BEYOND 2025: SHALLOW WATER HABITATS SMALL GROUP Listening Session

January 8, 2024

BREAKOUT GROUP: 1 of 3
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QUESTION 1: What do healthy and sustainable shallow water habitats look like to you?

Recognize that "abundant life" does not mean everything is abundant. Abundant within the context of community organization - some are naturally rare.

coexistence of species, clear water, natural vegetation, and minimal human impact

Includes elements of the biology, chemistry, physical structure, limited fragmentation/enhanced habitat connectivity favorable to healthy and sustainable measures,

1. These would be habitats that both contain the critical (bio)mass or necessary threshold of species that provide the ecosystem services required for...

2. maintaining the health of that habitat, i.e. oysters. Species presence alone would not be enough to characterize a habitat as healthy.

Clear water, gradual depth gradient, SAV, healthy macroinvertebrate community

Cool waters, buffered from rising water temperatures

Full Aquatic Organism Passage (no artificial obstructions to the movement of migratory and resident fish and other aquatic life.)

Safe (swimmable), fishable waters and associated transition zones supporting native flora and fauna.

diversity reflects a variety of species and ecological processes; this imparts stability. Stability and resilience mean the ability to return to similar state after perturbance.

Providing expected and needed ecosystem services

3. And, that the threshold results in the ancillary benefits one would expect, i.e. water clearing capacity to maintain SAV resilience and the increased productivity one would associate

4. with increases in biomass of benthic invertebrates and reef/SAV dwelling fishes and forage species that attract the larger iconic transient species.

Full AOP (Aquatic Organism Passage: no artificial obstructions to migratory and resident fishes and other aquatic life).

water clarity is "good"

Clean water; robust habitats (SAV, wetlands, oysters, etc)

These habitats reflect multiple natural resources (terrestrial and aquatic) co-benefits and allow for landward migration/adaption of sea level rise

healthy SAV, clean, clear water, accessible to the public where/when appropriate, habitat for diverse species

Healthy waters with healthy juxtaposed habitats (i.e., shoreline integrity, flood plain connectivity, riparian zone heterogeneity, maturity.)

abundant biogenic habitat, improved water quality, resilient ecosystems, equitable access to coastal areas for (1) recreation, (2) harvest, and (3) resilience of coastal communities

Supports ecological communities that are valuable for their own sake and those that are valued for human uses (recreation, drinking water, food, commerce, flood mitigation)

Intertidal habitat that connects the land to the water, which is resilient to relative sea level rise in a way that those habitats can migrate upland and inland gradually (not all being walled off)

Diverse and resilient habitats supporting ecosystem function and ecosystem services that benefit people

Sustainable - account for climate change and sea level rise to ensure high quality shallow water habitats will persist through time for living resources.

protected marine life and sav

diverse ecosystems

able to adapt to changing climate conditions

Living resources safe for human (and food web) consumption

Connected and functioning system (flora & fauna)

continually meeting water quality designated uses

Proper sediment transport-integrity same after storm

Good water quality, vegetation and roots to stabilize banks, shade for temperature regulation, flow regime, good fish and bug communities, and where people and nature can co-exist.

For non-tidal streams perhaps stream health workgroup and Healthy watersheds GIT information could be used to help answer

Equal focus of clean water for waterways throughout the entire watershed.

Wild brook trout population viability

They support diverse ecosystems

Healthy riparian ecosystems

free of more than just too much N and P

diverse ecosystems

QUESTION 2: Where should focus be given to maintain or improve shallow water habitats?

For example, this could be geographic focus, modeling focus, people focus.

Places where shallow water habitats benefit people (esp underserved populations)

monitoring to quantify and demonstrate the benefit.

Where enhancement will have longest lasting ecological benefit.

making sure there's space for these habitats as climate changes

Focus on locations of existing hardened shorelines and converting these areas to nature-based shorelines with ecological benefits

Don't ignore urban areas

1 OF 2: Shallow waters are inherently most likely to be used by people (non-tidal and tidal). Need to better understand links between people and focal outcomes.

To start, the location should benefit from existing large-scale restoration efforts and significant investments in BMPs and partnerships to sustain these efforts coupled with the

Crystalizing research questions to pose

Overlay existing maps and criteria to find where things line up between underserved communities and potential for water quality/habitat/health improvement.

The combination of both remote sensing and monitoring data to enhance existing modeling efforts. This would help provide a more detailed look at these waterways.

Emphasize protecting what is already healthy. This is needed as much as is restoration of stressed areas.

Maintain all major habitat subtypes (e.g., infrequently-flooded high marsh within tidal estuary complex) in healthy condition to support associated species (e.g., Saltmarsh Sparrow)

Modeling focus: shallow water habitat transitions due to changing climate conditions and sea level rise. Understand change of these habitats and how to keep them healthy.

Include more structural BMPs - retain woody debris, enhance reef acreage, reduce toxic hotspots, manage urban hot-water runoff negatively affecting shallows

Rethinking invasive species re: Climate Migration (e.g. Southern species moving north maybe shouldn't always be considered invasive)

Focus on 1) areas where the depth of water supports SAV/ oysters + shoreline areas that support vegetation and 2.) areas that will allow for landward migration

2 OF 2: How can we better manage tradeoffs between people's needs and shallow water's needs/outcomes?

Priority coldwater habitat areas

Why: many shallow water habitats are vulnerable to climate change (increased precip, temp, SLR).

where there is active erosion should be prioritized

QUESTION 2 CONTINUED...

Protect headwaters via direct protection (easement and acquisition) and also policy and education.

secure funding and resources to maintain progress

model and predict future development and evaluate our ability to mitigate for that (this is a point more about planning for where the work should happen/prioritiation).

Shoreline integrity conserved and recovered - limit bulkheading in tidal waters, manage growth and development in riparian zone across all 3 zones

Coordinate with local planning and zoning entities and influence regulations so that on-land decisions do not work against shallow water health

Recognize that criteria for healthy non-tidal habitats may not benefit tidal habitats and vice versa.

Continue to consider strategic siting of aquaculture sites that limit negative interactions with SAV.

Securing lands for migration of forests and wetlands with SLR as shallow water in the bay advances inland

Remove unnecessary dams to create full AOP while also restoring stream sections to their natural form and function.

Focus on a subset of areas that have high ecological value for key species. E.G. prioritize 5 striped bass spawning areas for conservation/restoration/monitoring

Model to expand beyond TMDL

Prioritize tidal shallow water habitats. Nontidal waters are important, but get complex requiring more coordination with jurisdictions on monitoring/assessment/mgmt

utilize priority watersheds that are already identified, such as brook trout 'strongholds' or connected catchments

Where people are currently experiencing the watershed/waterway despite it being degraded - we want to make near term impacts where people will benefit readily

Add plant diversity, diverse habitat spaces.

living shorelines and innovating in this field to make them more accessible to communities and applicable in many more scenarios

For SAV improve SAV numerical simulation modeling for better process-based prediction and revisit SAV habitat thresholds now that we have more data & better computing

Prioritize invasive species management

Consider the aesthetic values of human use that can include reduced HABs, locating energy infrastructure (like windmills or aquaculture sites or future nuclear plants)

Identify and restore triblet river corridors that have a disproportionate impact on targeted shallow water resources (e.g. due to altered flows, heat eff

high energy wave energy areas - slabilization

Permitting. Lots of focus on restoration (via BMPs) but often not enough on pollution prevention. The effect of any single site or facility can decimate habitat offsetting good work.

Continue public education of shoreline landowners on lawn management (e.g., fertilizing frequency, quantity), landscape management to improve shoreline quality

Minimizing runoff (volume, sediment load, nutrient load, scouring, etc...)

Healthy watersheds assessment may be helpful https://storymaps.arcgis.com/stories/6c45b975e27d413bad23988dc2dde5ef

In tidal waters, maximize SAV recovery across the bay as the multiplier, cross-outcome benefits of structure and function here are large and many.

Riparian areas

build community advocacy- connect effects of improved shallow water habitat to how that may benefit people

Do we need more BIBI assessments/monitoring for trend analysis?

1. Restoring and maintaining biogenic habitats (oysters, SAV, seagrass, marshes) will facilitate improved ecosystem function, resilience, supporting human health, etc.

2. Restoration and maintenance of mixed habitats to create a mosaic of habitats will be most effective

https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/ChesWatershed-Percent-Healthy-Streams_FINAL_02-10-2023.pdf = streamhealth indicator from workgroup

Using the CHWA 2.0: https://gis.chesapeakebay.net/chwa/?page=Overall

Upland protections

QUESTION 3: How would you go about getting to your vision of healthy and sustainable shallow water habitats? You can't do everything so think about the top two things you would focus on?

Improving shallow waters - target areas for enhanced in-water structures which could include more oyster reefs, more woody debris to diversify habitat in each zone

Developing methods and ways to connect people with the shallow water habitats in healthy ways (ex: trails, education, ect.).

Actually enforcing protections and legislation. Nonstop development is a main culprit. Won't see much water quality improvement until this changes.

Better coordination among other groups working on similar topics (SHWH, Healthy watersheds)

make sure all jurisdictions and relevant NGOs, academic groups, etc all on the same page

Support "learning while doing" initiatives by strategically aligning practice installations with research investments

provide consistent funding and support access to necessary resources

TMDL drives restoration right now, but we're talking about restoration for ecosystem improvements not just nutrient reduction

The policies and crediting that effectively set priorities for the Bay Program need to be updated

Large scale oyster restoration and reforestation

figure out how best to translate better models into action

Deliver hotspots - which catchments or subwatersheds receive the most/least runoff, especially from impervious surfaces. Model this and announce results

Sustainable land use planning that prioritizes watershed and stream health

More protective conditions in permits of all types and denials of permits where necessary.

Limit shoreline development and protect existing functional shallow water habitats

Need to share questions on previous slides with broader community of stakeholders: elicit their concerns and understanding of management opportunities.

Improve and streamline the permitting processes for restoration projects

Example -> STAC Rising Water Temps report recommends modernizing state water quality standards to better address climate-related heating

Consistent local zoning ordinance to protect waterfront areas/wetlands. climate resilient shoreline areas.

Include modeling on habitat transitions from sea level rise and increasing precipitation.

Supporting management actions of the SAV work plan toward achieving SAV goals that manifest benefits well beyond the SAV itself.

Greater incentives for biological uplift in restoration

Integrate all stakeholders (including industry, watermen, private sector, etc.) in decision making and planning process. Diverse partnerships are essential

Better monitoring of shallow waters to identify high quality areas and those in need of improvement

Develop methodologies to allow for long-term monitoring of shifts in habitats (satellite/AI)

Disruptive conservation. With limited funds for conservation and countless acres of habitat in the crosshairs, get creative in protecting habitat

1 thing: EPA CBP provides specific funding to highway departments to ensure crossings are passable (AOP). DOTs are more and more engaged but need additional funding.

Look at areas with critical habitat for SAV, fish, birds, etc. and conduct climate change vulnerability/risk assessments to inform adaptation strategies.

Include short-term (10 years) and long-term (30 years) assessments.

Support research on how increasing water temps are affecting shallow water habitats and use of habitats by key species.

focus on building oyster reefs where long term impediments to navigation exist....channel markers, breakwall bases, living shoreline structures, bridges...et

The definition from the Healthy Watersheds GIT for non-tidal streams - https://www.chesapeakebay.net/who/group/maintaining-healthy-watersheds-goal-implementation-team

Develop better awareness/adoption of beneficial daily behaviors/practices among watershed residents using effective methods of social science and education.

Water Quantity planning that includes healthy ecosystems

This maybe requires different funding mechanisms and goals

Permanent land conservation to protect habitats and water quality

conversations/workshops with municipal governments and regional planning commissions, about importance of stormwater controls and siting of new development.

QUESTION 4: What sort of public or community engagement strategies would be most successful for connecting the public to shallow water habitats?

Working with Realtors to help private landowners know about BMPs or policies or presence in the floodplain at housing purchases

1. More and continued education about the abundant life in these areas and how vital they are to the organisms in the Bay people love (crabs, rockfish, oysters).

2. Hands on experiences that create direct connection to people and these areas (kayaking, seining, wading...). Personal experiences = increased caring!

Protecting and identifying natural trails that people can walk and experience these habitats without interrupting natural processes.

continued expansion public involvement habitat enhancement projects....shell collection/deployment , reef balls, pyramids, oyster castles, cages, grass planing, etc.

talk about what it means to them and their pocketbook, and quailty of life, whether it is a family or a municipality

Water Quality Monitoring on local waterways: How-to Workshops and Engagement sessions with local non-profits and community members to support existing datasets

Increase engagement with communities/stakeholders least connected to downstream impacts & in areas with higher levels of impact.....trash, high temp run-off...etc.

Provide convening opportunities to share and find solutions to address stakeholder concerns.

structured outreach & social media campaign highlighting specific projects/types of habitat enhancement going on in the watershed.

Shift perspectives to develop/align strategies so as to address multiple objectives (e.g., including viewshed preferences).

More public access so people can directly see and enjoy shallow water habitats

Determine, document, share the comparative local economic impacts of improved, high integrity shallow waters - applicable in all 3 zones.

Utilizing the history and culture of shallow water habitats to help build a connection to people. Provides a backbone for conservation for people.

The same approach will not be appropriate for all so diversification of chosen strategies and the message will be required to meaningfully engage the public

More cross Habitat workshops/events for restoration professionals

Continue Bay education programs for students like MWEEs

More imagery of the benefit of the ongoing work and monitoring to show year over year improvements in the target benefits where the restoration efforts are taking place

Normalize doing the right/best things for the environment. (e.g., through mainstream media/ social media, etc)

Real estate values often reflect the quality of the local environment so, again, economic value complementing ecological value can show win-win messaging

Identify already accessible areas and use them to tell the habitat story

Ensuring ample time for comment periods. Also, make sure comment periods are early enough in the process to meaningful impact recommendations.

Show we care about their lives by promoting work on the landscape for the sake of communities there. Folks in headwaters may not respond to arguments about the estuary.

Clone Karl Blankenship

Behavior change work that results in people understanding what healthy versus unhealthy habitats look like to deter damaging practices (hardened shorelines, wetland mowing)

Listening to the public and communities and hearing their needs

Public demonstration sites where people can see first-hand how restoration work is benefiting shallow water habitats (and where they can actually experience the benefits)

apply systems thinking and theory to systems planning and conservation collaboration (more conservation social science)

More engaging "fun" programs (i.e. Mobile Mussel Hatchery) to excite people accompanied with information on how they can help.

Couple access with guided, inclusive programming that helps people to understand the value and how they can be good stewards. Access alone is not enough.

Invest in technical training to strengthen outreach capacity

rely on local non-profits, watershed/rivershed groups, and leaders in the community to connect with local communities and seek involvement/input

Hold educational events through every region of the watershed, not just MD/DC/VA.

help with capacity and workload of smaller groups. It's harder for them to take on all the new funding available.

QUESTION 5: How can the bay program add value to new or ongoing work in shallow water habitats? (Examples could include coordination, policy, science support)

Bring the different Bay jurisdictions together to leverage funds to complete large and meaningful restoration projects

Perhaps the future of the agreement may have a targeted shallow water outcome that integrates SAV, not necessarily based solely on SAV

Facilitate education about BMPs and implementation that will create self-sustaining, locally supported restoration/maintenance of living resources.

focus on defining desired future states that are achievable rather than trying to restore towards past conditions

Develop decision support (model tools) to id where human activities imposes disproportionate impacts on shallow water resources (&where mng't can best help)

help make sense of all the existing tools and monitoring programs... maybe consensus building

Promote the importance of permanent land conservation and how this plays into creating healthy environments.

Integrate in TMDL modeling habitat transitions from sea level rise and living resource endpoints

1 OF 2: Refocus monitoring from the midbay in fisheries and water quality to the regions that one would associate with the shallow water

Revise CBP Objectives to reflect stakeholder input (including feedback from this call) regarding objectives and targeted endpoints (measurable outcomes).

Ongoing coordination and evolution of the monitoring programs and analyses to support economic and ecological messaging needed

There are a lot of videos and information on the bay program site- packaging these into lesson plans for teachers or non-profits would be helpful and accesible

Guide research community to conduct studies that strengthen outreach, modeling, and implementation strategies.

Use scenario analyses to provide options for decision-makers on maximizing different benefits for representing local community priority interests

Connect these strategies more with the accountability framework (or whatever it will be in the future) wherever relevant.

holistic restoration [research? planning? coordination?] to harness positive feedbacks/facilitation between connected shallow habitats

2 OF 2: (tidal-subtidal zones where restoration is targeted) effort.

Policies needed on temperature management (e.g., run-off), chemicals applied that can runoff and be highly toxic, plastic-source management to impact living resource

Integrate model, as other notes have said, keep data current

Creating new funding mechanisms that are tied to ecosystem improvement rather than nutrient reduction

CBP could elevate priorities for toxics management as this links strongly with fishable waters interests of many stakeholders, part of swimmable too.

CBP could establish crossing criteria for new and repairs. MD/FPWG has a document to start with. VA has existing general criteria. Policy by CBP could add weight.

Connect groups doing similar efforts across the Bay region so that collaboration is improved. We need to stop repeating efforts and minimize competition for funding

Make it easier for data and reporting to get integrated into models

Stream health WG and Healthy Watersheds GIT have abundant information for non-tidal streams

connect researchers with various types of policymakers and community groups toward shared goals

GIT funding

QUESTION 6: Are there any other considerations for the Shallow Water Habitat Small Group as we move through our work?

One of the biggest interests of citizen groups is bacteria conditions/swimmability. Integrating bacteria assessment and management for human health and wellbeing is high valu

Contact recreation concerns involve all 3 zones, socio-economic dimensions because impaired waters affect access, use, and economics of everywhere

We have expressed many good ideas here - to be helpful, capturing them in a conceptual model of shallow water health will help everyone be on the same page

Shallow water assessments at baywide scale with satellites for key parameters (Temp, clarity, chla) is feasible. We need support to go from research to operations

...fishers want/need to fish, aquaculture is important, so is boat access to a pier and hence dredging intersects with habitat protections. It's 'portfolio management'.

One of the figures in the living resources section of the CESR report may be useful as a reference to a conceptual model applicable to shallow waters

Balance then meaning - DOD needs some areas for national security purposes, living resources offer ecological and economic benefits, hunters want to hunt..

Maybe we need an exercise to illustrate alternative future scenarios for decision making portfolios on shallow H2O. One might stress aquaculture, another conserv, etc.

A balance will be needed. Management of common resources for society tends to mean allowances for diverse interests to engage with the resource

Long term - with SLR expectations, somewhere out there is the nexus that includes resilience versus managed retreat. Reality: some island communities already gone.

How will this Small Group address shortcomings identified in CESR report?