

Forest Buffers

Principles for Phase III Watershed Implementation Plans

Planting Buffers for Human Health, Economic Development and Infrastructure

Restoring riparian forest buffers are vital to healthy watersheds due to their effectiveness at cleaning water. Buffers reduce bacteria, microorganisms, microplastic fibers, harmful algal blooms and many emerging contaminants that are found in surface waters. They also keep stream temperatures down, which can reduce the occurrence of algal blooms and bacteria, making the water in our streams more swimmable and drinkable. Herd health also directly improves once cows are fenced out of a stream and a forest buffer is established.

Riparian forest buffers are also a cost-effective water quality practice. Every dollar spent on forest buffers reduces the need for costlier urban practices and less effective agricultural practices. Funding is available to restore riparian forest buffers. Through the federal and state [Conservation Reserve Program](#) almost all costs for this practice can be met.

Stream and buffer restoration offers great opportunities for economic revitalization. Buffers help municipalities by treating stormwater, dissipating flood energy and reducing erosion potential of streams, rivers and tides. Floodplain buffers are particularly important for treating flood water. Buffers also improve recreational services such as fishing, boating, swimming, hiking, biking and wildlife viewing. In addition, quality of life is perceived higher around trees.

Best Management Practices (BMPs) with Forest Buffers in Mind

Many believe that forest buffers are the best BMP especially when considering their multiple co-benefits and cost-effectiveness. All growing forests contribute to clean water, but forest buffers provide critical barriers between polluting landscapes and receiving waterways, reducing the adverse effect of excessive pollutants (including nitrogen, phosphorus, and suspended sediment) while occupying relatively little land. In addition to their well-recognized role in improving water quality, riparian forests fulfill important habitat needs for a host of aquatic and terrestrial species. See the table below for forest buffer BMPs with other co-benefits.*

| Best Management Practice | Forest Buffers | Additional Co-Benefits | | | | | |
|-----------------------------|----------------|------------------------|-------------|---------------|--------------|--------------------|-------------|
| | | Habitat Biodiversity | Brook Trout | Stream Health | Fish Habitat | Healthy Watersheds | Tree Canopy |
| Agricultural Forest Buffer | 5 | 4 | 4.5 | 4 | 4.5 | 4 | 4.5 |
| Forest Conservation | 3.5 | 5 | 4 | 4 | 4 | 5 | 5 |
| Forest Harvesting Practices | 3.5 | 2 | 2 | 4 | 3 | 3 | 2 |
| Narrow Forest Buffer | 5 | 2.5 | 3.5 | 2 | 3.5 | 2 | 5 |
| Streamside Forest Buffers | 5 | 4 | 4.5 | 3 | 4.5 | 3 | 5 |
| Urban Forest Buffers | 5 | 5 | <u>5</u> | 4 | 4 | 3.5 | 4.5 |

*Values were taken from the [Quantification of BMP Impact on the Chesapeake Bay Program Management Strategies](#) study by Tetra Tech. [Appendix E](#) Final Impact Scores evaluates BMP effects on outcomes on a scale of +5 (very beneficial) to -5 (very harmful). **This table shows BMPs that scored a 3.5 or higher and -3.5 or lower for the Forest Buffer Outcome. It is unlikely to find brook trout in urban streams, despite high BMP scoring (indicated by underlining and italics).**



Guiding Principles for Incorporating Outcome

WIP Development

- Calculate benefit of establishing buffers by using the Chesapeake Assessment Scenario Tool (CAST).
- Identify areas where more buffers are needed.
- Increase resources for establishing buffers on agricultural and developed land.
- Insist on buffering all streams on conserved agricultural land.
- Improve internal and external education around the importance of buffers.

WIP Implementation

- Use every opportunity to engage with landowner about buffer restoration efforts, including when contacting for a different restoration practices or conservation easements.
- Educate landowners and increase incentives to establish a buffer.

Tools and Resources

- [A Guide for Forestry Practices for Phase III WIPs](#): Packet of information on all forestry practices
- [Healthy Watersheds Forestry TMDL Forest Retention Study](#): This report includes a toolbox of recommendations and incentives for stimulating forestland retention.
- [Chesapeake Riparian Forest Buffer Network](#): Website with information, resources and success stories related to riparian forest buffers
- Additional information can be found on the [Forestry Workgroup page](#).

Contacts for More Information on Forest Buffers

| Jurisdiction | Website | Lead | Email |
|---------------|---|----------------------|--|
| Delaware | Delaware Forest Service | Marcia Fox | marcia.fox@state.de.us |
| D.C. | DOEE – Trees in the District | Luke Cole | luke.cole@dc.gov |
| Maryland | MD Forest Service Buffer Initiative | Anne Hairston-Strang | Anne.Hairston-Strang@maryland.gov |
| New York | NYDEC Riparian Buffers | Lauren Townley | lauren.townley@dec.ny.gov |
| Pennsylvania | PA DCNR Riparian Buffers | Matt Keefer | makeefer@pa.gov |
| Virginia | VA DOF Riparian Forest Buffers | Todd Groh | todd.groh@dof.virginia.gov |
| West Virginia | WV Chesapeake Bay Forestry | Herb Peddicord | herb.f.peddicord@wv.gov |
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