Shallow Water Habitats Small Group Recommendations

SUSTAINABLE FISHERIES GOAL TEAM MEETING

GINA HUNT

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Shallow Water- Edges and Nearshore Waters of 3 ecological zones:

- Non-tidal
- Fresh Tidal Fresh
- Tidal Estuarine.

"Where most things live"

"Where people interact with the water"

Shallow Water Habitats

VISION- Healthy and sustainable shallow water habitats that support resources, communities, and economies that are resilient to long-term changes in watershed conditions

Think about how some of these recommendations or strategies can become a new metric (outcome or output).

Climate-Resilient Restoration

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Recommendation:
Prioritize system-scale shallow water habitat restoration that provides social, economic, and ecological benefits while also providing resilience and connectivity under changing land-use and climate conditions.

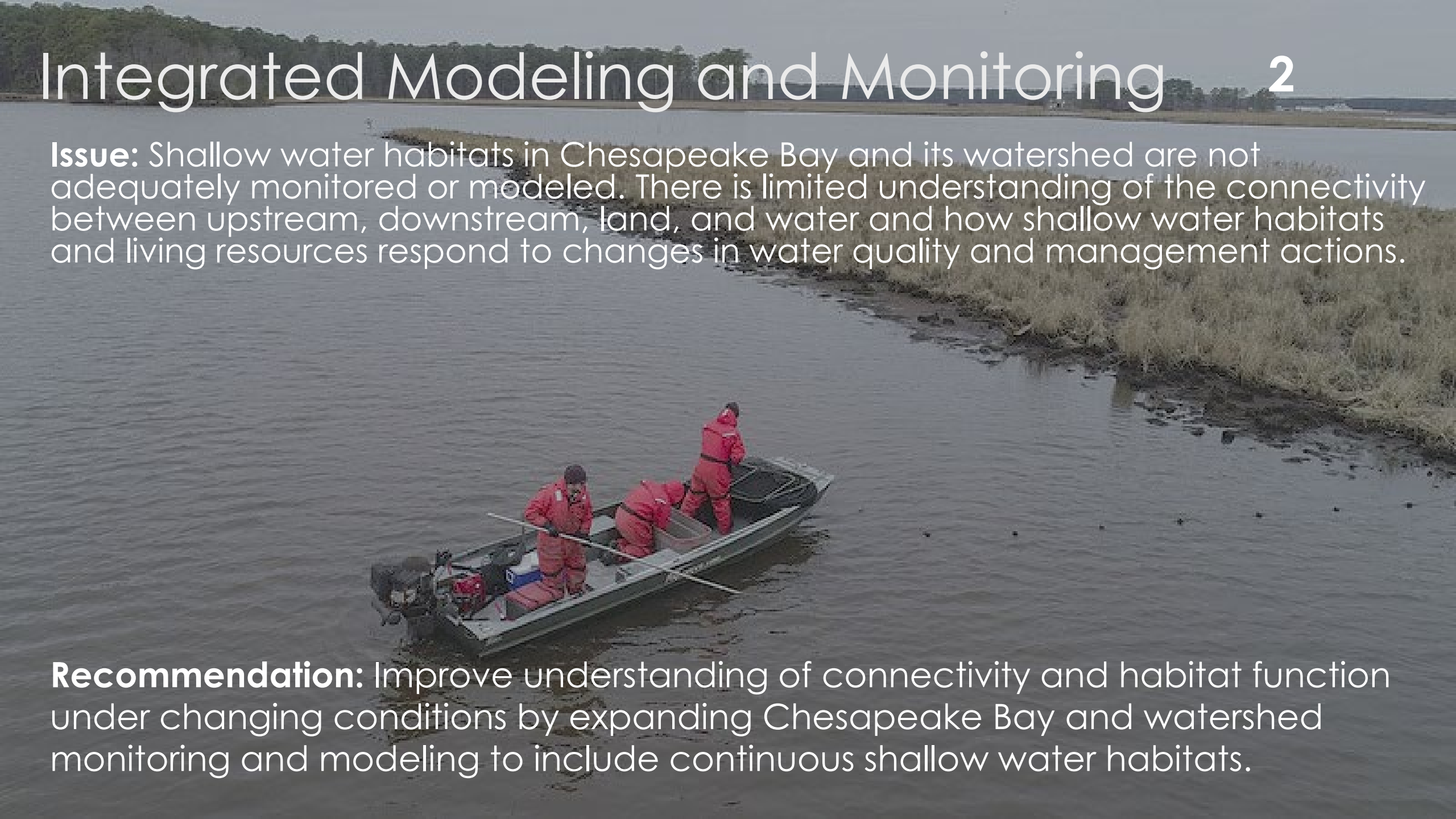
Climate-Resilient Restoration

Strategies:

- Prioritize restoration efforts in areas benefiting from existing **large-scale initiatives** and investments, focusing on shallow water habitats vulnerable to **climate change.**
- Emphasize the restoration and maintenance of multiple habit types in project planning to reestablish **ecological connectivity**. A disconnected restoration project will have limited benefits, particularly in upstream areas of the watershed.
- Incentivize **ecosystem services** (including carbon sequestration) and social needs and use these as success metrics in restoration efforts, on balance with nutrient and sediment reductions for TMDL credits. **Alignment with Climate recommendation for carbon stewardship.**
- Consider project and habitat function overtime **based on new realities** and climate conditions. **Alignment with Climate recommendation to track change in habitat function.**
- Set realistic goals and account for **offsetting losses** and possible trade-offs. Current goals are based on habitat acres "restored" but do not account for those lost.
- Target locations that consider and **address stressors** of shallow water habitats.
- Improve training opportunities and consistency among practitioners.

Integrated Modeling and Monitoring 2

Issue: Shallow water habitats in Chesapeake Bay and its watershed are not adequately monitored or modeled. There is limited understanding of the connectivity between upstream, downstream, land, and water and how shallow water habitats and living resources respond to changes in water quality and management actions.



Recommendation: Improve understanding of connectivity and habitat function under changing conditions by expanding Chesapeake Bay and watershed monitoring and modeling to include continuous shallow water habitats.

Integrated Modeling and Monitoring

Strategies:

- Implement continuous, long-term **shallow water living resource monitoring** and assessment to understand habitat connectivity and habitat function under changing conditions. **Modeling consistent with Climate recommendation.**
- Explore **new methodologies** for long-term habitat monitoring and modeling, potentially including the use of satellite technology and artificial intelligence (AI) to quantify parameters such as temperature, clarity, and chlorophyll-a in shallow water habitats.
- For all restoration projects, include pre- and post-restoration monitoring of sufficient duration to detect long-term causes of failure or success.
- Develop and implement a shallow water **habitat sentinel site** program.
- Develop economic valuations of **ecosystem services** for shallow water habitats.

Adaptation Strategy to inform Habitat Management and Project Planning

Recommendation: Implement a process for climate adaptation in shallow water habitats that integrates adaptation science and community engagement elements.

Primary steps include **conducting vulnerability assessments** and modeling habitat transitions under alternative future scenarios, **engaging the community** in setting priorities for planning, implementing measures at both local and system scales while sharing knowledge, and **evaluating effectiveness** of the measures to improve the desired outcomes.

Adaptation Strategy to inform Habitat Management and Project Planning

Similar to Adaptation framework for Climate

Assess Impacts Vulnerability and Risk

- **Model habitat transitions, species shifts, and invasive species dynamics** due to warming, sea level rise, saltwater intrusion, and precipitation changes, all under a range of future scenarios.
- Standardize terms, models, and methods for **local-use or restoration planning.** Model impacts of alternative decisions.

Plan for Adaptation

- Co-develop adaptation strategies with communities to take advantage of local knowledge and collaborate with local planning and zoning entities to provide a holistic approach that aligns with local priorities.
- Use **alternative future scenarios** to provide decision-makers with options reflecting local community priorities.
- **Identify critical habitat areas** in both tidal and non-tidal waters and develop targeting approaches aligned with maximizing shallow water health.

Adaptation Strategy to inform Habitat Management and Project Planning

Implement Adaptation Measures

- Focus on **conserving** existing functional shallow water habitats such as marsh migration corridors, fish spawning and nursery areas, and riparian buffers.
- **Limit shoreline hardening** and promote the conversion of hardened shorelines to nature-based alternatives.
- Create incentives or rewards for decisions that conserve and protect shallow water habitats. **Consistent with Climate recommendation.**

Monitor and Evaluate Adaptation

- Develop **ecosystem service metrics** of success for conservation and restoration projects.
- Identify successful local programs and initiatives and scale up these efforts.
- Formally and periodically assess effectiveness and implement learnings into updated assessments, modeling, and planning.

Communication and Engagement

Recommendation: Strengthen the connection between people and shallow water habitats by communicating the importance of these ecosystems and their socio-economic benefits to stakeholders.

Develop active and sustained engagement with communities to understand their values and **utilize social science** strategies to develop stewards of their local waterways. Align actions and funding to these values and socio-economic considerations.

Communication and Engagement

Strategies:

- Set **reasonable goals** that consider population growth and climate change that can demonstrate progress to people connected to their quality of life. **Aligned with Climate.**
- Determine opportunities for increased **landowner incentives** through expanded state and federal cost-share programs.
- Fully integrate **social science best practices**, like community based social marketing, to encourage environmentally friendly practices. **Aligned with People recommendation .**
- **Increase public engagement** in habitat enhancement projects, by **understanding local priorities,** seeking feedback on the project at multiple touch points and adjusting course to meaningfully respond to public comments.
- Invest in technical training and regional technical assistance to strengthen outreach capacity. **Aligned with CW, HW & People recommendation on capacity.**
- Highlight economic and ecological values to shift perspectives. **Improved habitats provide community benefits.**
- Emphasize public access to improve and enhance public stewardship.

Effective Governance, Collaboration, and Innovative Funding

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Recommendation: Shift the effort, resources, and accountability evenly across the outcomes. Prioritize product over process and adjust outcomes and funding accordingly. Manage shallow waters as an interconnected ecosystem that leverages collaboration among the Bay Program partnership and organizational structure.

Effective Governance, Collaboration, and Innovative Funding

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Strategies:

- Program should be more relatable, and people driven. **People Team!**
- Establish accountability mechanisms that focus on partnerships and trust, not regulatory approaches, and foster this through periodic training for partnership building.
- Develop mechanisms that track all outcomes (habitat improvements) as consistently and closely as water quality. The water quality tool engages jurisdictions and local government, but Chesapeake Progress does not. Jurisdictions provide data for water quality BMPs, but there is no similar data tool for the other outcomes. **A multi-objective system that engages jurisdictions and local government is needed for other outcomes.** These can be used to **recognize local priorities and improve collaboration among different levels of government.**
- Reward preventative measures, not just corrective measures.
- Develop a definition of sustainable funding as a marker of progress. For example: dedicated funding mechanisms tied to **building capacity,** including the creation of markets for **nature-based solutions.**

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Questions & Discussion