Maintain Healthy Watersheds GIT Meeting
February 14, 2022
Meeting Materials

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Stephen Faulkner, USGS
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Sophie Waterman, EPA

Welcome and Introductions – *Jeff Lerner, HWGIT Chair, Consultant, US Endowment for Forestry and Communities*

- Climate Resiliency Workgroup will be meeting on February 14, 2022 from 2-4 PM. They will be debriefing the findings from the Day 1 Rising Water Temperature STAC Workshop.

- The National Fish and Wildlife Foundation (NFWF), in partnership with the U.S. Environmental Protection Agency (EPA) and the federal-state Chesapeake Bay Program partnership, is now soliciting proposals through the 2022 Small Watershed Grants (SWG).
    - Applicant Webinar (Registration) Tuesday, February 15, 1:00pm ET
    - FieldDoc Webinar (Registration) Thursday, February 17, 1:00pm ET
    - Proposal Due Date Thursday, April 21, 11:59pm ET

Legacy Sediment Projects Susquehanna River, PA – wetland and stream restoration to protect and restore watershed health - *David Goerman and Jeff Hartranft, PA Department of Environmental Protection*

Legacy sediments are deposits of sediment that sit on stream banks due to human actives such as damming rivers and streams. This sediment gets built up as the natural flow of sediments gets disturbed. Hydrodynamic changes occur in streams and the overall watershed.

This presentation focused on the South Mountain Creek Watershed. South Mountain is a posterchild of a healthy watershed as it is resilient and has the ability to remain healthy. This is due to the fact that ¾ of the land in the watershed belongs to the state and is mostly forested.

Jeff went into some history of PA and noted that the Commonwealth has a long history of damming and that one of the first dams was placed in the South Mountain Creek Watershed. Dams severely erode streams and rivers and help build up legacy sediment. David noted that once you take a dam out it can take millennia for a stream to fully redistribute its soils on its own. Systems that do not have dams or have been through restoration are the most resilient as they have redundancies in their systems. Redundancy means that there is intentional duplication of system components through out the stream.

When legacy Sediments are no longer built up we see multiple paths flow through out the watershed. We can also see flows of things like the iron manganese in our streams. Iron has been shown to be a critical pathway for fixing nitrogen in poor nutrient systems, while also helping biological pathways to remove excess nitrogen.

Legacy sediments make streams have intense eroded walls instead of wetlands and take away quality habitat for species in the streams. The pre-colonial soils underneath the legacy sediment have been found to contain seeds of wetland species in areas that are no longer wetlands. The removal of the legacy sediment and the redistribution of the pre-colonial soils or hydric soils led to streams transforming back into wetlands, reduced erosion, better habitat, and more diversity of fish. It was also found that when the land was brough back down to the stream that there was a better connection to ground water which led to cooler water temperatures.

There has been some great success in restoring some streams in Big Spring Run, which is a slightly smaller watershed. Monitoring of the restoration happened over the last 10 years. Streams are being restored to their pre-colonial ways which is allowing them to thrive.

Discussion

- Legacy Sediment vs hydric soil: Legacy sediment is a fine silty loam with a lighter brown color, it is non hydric (meaning it it's not saturated by water). Legacy sediments sit on top of the hydric soil. The hydric soil is dark in color, connected to the groundwater, has a higher amount of sand in it, has more carbon due to root mass that lives in this layer. The soil can differ, and things like dams' impact what makes up the soil. The hydric soils hold thousands of years of historic seeds and soils which show how resilient wetland stream systems can be.
- Restoration that happens in areas with urban influence can remain resilient, these efforts do not just need to be taking place in pristine watersheds. There are some thresholds you have to think about and some limitations, but those questions are starting to be answered.
- Legacy soil that has been taken out can be used to reconnect tributary and mainstream systems.
- Restoration is a really good tool to help maintain healthy watersheds
- Ground water connectivity is critical to keep water cooler and when you take away the legacy sediments you increase the connectivity
- In wetland restoration projects it can be found that up to 80% of original value of the land is resorted.

Updates and HWGIT 2022 Workplan and Meeting Outline Development- *Sophie Waterman, HWGIT Staffer*

Sophie started by showing the group the 2022 Workplan, which is living document that is gives topic themes that connect to our Logic and Action plan to each meeting. Specific meeting talking points/topics

are also listed. Between each meeting we are hoping to host different 45 minuet to 1hr long webinars with more in-depth conversation and context on certain topics. Members were requested to provide input on our meeting topics of focus for 2022. A poll was launched If you have any additional ideas, please email Sophie or Renee.

Sophie then went over the three GIT funding project proposals that we are leading and supporting and reviewed their proposed outcome

- CCP Priority Habitat Dataset Scoping project (*Members are requested to provide key contacts and subject matter experts in their jurisdiction that may serve as project advisors or be called upon for input or review*.)
    - Provide a scope of work describing various approaches and resources required for an updated, watershed-wide dataset of important habitat to guide land conservation and terrestrial and aquatic habitat conservation, restoration and stewardship
    - Recommendations related to data, methodology, process and cost estimates for the creation of an updated habitat dataset for CCP.
    - The outcome will lay the foundation for ecological assessment, ecosystem service valuation and metric development.
- CHWA 2.0
    - Further improve, refine, and finalize the Chesapeake Healthy Watersheds Assessment. The CHWA 2.0 outcomes include updated metrics for all Chesapeake Healthy Watersheds Assessment data layers, improved visualization, analysis, and filtering functionality to meet user needs, computed change statistics for appropriate metrics related to land use and vulnerability metrics and user customized fact sheets including interpretation of results.
- Multi Metric Stream Health indicators: data review and development
    - Identification of additional non-biological metrics that may complement the Chesapeake Basin-wide Indicator of Biological Integrity (BIBI), the current Bay Program stream health indicator.
    - Improve understanding the trajectory of stream health (e.g. improving or declining)
    - Ultimately the project will provide a readily communicative, more robust means to characterize local stream health and understand the response of a stream's ecosystem functions to stressors and/or management actions to remove them.

Healthy Waters and Watersheds Round Robin

Each Jurisdictional lead provided a 5-min highlight of accomplishments and developments within their programs. See additional the *Jurisdictional Round Robin Report out* document for more on this.

Reporting Progress on State Identified Healthy Watersheds (updating 2017 baseline and Jurisdictional reporting) - *Renee Thompson, HWGIT Coordinator, USGS*

Renee took some time to talk about updating the state identified healthy watersheds and how we need to update the baseline map with 2022 data. She emphasized that we want to make sure we are following through on our goal to "sustain state-identified healthy waters and watersheds". To help meet this goal Renee and Sophie will be taking time this spring to meet with jurisdictions to revisit how each

state defines their healthy watersheds. We want to meet with jurisdictional leads to make sure that the definition we have is correct and up to date and go over anything that needs to be refined.

Our next steps are the following:

- HWGIT Staff (Sophie and Renee) to meet with SIHW Jurisdictional Representatives
- Refine SIHW Definitions
- Update data as appropriate
- Publish new SIHW baseline data