Forest Buffers:

Principles for Phase III Watershed Implementation Plans

Planting buffers for human health, economic development, and infrastructure

Restoring riparian forest buffers is tantamount to a healthy watershed. Buffers are a cost-effective, common-sense water quality practice—every dollar spent on this practice reduces the need for more costly urban practices and less effective agricultural practices. Funding is available to restore riparian forest buffers. Through the federal-state Conservation Reserve Program, almost all costs for this practice can be met. Each year, there is more funding than is used in this program.

Buffers are effective at cleaning water—they reduce bacteria, other microorganisms, micro plastic fibers, harmful algal blooms, and an unknown number of emerging contaminants that are easily found in surface waters. Buffers 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. Cows also benefit directly-- herd health improved once cows are fenced out of the stream, allowing a buffer to establish.

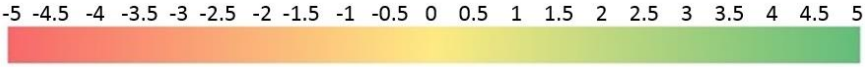
Buffers help municipalities by treating stormwater and dissipating flood energy and erosion potential of streams, rivers, and tides. Floodplain buffers are particularly important for treating flood water. Buffers improve recreational services such as fishing, boating, swimming, hiking, biking, and wildlife viewing. Quality-of-life is perceived higher around trees. Streams and buffer restoration offer a great opportunity for economic revitalization.

Best Management Practices with Forest Buffers in Mind

Of the many best management practices (BMPs) used to improve quality of Chesapeake Bay waterways, the restoration of forest buffers might be the best. Forest buffers provide critical barriers between polluting landscapes and receiving waterways, reducing the adverse effect of excessive nitrogen, phosphorus, and suspended sediment inputs using 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	5	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.**



Guiding Principles for Incorporating Outcome

WIP Development

- Calculate benefit of establishing buffers by using CAST.
- Identify areas where more buffers are needed.
- Staff-up 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

- Engage over buffer restoration at every opportunity: whenever there is landowner contact- whether for a different restoration practice or conservation easements.
- Educate landowners and increase incentives to them for establishing 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
  (http://www.chesapeakebay.net/channel_files/25322/healthy_waters_forest_retention_-_final_report.pdf)
  This report includes a toolbox of recommendations and incentives for stimulating forestland retention
- Chesapeake Riparian Forest Buffer Network (http://chesapeakeforestbuffers.net/)
  Website with information, resources, and success stories related to riparian forest buffers
- More can be found on the Forestry Workgroup page
  https://www.chesapeakebay.net/who/group/forestry_workgroup

Contacts for More Information on Forest Buffers in your Jurisdiction

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	astrang@dnr.state.md.us
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