Chesapeake Bay Program
Science. Restoration. Partnership.

Joint Stream Health Workgroup/Forestry Workgroup Meeting
June 7, 2023 Meeting Materials

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9:00 AM **Welcome and Introductions**

9:10 AM **Announcements**

- **Welcome Forestry Workgroup at-large FWG members**
- **FWG Co-Chair Announcement:** The FWG is seeking two new co-chairs (one focused on rural watershed forestry and the other focused on urban and community forestry) to lead the Workgroup starting in September. See full announcement HERE.
- **RFB Action Strategy report-out at July MB meeting:** Management Board members were asked to provide an update on implementation of their state RFB Action Strategies at the July 13th MB meeting. See guidance HERE.
- **C-Stream Intern:** The Forestry Workgroup is hosting Will McGrath as a C-Stream intern this summer. He will be working on evaluating financial and human capacity needs for accelerating riparian forest buffer planting
- **Stream Health WG June Meeting:** Friday, June 16th from 10:00-12:00 ET - **LINK**

9:20 AM **Stream Restoration STAC Workshop follow up-** *Greg Noe, USGS*

Greg provided background on the STAC workshop: *The State of the Science and Practice of Stream Restoration in the Chesapeake: Lessons Learned to Inform Better Implementation, Assessment, and Outcomes.* He provided the draft recommendations from the workshop.

The workshop was based in adaptive management, where experts and stakeholders can learn lessons from past stream corridor restoration projects to improve restoration outcomes.

The workshop focused on past stream corridor restoration approaches, present work and regulations, and what the future might look like based on the best available science. Greg provided a high-level overview of each of the focuses of the workshop.

The keystone talks at the workshop focused on synthesizing science on various responses to restoration efforrts:

- In-channel biotic response
    - Biological uplift is rare. There are some examples, but it isn't widespread
- 'Stabilization' of channel form over time
    - Natural channel design in the eastern US can stabilize channel form over typical monitoring periods of up to five years. There is little peer-reviewed literature on new design techniques that focus on channel and floodplain geomorphology, at least in part due to the fact that there hasn't been enough time to evaluate whether these approaches lead to stabilization over time.
- Riparian
    - Often short-term negative impacts to riparian vegetation. Loss of existing trees in the riparian zone from stream restoration implantation occurs. But dedicated, careful, intentional riparian restoration can improve riparian ecosystem health.
- Water quality
    - Restoration effects are mixed, but there are measurable improvements that make BMP practices worth considering for attenuating nutrient pollution and sediment control. Tradeoffs and unintended consequences may occur (for example, there may be nutrient/sediment improvements but reduced DO).

The steering committee created the " causal chain," which was affirmed by the workshop and helps explain stream restoration approaches and outcomes. The chain is a concept that helps illustrate the stream restoration cycle and demonstrates that restoration outcomes are a result of multiple factors:

Degradation -> Regulatory/policy drivers -> Goals -> Design approaches/practices -> Monitoring -> Outcomes.

In the Chesapeake Watershed, stream restoration is often a response to the Clean Water Act mandates to reduce N,P and sediment to the Bay. Most often, stream restoration projects do not have a primary goal to improve ecological uplift and, therefore, do not improve aquatic macroinvertebrates or fish communities. Reach-scale restoration doesn't effectively mitigate watershed-scale stressors of stream ecosystems.

Draft recommendations for improving outcomes of stream restoration:

- Follow existing regulatory policy requirements that functional uplift must occur.
- Make ecological uplift a goal if that is a desirable outcome (and prioritize projects and focus towards that goal)
- Clearly state objectives of a restoration
- Identify stressors of stream health prior to restoration
    - Targeting streams where there is a single or few identified stressors are more likely to have good outcomes (rather than places where there is a complex cocktail of stressors)
- Consider the appropriate historical and modern reference conditions
    - Choose appropriate approaches given historic alterations to the landscape
- Focus on ecosystem stability, not just geomorphic stability, and allow for dynamic change.
- Avoid harm- target stream restoration to more highly/strongly disturbed streams
    - Use caution with approaches that could transform cold, freeflowing streams with high-quality biota
- Restore entire stream corridor
- Target smaller streams
- Asses pre-restoration conditions and restoration outcomes using multiple metrics of stream ecosystem health. Test hypotheses and provide actionable information.
- Assessment of outcomes should consider time lags- some stream responses are slow.
- Inaction is also a choice and can lead to further degradation and restoration can set the stage for future improvement following alleviation of untreated stressors.

Discussion on the presentation occurred. Discussion focused on targeting restoration to where it is most needed, using new geomorphic metrics for targeting, better coordination to take a watershed approach to restoration, and the importance of recognizing sediment as a natural part of stream ecosystems (it isn't always a stressor- more nuance is needed).

9:40 AM **GIT Funding Fundamentals-** *Katie Brownson, USFS*

Katie will provide some background on Goal Implementation Team Funding

This agenda item was skipped for the sake of time.

9:50 AM **Maintaining Forests in Stream Corridor Restoration GIT Funding Follow up-** *Lisa Fraley McNeal, Center for Watershed Protection; Katie Brownson, USFS*

Lisa reviewed the Maintaining Forests in Stream Corridor Restoration GIT funding project.

Lisa provided background on the project and then shared recommendations. The recommendations were shared as the phases of a project:

- Site Selection recommendations: need for clear definitions of existing "high" and "low quality" streams and riparian areas that need restoration and guidance from state regulatory agencies. Proper site selection using a watershed-based approach is the most important best practice to target restoration to areas in need for restoration and prevent impacts to existing high-quality streams and riparian areas.

- Establishing Goals and Objectives Recommendations: Proposed stream restoration projects should be developed through a functional assessment process, such as the Stream Functions Pyramid as opposed to just seeking TMDL credit.
- Design and Permitting recommendations: Important best practices include pre-application meetings with federal and state permitting agencies and coordination with forest agencies. Include assisted migration in planting plans, incorporating species likely to be adapted to changing climate conditions.
- Monitoring and Maintenance recommendations: A pooled monitoring approach and for local governments and funding agencies to allow for a percentage of funds to be allocated for post-construction monitoring and maintenance and extend the allowable project period so that monitoring can occur over the long term.

There is a "Next Steps" document that is broken into stream restoration phases. It provides details on the recommendations and action items to help move it along.

Katie led a discussion about opportunities from the Next Steps document. Some of the actions, such as those related to improving the site section, could be a direction for a follow-up GIT funding project. There are also some follow-ups related to the stream temperature work that could be a potential GIT Funding project. Country regulation review was another follow-up suggested as a potential GIT funding project.

Discussion on GIT funding and other funding opportunities were discussed (Pooled Monitoring Initiative's Restoration Research Award Program). Ideas for projects were shared. They included:

- Exploring hydrological and recharge benefits of riparian forests. Could connect with water temperatures based on stream recharge and cooling prior to hitting the stream channel
- Best Practice guidance on the protection of trees within a stream corridor, forest management planning for transitioning forests (for non-foresters).
- Identify intact forested watersheds and high-quality areas.
- Re-establishment of forest buffers. Review of plans to ensure that buffers still exist after five years.

10:20 AM Riparian Forest Change Data- *Sarah McDonald, USGS*
Sarah shared draft 100ft riparian land use and land use change data for the watershed and discussed how this riparian data would interface with the hyper-res hydrography data.

Sarah described what went into the creation of the riparian zone. The data that went into the data layer include the Bay shoreline, 1-meter land use/land cover data, and FACET. The new data uses 1:24 k scale data, making it a much finer scale compared to the previous 1:100Kdata and has better alignment with the stream network on the ground. The forthcoming hyper-res data will be even denser so much more work is needed to better understand the data. Work is funded related to perennial flows so we can focus buffers where there is year-round water (but likely won't have this done until FY25). There are also expectations of a 1:2K riparian layer. Sarah also noted that the 1:2k data is going to be more variable across the region, but may result in an overall increase in % riparian tree cover since many of the new 0=order streams are fragments in places where it is difficult to develop/use in other ways.

Sarah shared draft numbers- there is 72% tree cover within the riparian zone and 26% pervious (not impervious or tree canopy, so potentially plantable). There has been slight decreases in % riparian tree cover over time. Important to recognize that a reduction in canopy doesn't mean necessarily mean a loss of trees and new plantings aren't detected yet. The 70% tree cover goal within the riparian zone was brought up, and the minimum was emphasized. Just because we have met 70% somewhere doesn't mean we are done with our work.

Discussion

- Intermittent stream research was suggested as a follow-up to this work.
- Suggestion: divide the watershed by county and have county fact sheets focused on riparian buffer coverage and acres lacking buffers. Counties may be setting new goals in 2025 so knowing the acre potentials will help set the new goals.
- Look at pattern of tree cover in different riparian configurations and implications

Adjourn