Climate Resiliency Workgroup – Marsh Adaptation Working Meeting with Envision the Choptank Advancing Large-Scale Restoration Working Group

October 22, 2024
11:00 – 2:00 PM EST

Event webpage:
https://www.chesapeakebay.net/what/event/climate-resiliency-workgroup-meeting-october-2024

Summary

Focus of Meeting

- *Learn about marsh adaptation strategies and brainstorm potential project areas that include brackish salt marshes and/or forested and non-forested tidal freshwater marshes in the Choptank River with coastal resilience and wetland experts.*
- *Use the Marsh Adaptation Mapper tool to consider marsh restoration and protection options under different sea level rise scenarios.*
- *Identify marsh adaptation opportunities, challenges, and potential projects that align with Envision the Choptank interests.*

Presentations

Coastal Wetland Adaptation Areas of Interest in Choptank River Complex – Matt Pluta, ShoreRivers

Matt presented on coastal wetland areas of interest for restoration and/or protection in the Choptank River Complex Habitat Focus Area. These included tidal fresh, forested marsh upriver, tidal salt marshes with tidal forested marsh upstream, minimal-moderate brackish saltmarsh habitat at the mouth of Choptank River. His presentation lists the various marshes for restoration/adaptation consideration within the Choptank River.

Maryland Marsh Adaptation Planning and Implementation, Nicole Carlozo, Maryland Department of Natural Resources

Nicole presented on marsh adaptation strategies for planning and implementation in Maryland.

Jug Bay/Patuxent R., Patricia Delgado, Jug Bay Wetlands Sanctuary

Patricia presented on examples of marsh restoration strategies in Jug Bay's non-forested and forested tidal freshwater marshes and information on monitoring data that can inform adaptation strategies.

Marsh Adaptation Perspectives, Pam Mason, Virginia Institute of Marine Science
Pam presented on marsh adaptation considerations for various marsh types and information on short-term and long-term planning.

Marsh Adaptation Mapper, Julie Reichert-Nguyen, NOAA
Julie presented information on the Marsh Adaptation Mapper and worksheet scenarios and questions for the breakout group discussions.

Breakout Groups

In-person participants met in two groups to discuss marsh adaptation ideas for brackish saltwater marshes or non-forested and forested tidal freshwater marshes. Virtual participants met in one group to discuss all three types of coastal wetlands. Goal of the breakout groups was to generate collaborative ideas for marsh adaptation projects that can range from assessment, research, design needs, and/or implementation. Groups aimed to have a mix of Envision the Choptank partners and coastal resiliency and wetland experts with a member of the project team facilitating the discussion.

Brackish Saltwater Marshes (in-person)

- The group first examined the two predetermined sites along the south bank of the Little Choptank
    - Jamileh clarified that these sites were selected as they provided good examples for both in-tact and degraded marshes that are bordered by both protected lands and private lands
- For the John's Point site (bordered by the Harriet Tubman Underground Railroad National Park)
    - The group noted that the edge of the marsh complex is deteriorating; there is good marsh migration potential inland (land conversion from forested to wetlands)
        - Potential for some living shoreline/ restoration projects on the marsh edge
        - Protected lands on the national park provide opportunities for facilitated marsh migration
        - The current marsh itself is not on protected lands; need to discuss land acquisition
        - Look where current projects are underway to collaborate with partners too
- In the general region
    - Marshes are highly fragmented around the region limiting large scale opportunities
    - Prioritize regions experiencing saltwater intrusion to focus efforts
        - On agricultural land what incentives exist; coastal resilience easements; ecosystem services crediting (Laura Costadone)
            - Challenges with leased ag land- the landowner receives compensation but the farmer does not

        - Transition farming to salt tolerant species in migration areas- challenges with a limited market for this
        - Using unusable ag land, impacted by saltwater intrusion, as areas to grow marsh plants for restoration- opportunity to create new program that allows for this- Sierra Hildebrant
- Issue with granularity of Social Vulnerability data
    - EJ Screen and FEMA data are at a census tract, but community vulnerability varies widely within each tract- need ground-truthing to understand what communities are most vulnerable and at risk
- Fish Habitat- data indicate that restoration would support diadromous fish habitat; opportunities to transition hardened shorelines to living shorelines and nature based strategies
    - Challenges: Would be able to convert seawalls to living shorelines and the end of life for the seawalls, but it is harder for other forms of gray infrastructure (e.g., riprap)
- Programmatic and policy opportunities
    - Nature based solution (NBS) impacts on property values and insurance; currently a challenge for homeowners to adopt NBS, but if they can show marked improvement in property values or if insurance incorporates them into rates, could help with adoption (Laura Costadone)
- Overall takeaway

Non-forested and Forested Tidal Freshwater Marshes (in-person)

- Discussion on Hog Island Marsh (non-forested marsh upriver)
    - Private land – there is a willing land owner who is interested in putting strategies in place to preserve the marsh
    - Vulnerabilities
        - Patchy marsh condition; dams are causing the marsh to be sediment-starved
    - Adaptation
        - There is an existing plan developed by The Nature Conservancy, but not implemented; could look into finding the plan and find out more about it and why it was not implemented
        - Adequate sediment is key; sediment monitoring for a minimum of 5 years can help inform adaptation decisions; look into SET (sediment elevation table) monitoring set up
        - Could consider sediment markers, but difficult to do in a freshwater marsh
        - For sediment placement, need to consider what type of equipment can get in.
- Discussion on marsh below King's Creek (non-forested marsh upriver)
    - Private land, black duck hunting grounds; owners open to restoration to preserve hunting grounds
    - Vulnerabilities
        - Nearby wastewater treatment plant
        - Has a lot of Phragmites
        - Appears it may have muskrats
    - Adaptation
        - To tackle Phragmites, need to treat the whole watershed; recommend ground-truthing Phragmites through mapping/aerial photography
        - Caution in removing Phragmites altogether – could lead to more marsh instability, especially if the marsh is already patchy or will become too patchy;

need to evaluate if removal of Phragmites will cause instability in the marsh – may be better to leave it
        - However, higher vegetation diversity leads to improved marsh resilience; need site data and evaluation to make a decision on the Phragmites control
        - May be worth to control the Phragmites on the inland side to allow for more native vegetation; keep Phragmites at the water edge to make it less vulnerable to erosion
- Discussion on marsh near Dover Bridge (non-forested marsh upriver)
    - Vulnerabilities
        - Degradation from the road – compressed sediment goes back past construction causing marsh to be sediment-starved; upriver is more intact
    - Adaptation
        - The road makes it more accessible for sediment placement; however, need to evaluate the lack of sediment issues from the road – does it make sense for long-term sediment maintenance?
        - Focusing efforts upriver may be better – evaluate potential marsh restoration and migration options
- Discussion on forested tidal fresh marshes upriver (above Tuckahoe State Park)
    - The group discussed the idea of Resist, Accept, Direct; for this forested marsh, some felt that it may be better to accept and let nature take its course
    - If trying to allow marsh to persist could consider water control structures to back up the sediment to allow the marsh to transition more upland (increases marsh migration potential.

Overarching Marsh Adaptation Considerations (virtual group)

- Discussion focused on the following: How to get started, what data to look at, how to prioritize projects, how to know what type of restoration to do, and what to create. Areas looked at to inform discussion included the three marsh areas around Dover Bridge.
    - For existing marsh, what can be done to allow it to persist/manage health
        - Look at edge protection
        - Consider marsh migration if topography allows it (not too high)
            - Consider land owners immediately inland from existing marsh and land cover
    - Consider tidal creeks connected to marsh complexes - benefits & interactions of the creeks with the marsh
        - Might deliver sediment
        - And migration potential
    - Consider doing restoration activities in less healthy areas
        - Connect to high point of land (e.g., promontory)
        - Might need sediment and edge protection for density (marsh health)
            - Marsh edge very important to migratory fish (low marsh) and salt marsh sparrow (high marsh)
    - Consider impacts to infrastructure
        - Maintenance of roads and bridges – involve Department of Transportation
- Discussion on potential restoration matrix products to support a holistic marsh adaptation approach
    - Organize the information in a couple of matrices

        - Upper, mid, and lower Choptank
        - By different salinity
            - Eco services provided and vulnerability (what is being threatened; will vary)
        - Species: migratory birds, nesters, RTE species (heritage data; could inform and connect with other partners)
    - When mapping out regions, consider the why for conserving or restoring: conditions, limitations, marsh condition + surrounding land use + opportunities, habitat, water quality
    - Consider environmental justice questions – which communities need the most uplift (ones that rely on the marshes the most)
    - Consider developing an action plan for Choptank Complex to provide structure and priorities for the work

Report Outs – Overall Takeaways

- Brackish Saltwater Marshes
    - Marshes around the Neck and Little Choptank are highly fragmented limiting large-scale opportunities; however, there is some marsh migration potential in the region. Conservation and protection (easements, acquisitions) are key to allow facilitated marsh migration and land transition.
- Non-forested and Forested Tidal Freshwater Marshes
    - Need to ground-truth vegetation condition and type; map low and high marsh areas; use drone tech and image analyses to map species; improve understanding where Phragmites is and whether it will make the marsh more unstable to erosion if removed
    - Consider focusing on marshes with high habitat and water quality value – develop coastal wetland plan for Choptank River
    - Look into students supporting projects
    - Evaluate whether strategies can be put in place to minimize dam effects on sediment supply
- Overarching Ideas from Virtual Group
    - Create a decision support matrix for planning how to approach the marsh adaptation; develop an action plan

Next Steps

The group will discuss follow-up ideas to further the identification of specific marsh adaptation projects.

Participants

Note: some participants are missing who did not know about the sign-in sheet and not all virtual participants were recorded.

Name	Affiliation
Amanda Pollack	Center for Watershed Protection
Anna Hamilton	Tetra Tech

Carrie Decker	MD DNR - CCS
Charly Sager	MD Forest Service
Debbie Herr Cornwell	MDP
Elliott Campbell	MD DNR
Emily Thorpe	JBO
Hilary Gibson	JBO
Jamileh Soueidan	CRC
Joanna Ogburn	JBO
John Wolf	USGS
Julie Reichert-Nguyen	NOAA
Kaitie Evers	Center For Watershed Protection
Laura Costadone	Old Dominion U.
Lauren Taneyhill	NOAA
Leah Franzluebben	USFWS
Lorie Staver	UMCES
Mark Secrist	USFWS
Matt Pluta	ShoreRivers
Nicole Carlozo	MD DNR
Pam Mason	VIMS
Patricia Delgado	Jug Bay Sanctuary
Sam Eckert	MD DNR - CCS
Sandy Davis	USFWS
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Sierra Hilderbrandt	NOAA COL
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