

Riparian Forest Buffer (RFB) Science Needs

January 2023 Update

Background on the Science Needs Database:

CBP uses this database to engage stakeholders, identify opportunities to better align or evolve resources, update activities and workgroups to address needs, and inform STAC of research priorities. This database can also be used by science providers to identify projects or collaborations of interest on which to engage CBP. Science providers can represent a wide range of entities including, but not limited to, academic institutions, federal and state agencies, local entities, non-profit organizations, and citizen science programs.

Current RFB Science Needs (changes/updates proposed in red, more detail on each of these is available in the [Science Needs Database](#))

Please add information about any ongoing efforts that you are aware of for these current science needs. Currently only the 1st item is listed as high priority- should others be listed as high priority?

1. Monitor forest buffer cover change using hi-rez data
Modify to include evaluating current (2017/18) forest cover in the riparian area using the high-resolution LU/LU change dataset and the hyper-resolution hydrography data when available, add information about ongoing State of Chesapeake Forests effort
2. Monitor forest and tree cover change in developed areas using hi-rez data
Modify to include forest and tree cover change watershed-wide, add information about ongoing State of Chesapeake Forests effort, add as a “high-priority” item
3. Identify better methods for quantifying co-benefits from forest buffers in a way that can be easily incorporated into decision-making
Add information about the upcoming GIT-funded project “Optimizing Riparian Forest Buffer implementation for climate adaptation and resilience” which will synthesize information about climate adaptation co-benefits of forest buffers
4. Develop and mainstream methods to reduce the costs associated with planting and maintaining buffers, while still generating the desired benefits
Maintain as is
5. Explore restoration systems, effectiveness, and plant species. What kinds of forests are we trying to create? Are we planting the right trees and shrubs to ensure the highest success rate?
Maintain as is
6. Identify agricultural landowners who have the greatest amount of bufferable acreage to target for buffer outreach.
Add information about DE’s ongoing analysis of agricultural landowners with >1 acre of bufferable space within CBW
7. Develop low-cost methods for verifying buffer acres
Add information about Chesapeake Conservancy’s efforts to explore ways remote sensing/geospatial tech can be used for BMP verification, unclear if/when a strategy will be developed based on their evaluation.
8. How are previously established forest buffers fairing?
Need to correct details about this Need (details are copied over from Need #10)
9. Water Temperature Increases in Bay tidal and non-tidal areas

Suggest we mark this as “completed” and add a new science need (outlined below) that is a more specific outcome of the STAC workshop. The Climate Resiliency Workgroup is also assembling a broader list of science needs resulting from the STAC workshop for incorporation into the Science Needs Database.

10. Develop tailored buffer outreach materials for farmers and non-farmers, reflecting different motivations and benefits that can be derived from buffers

Add information about OpinionWorks forthcoming study on forestry communications/outreach, which confirmed a need to use more targeted communications with new audiences and identified best practices. As developing outreach materials isn’t really a science need, suggest marking this as “Complete” once we have the OpinionWorks report in hand.

Proposed New RFB Science Needs

Do you think we should include these new science needs? Are there any other science needs we should add? Flag any that you think should be classified as “high priority”.

1. Evaluate potential for additional forest buffers to cool streams, especially in high-priority coldwater watersheds: Use high-resolution land use data to determine the maximum rural stream mileage available for forestation and develop models to determine whether the installation of future forest buffers will mitigate watershed warming factors (*science need identified by the STAC workshop*).
2. Use new high-res LU/LUC change data to improve watershed-wide maps of priority riparian habitat to restore. Geospatial analyses could identify priority areas based on multiple criteria, including coldwater habitat restoration, sourcewater protection, flood hazard mitigation, and places with historically underrepresented populations.
3. Evaluate financial and human capacity needs for accelerating riparian forest buffer planting: Look for relationships between historic funding/staffing levels and planting rates, estimate funding/staffing levels needed to reach the goals in the WIPs, identify barriers for increasing funding/staffing levels and key skills and competencies needed (*we will have a C-sTEAM intern start this work in summer 2023*).
4. Continue to assess opportunities to minimize the impacts of stream restoration projects on mature forest buffers, following up from the Center for Watershed Protection’s GIT-funded project. This should include developing riparian vegetation guidance for stream restoration design based on the best available knowledge and a comprehensive review of county-level regulations to determine how well they incorporate state-level requirements to protect forests and the extent to which they include enforceability measures. *Note: this project also identified other science needs that would fit better under other outcomes.*