        - Links terrestrial and aquatic systems
        - Habitat Classification system, ex. depth, water temp, mechanical energy
    - Decision support tool available in GLAHF.org
        - Use to 1) identify fish habitat potential, 2) assess condition, 3) prioritize project actions and funding
    - Conditions assessment approach
        - Based on species data, models developed for 53 species
        - Restricted to trawl survey depth, used trawl locations from USGS survey to predict abundance for each species then overlayed map of human disturbance and the intersection of layers is the habitat condition recorded
        - Developed each model for each lake independently
            - Combined models to provide range wide model of entire basin
            - Neural network models
            - Assume high abundance correlates to high habitat suitability
        - Limited by trawl data availability to a certain size class
        - Also time limitations, additional data available but not able to be incorporated
        - Different species exhibit different models of abundance
        - Call the most suitable habitat the areas with the top two levels of abundance documented and performed the assessment on these areas
        - Did not include stressors because often coincide with natural drivers

            - Developed the model with only natural variables and then overlayed levels of human disturbance
            - Characterized amount of stress in each tributaries watersheds
                - % agriculture, urban, population, road density, dam density
                - With assessment index tool, partnership was able to choose which stressors to focus on
        - Assessment was done at 8 digit HUC level
        - Coastal/Offshore assessment was done at a large scale
        - Looking at stressors and abundance levels together, able to determine categories to measure risk level
            - Example: about half of yellow perch habitat has low or very low risk in watershed – use this type of information to focus on preservation vs. restoration vs. mitigation efforts
    - Final product created optimal habitat map with species composite (60% or more is optimal)
- Questions and Discussion:
    - One stress index looked at differentiation based on condition of the shoreline vs just presence (David Allen paper)
    - Different shoreline types natural and modified – found that shoreline is less important factor in Great Lakes because less disturbance compared to coastal areas
    - NOAA Environmental Sensitivity Index (ESI) maps were updated in 2016, could have information on shorelines
    - Abundance measure was catch/effort in the trawl data, mostly bottom trawl
    - List of variables used as measures of stress determined by:
        - Data available, most complete set of drivers caused by human disturbance, including Canadian watersheds
            - Grid sizes are 30m in nearshore, offshore 90m
            - Maps all based on one grid size
        - Large effort to clean up one dataset from USGS
        - States do nearshore data collection, but challenge getting the data cleaned up georeferenced and consistent
            - Differences in gear between lakes, different standards for sampling, USGS only one with consistent sampling
    - Assessment cost 250K grant for nearshore and some coastal, with 2 post docs full time for 2 years (one nearshore and one for the coastal assessment), a full time GIS person GLAHF, 4 others working – time invested greater than the grant
        - Several years of building up databases before, framework already in place
    - Created a species composite to see where work would benefit the greatest number of species, with highlighted areas greater than 50% species overlap
        - Complex areas with upwelling, islands, etc.

        - Assessed conditions to determine protection, mitigation, restoration
    - Species richness substitute for creating individual models for each species?
        - Most management in the area is species based, so richness is a less important indicator than the health of individual species in an area
    - Threshold accuracy for including models? Will get back to us with an answer
    - Who has been using the tool and for what? Unsure
        - GLADOS used for placement of wind energy
        - Continued funding support for keeping tools up to date and relevant is needed
            - Difficult to get long term system in place to enhance and sustain the existing tool, think about data maintenance, website functionality, where data are housed
    - Managers have not always thought about habitat and stressors affecting fisheries at this large spatial scale
        - More focus on fish population dynamics
        - Contributes to the lack of interest in maintenance and in learning how to use the tools, changing current methods
        - FH team member suggested considering habitat as a natural mortality factor included in stock assessments
            - Example: work in Lake Erie on hypoxia shows that what happens in the watershed is affecting the fish populations

New USGS Chesapeake Watershed Science Plan update - Scott Phillips

- Now at Midpoint assessment on TMDL – ultimate goal is to restore conditions for fisheries
- USGS plan focusing on 4 themes: (all within the scope of climate change)
    - Fish habitat, health and aquatic conditions
    - Coastal habitats and waterbirds
    - Land change and watersheds
    - Integrate and engage stakeholders
- USGS science plan aims to bring together Bay Program outcomes – what are the management activities you can engage in to work across habitat, water quality, fisheries?
    - High priority on identifying restoration and protection areas and figuring out stressors
        - Nutrients, invasive species
        - Interface with other groups doing similar work
    - Focusing on four habitat types:
        - Cold headwaters, streams and rivers, tidal fresh, and estuary
    - Currently in the middle of planning efforts
        - Depends on data availability and methods testing
    - Goal of doing an estuary to watershed joint pilot
    - USGS working with stream health workgroup

    - Gathering information on fish abundance and fish health
    - Stakeholders and change over time
    - Looking at benthic organisms in stream and relating to fish habitat
    - Fish passage focus on culverts and their influence on species diversity
    - Interest to support NOAA work on invasive catfish
- Pilot assessment will be built from maps of study areas and current work being done

Regional Assessment Progress Update - A.K. Leight

- AK walked through the assessment purpose, use cases, and process illustrated in the conceptual diagram
- NOAA conducted 20+ in-person interviews about potential considerations of tidal habitat and advancing management with habitat information. USGS also conducted in person interviews with state personnel in MD, VA, and DE regarding nontidal and tidal fresh habitat.
    - White paper coming out in next few months summarizing tidal interview results
- Discussion:
    - How useful to have maps like those from Great Lakes presentation?
        - Associated stressors may not correlate to habitat stressors
        - Contaminants can be a driver, endocrine disrupters to fish
        - Will not have successful restoration without improving fish health
        - Important to highlight data gaps like this
        - Make sure to maintain ability to drill down to specific stressors
        - What are the habitat features promoting good habitat?
    - What do we need to know?
        - Low / medium / high abundance
        - Trying to build a better dataset, cannot get production level data
        - Important to know where there are consistently good areas versus areas that are on and off – use for land planning you want to know what the smallest high-quality areas you can protect to maximize benefits for low cost
    - What in a habitat (stressor) is taking away from recruitment?
    - What are the events changing the way organisms are responding to a habitat?
    - We do not have Chesapeake Bay specific abundance estimates for most species
        - Stock assessments done at regional level
        - To get at issues with recruitment and production, need the fisheries information first and then put habitat and stressor layers on top
    - Emphasize conservation before restoration in the purpose statement please
    - How does habitat play into your workplace?
        - Mostly fisheries managers, land use planners and permitting staff
            - More info needed for permitting and conflict resolution
    - Focus on intermediate products of assessment process
        - Where and when do different species occur?

        - Collect and characterize existing data first
- See draft process report and conceptual diagram for use cases and decision points (timeframe beyond next 2 years)

Draft Actions for Next 2 Years

- **NCBO Funded Habitat Projects**
    - Suite of ongoing projects that were presented at the June Fisheries GIT meeting focusing on forage and fish habitat
    - Funded through NCBO discretionary fund addressing priority fisheries science issues
        - Previously focused on invasive catfish research, then oysters ecosystem services, current projects address black sea bass and summer flounder as federally managed species connection to NOAA fisheries mandate
- **Communications Strategy** – Continued development of the plan and work on implementation of some strategies:
    - Communicating economic importance of fisheries
    - Interactions with local government
        - Do not have local government members on team to provide feedback- Helen/Queen Anne's County planner retired
        - Would like to continue habitat workshops that are continuing education credits for planners. Helen planned these and not sure if they will continue.
        - PA Conservation Districts may be the best way to reach County level in PA.
        - Standout groups to bring conversations first?
            - More southern districts looking at WIPs – Lancaster, York Counties, Huntington
            - Look at counties experiencing fracking, more aware of issues
        - Urban Stormwater Workgroup includes reps from most urban counties in MD
    - GIT-funded project starting next year will develop communication products regarding nature based shorelines in MD, VA and DE
        - Includes permitting pathways for shoreline projects, benefits of living shorelines
        - Will use the recommendations from the 2019 GIT funded project: "Social Marketing to Improve Shoreline Management"
        - Other suggested media/messengers to get this information out? Other communications strategies we should use?
- **Assessment Methodology Testing**
    - Are there additional data tools and interim assessment products?
    - States did ask for maps of where rare fish species are because we only have historical records, not up to date maps
    - Mapping areas of utilized/sampled by different fish species. Composite map.
        - Where are fish utilizing the Bay? Can we tease out hotspots?
        - What do we know is happening in those areas with stressors?

        - Once we know where fish are, can talk about land use practices in surrounding areas
        - Knowing what species are available for recreation is useful from planning perspective
        - Be careful it is not misused. Must have a disclaimer that it is only areas sampled. Lacking data does not indicate lacking fish present.
- Lots of existing data and models but not at fine scales, challenge that people are not working together to figure out how everything connects
    - Historical data need to pick a time period where surveys have captured the whole watershed and use as a baseline
        - How far back do we need to go to be meaningful?
        - Not much sampling before 2000, 2000-2010 most data
        - Often data exist but not accessible
- Is it realistic to create maps in the next two years of fish and shellfish presence?
    - We do not know data availability in tidal waters yet.
    - If we create maps, who is going to use them?
        - Department of Transportation (DOTs)? As fish passage prioritization tool, focus on culverts now and assess
        - Funding decisions NFWF - need to target funding agencies' need for quick, high-impact product
    - Abundance and human use are very important to include
    - Stream health team uses survey data where they have it and model the areas they do not have
        - Show both on same map but differentiate between the model and survey data. We may be able to do something similar for fish habitat
- Get involved with BMPs directly with those doing restoration work
- During interviews, rare and threatened species maps were requested
    - Want to know if species are still there for land use planning and conservation
- Every jurisdiction wants info on invasive species
    - Maps of invasive species and where they are going? USGS makes that map already, but at what scale?
- Methodolgy testing for the assessment will identify gaps in data and research. A report of needs and recommendations could be a deliverable.
    - A table showing stressors we have at a broad scale and few at finer scale
- We will know data availability for tidal waters and identified gaps next spring with Tetra Tech report, but it will not tell us about land-based stressor data.
- Managing expectations for process, scale and time of the habitat assessment
    - Management Board needs to know this is larger than 2-year effort
    - Make sure we are communicating throughout
- Do we need to identify milestone points where all teams need to be in sync at same point?

Next Steps

There was lot of great discussion around interim assessment products that can be completed in the next 2 years, but we had to cut the discussion short. We will follow-up on ideas by email with Assessment Project Steering Committee and a call with FHAT in a few weeks. Potential FHAT meeting dates: **Oct 15th – 17th** .

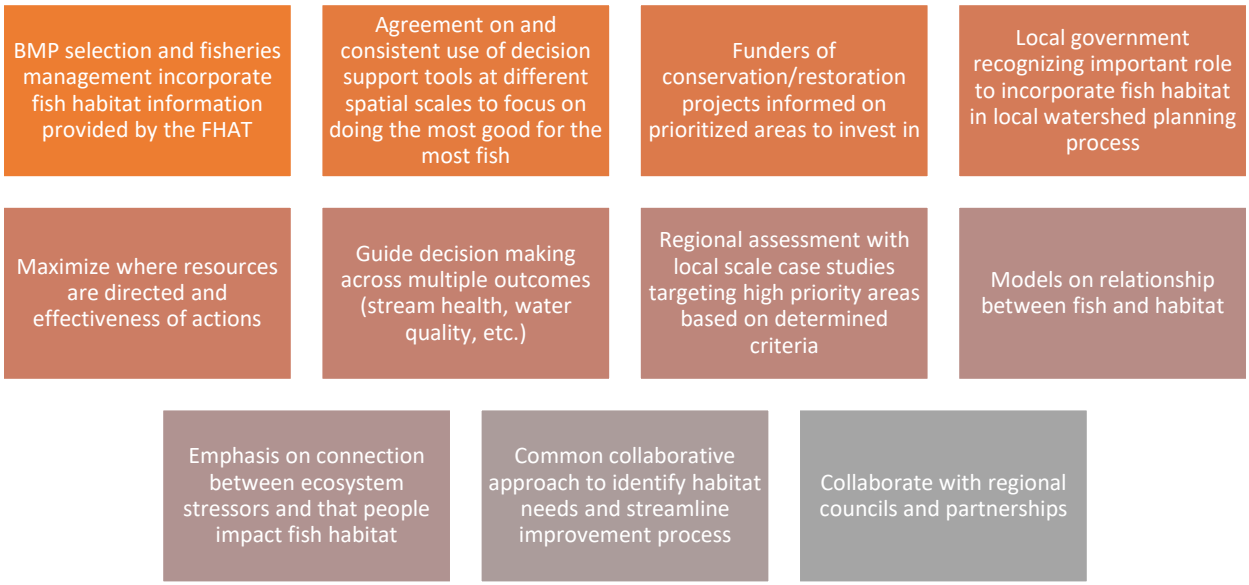
We will provide a list of all potential actions for the next 2 years prior to the meeting. This will include the topics discussed at the meeting: NCBO Funded Habitat Projects, Communication products, Assessment Methodology testing, and Interim Assessment products.

Please provide any ideas, state needs, or clarification on discussion to Gina by **October 2nd** so that it can be incorporated in the list of actions. The meeting will be only to finalize the list of actions for the next 2 years.

Summary of Discussion Questions

The team was asked several questions related to their vision for the achieving the outcome and communication messages. The responses were submitted with Mentimeter.

How would you define success for the Fish Habitat outcome?



What are the priority messages we want to communicate about fish habitat over the next 2 years?

- More habitat = more fish
- Sustainable fisheries depend on availability of healthy good quality habitat
- Human activities impact habitat
- Fisheries are important to Chesapeake Bay regional and local economies (i.e. we need fish – recreation)
- Priority is to conserve intact habitat, where habitat is degraded we need local partners to work together on restoration
- Communicate on areas that key fish species use, how conditions currently are and how conditions may change, landscape stressors, and trends in those areas
- Fish habitat depends on water quality improvement and local planning