Fish Habitat Action Team Meeting Agenda

July 12th 2023; 1-3pm

2 Hours – Current Time (100 minutes)

Attendees

- Bailey Robertory (CRC)
- Chris Moore (CBF)
- Bruce Vogt (NOAA)
- Hannah Nionson (NOAA)
- Jamileh Soueidan (CRC)
- Olivia Carrettii (Oyster Recovery)
- Julie Reichert-Nguyen (NOAA)
- Catherine Brown (Skeo)
- Troy Tuckey (VIMS)
- Alexandra Fries (UMCES)
- Benjamin Gessler (USGS)
- Donna Bilkovic (VIMS)
- Edna Stetzar (DNREC)
- Geoffery Smith (PFBC)
- Marek Topolski (MDNR)
- Peter Tango (USGS)
- Tom Ihde (Morgan)
- David Maginnes
- Henry Legett (Smithsonian)
- Kelly Maloney (USGS)
- Pat Geer (VMRC)
- Rachael Maulorico (VMRC)
- Daniel Ryan (DC)
- Mary Jane Pieras

Action Items:

- Jamelieh: Send marine heat waves recommendations to FHAT team
    - All: Provide feedback on marine alert system
- Group: STAC Rising Water Temperature: Touch base with Ward
- Group: Provide feedback on partner priorities, additional tools/data, and input on sources for marsh adaptation
- Group: Review CESR report
- Group: Adaptive Management Review: Start reviewing 2-year update.
- Chris Moore, Bruce Vogt, Bailey Robertory: Get together and reach out to leads about filling out adaptive management questions.

Meeting Minutes

Introduction and Roll Call

– Chris Moore CBF - Action Team Chair: (5 minutes)

NOAA/USGS Fish Habitat Project Update

– Hannah Nisonson (20 Minutes)

- Joint Pilot Fish Habitat Assessment - Integration of Tidal and Non Tidal Waters through a Rasterization Method
- Previous work
    - Nontidal: linear framework, catchment summarizes predictor variables, and predictive models for species occurrence and community metrics developed
    - Tidal: hexagonal framework, data summarization methods described, example framework applications, and provided recommendations
- Patuxent river chosen due to biological data availability, size of system, and presence of all four habitat types (cold headwater, large non tidal river, tidal fresh, and tidal estuarine)
- Use linear network to non-linear network to represent diadromous fish habitat
- Selection of species to represent localized habitat preferences
- Used Digital Elevation Model (DEM) to rasterize approach
- 3 Candidate Species/Preliminary Variables
    - White Perch
        - Dissolved Oxygen (D.O)
        - Water Temperature
        - Salinity
        - Index of Biological Integrity (IBI)
        - Depth
        - Bottom Type (CMES)
    - Tessellated Darter
        - Fish Passage (barriers and dams)
        - Bottom type
        - Agricultural land
        - Impervious surface
        - Wetlands
    - American Eel
        - Fish Passage (barriers and dams)
        - Velocity/depth diversity
        - Co-occurring fish
        - Substrate type
        - Temperature
        - Slope/elevation

- Water Quality Layer
    - D.O, Salinity, Temperature
    - Chesapeake Bay Program monitoring program ran through CB interpolator and interpolated points aggregate by year/season
    - Point data joined to polygon version, re-rasterd in ArcPro using ‘Fishnet’ and ‘spatial joint’
    - Output water quality rasters used as prediction layers for model
- Frameworks: agricultural, wetlands, and impervious surfaces
- Fish Passage
    - Collection of barriers
    - Crucial layer for non tidal dominant species
    - Layer will be rasterized to fit framework design
- Next Steps
    - Python analysis, develop report, present to Fish GIT
    - Expand grid based species distribution modeling, incorporate sediment modeling, add BMP information, and expand approach to other tributaries
- Questions/Comments
    - Tracking urban/agricultural BMP
        - Response: Variety of both loaded in and put into number. Data sharing issue with NOAA. Hope to incorporate in the future.
    - Wetlands/impervious slide. Can you incorporate shoreline into the model?
        - Response: Yes. This is only a subset. That will be included just not with F.C.G interpolation.
        - Follow up response: VIMS was updating, depends on how up to date data is.
        - Follow up response: Subset of data is available.
    - CESR report has a section on living resource responses to water quality. To what extent can this make a connection?
        - Response: We don’t know the end product yet. Working on getting it to do that
        - Follow up response: We are aware. We are including survey/monitoring done in shallow water. Two habitat types that can mitigate/create refuge (hope to fund)

Oyster SAV Proposal Update

– Chris Moore (10 Minutes)

STAC Rising Temperature Workshop Report Recommendations

– Jamileh Soueidan (20 Minutes)

- Climate change science to inform management needs identified by stakeholders to tackle rising water temperatures in the Chesapeake Bay
- Impacts of rising water temperature on living resources in the Chesapeake Bay, policy/management recommendations, science and research to support
    - Drivers
        - Increases in air and ocean temperatures are main drivers (large changes)
        - Sea level rise (almost no change)
        - River temperature (small change)
    - Implications
        - Habitat changes for vulnerable species
        - Habitat and range shifts
        - Species level impacts can vary (negative or positive) based on species, life stage, and location
        - Eelgrass negatively affected while other species may be more tolerant
    - Overall
        - Issue is not going away
        - Climate resilience and adaptation is a focus of the Chesapeake Bay Watershed Agreement
        - Strategy to build resilience and promote positive outcomes
- Tidal fisheries related recommendations
    - Ecosystem based management
        - Fishing guidance based on temperature, D.O, and habitat condition
        - Workshop with fisheries stakeholders to consider long-term strategies
    - Future climate conditions
        - Strategy to improve communications on future climate conditions
        - Support social science research/develop targeted communication for specific audiences
    - Nearshore habitat
        - Common criteria/metrics for natural infrastructure projects with multiple benefits
        - Support research on locations with multiple strategies being implemented
    - Extreme stressors
        - Create a team to develop a marine heat wave alert system
        - Connect alert system with differing parameters including habitat preference, guidance on fishing behavior, and D.O.
- Science and research based needs related to tidal fisheries

    - Monitoring
        - Improved environmental monitoring
        - Spawning grounds and fisheries habitat
        - Zooplankton monitoring at spawning and nursery habitat to assess food web shifts
        - In situ monitoring
    - Extreme climate change stressors - marine heat waves
        - Relate marine heat wave definitions with living resource thresholds
        - Real time monitoring of marine heat wave and forecast
        - Marine heat wave indicator connecting living resource management/guidance with public
- Current efforts by NOAA Chesapeake Bay Office (NCBO)
    - Seasonal summaries
        - Quarterly reports
        - Product expansion
    - Connecting marine heat waves to living resources
        - Develop approach to define heat wave parameters
        - NCBO Summer Climate Intern (Emily) working with fisheries and heat wave experts on several projects
            - Heatwave relations to striped bass and summer flounder
            - Using tools and codes to identify marine heat waves with NOAA buoys
            - Identify research gaps in marine heat wave system
- Questions/Comments
    - Since this is impacting habitat quality, what role should FHAT play?
        - Response: Fill science needs, meet 1 on 1 to inform marine heat wave alert system
        - Follow up response: Send recommendations to the team as you get closer.

Oyster BMP Report Update

– Olivia Carretii (15 Minutes)

- 2nd Oyster BPM Report
- Covers reduction through oyster harvest
- January-March review - synthesized feedback
    - General agreement with recommendations
    - Worked with panel to provide response
- Recently presented final product to Water Quality Goal Implementation Team
- Almost at the end…hope for improvement in near future
- Questions/Comments
    - Any plans for how new BMP will be implemented?

        - Response: People are just starting to think about it. A few projects are about to kick off. Talking with local stakeholders on how to use BMP to support long term oyster production.
        - Comment: Eastern Bay has an interest in taking a different approach. Funding a spatial design project. Have a broader sense, restore, replenish, and make room for aquaculture. Touch base with Ward.

Marsh Adaptation Project and Feedback from FHAT on project locations that would benefit fish

– Julie Reichert-Nguyen & Catherine Brown (20 Minutes)

- Partnership-Building and Identification of Collaborative Marsh Adaptation Projects
- Marsh Adaptation
    - Incorporating climate change and resilience strategies
    - Climate change factors: sea level rise and increase in storm events/precipitation
    - Strategies
        - Marsh migration corridors
        - Restore marsh sediment dynamics and vegetation
        - Ensure habitat connectivity
- Draft Framework
    1. VA/MD Metric Mapping
    2. Partner priority alignment mapping
    3. Specific projects
    4. Project selection
- Data used to assist in identifying regional focus areas for marsh adaptation
- 7 Focus areas being considered (two will be selected for more in-depth workshop discussions)
    1. Pocomoke Sound Area (Crisfield, MD to Saxis, VA)
    2. Wicomico River (Monie Bay to Deal Island, MD)
    3. Choptank River, MD
    4. Suffolk/Elizabeth River, VA
    5. Middle Peninsula, VA
    6. Middle Peninsula Tribal Lands (Mattaponi, Pamunkey)
    7. Chickahominy River, VA
- Tier 1 Visual Analysis - Criteria
    - Existing Marshes
    - Marsh Size
    - Marsh Stability (UVVR)
    - Partner Activity
    - Marsh Adaptive Capacity (Migration)

    - Protected Lands
    - State Targeted Priority Areas
    - SLR Projections
    - Risk and Vulnerability
- Fish habitat data considered to connect with funding opportunities
    - Atlantic Coastal Fish Habitat Partnership Diadromous Fish Habitat Scores
    - CBP Hardened Shoreline Threshold Based on Fish Species Decline (per 1000 meters) - Resilience Interpretation (Draft)
    - Questions to consider:
        - Are any of the areas of particular interest for fish habitat goals? Are there any areas missing that we should be considering?
        - Are there any additional fish habitat datasets we should be considering to connect with funding opportunities? What are they?
        - Are there any funding opportunities that fish habitat partners are particularly interested in pursuing for marsh projects (research and/or implementation)?
- Second Tier mapping additions will include fish habitat data such as hardened shoreline and more.
- Tasks:
    - Feedback on partner priorities
    - Additional tools/data welcome. Input on sources
- Questions/Comments:
    - What about the Patuxent region?
    - How do you decide between two? Ex: 4 v. 5. Consider looking at urban v. non urban…would be valuable
        - Response: Funding for at least 2, ma be and opportunity for more
    - Is the intent to focus on public land?
        - Response: Public land is considered first as it may be easier to start projects on public land
    - On the map #6 - Look at spawning v. nursery? Area is secluded…work might be important
        - Response: I would like to look at that.

CESR Report

– Bruce Vogt (10 minutes)

- Linked here

Timeline for FHAT Action Plan and Adaptive Management Review

- November 2023 presentation to Management Board
- Start working on 2-year update review now!
- Will begin reaching out to FHAT members for progress updates