Green Infrastructure Fact Sheet

Riparian Buffers

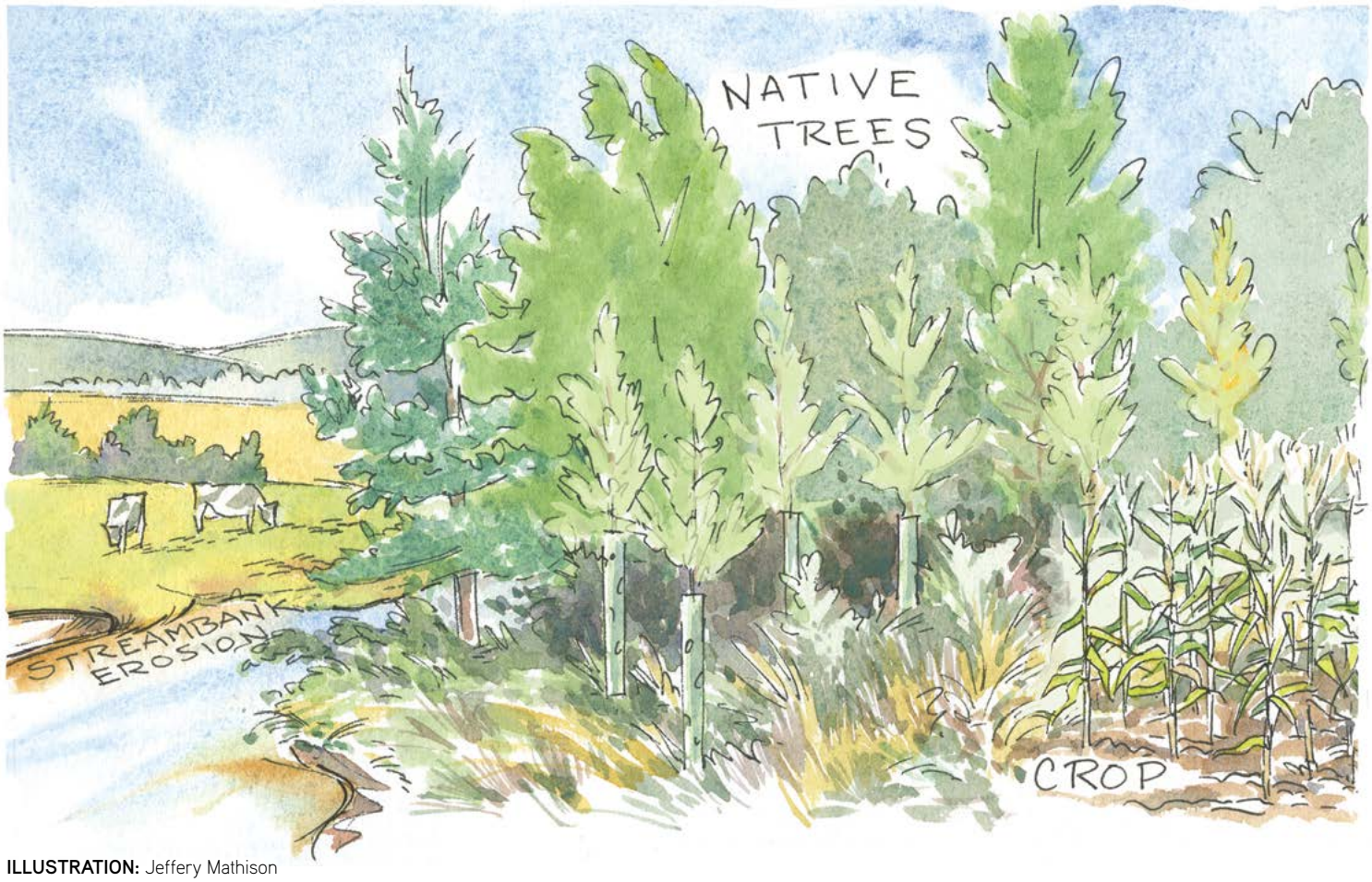

ILLUSTRATION: Jeffery Mathison

Riparian buffers are vegetated areas adjacent to waterways that help filter rainfall and runoff, absorb and retain high stream flows, and provide important wildlife habitat. Buffers link terrestrial uplands to stream, river, or wetland ecosystems. Buffers include a variety of planted, restored, or enhanced natural habitats, hosting different types of vegetation.

For more information:

Green Infrastructure Primer

www.de.gov/greeninfrastructure

Delaware Division of ENERGY & CLIMATE

Delaware Department of Natural Resources and Environmental Control

Benefits:

- Improve water quality by filtering pollutants, nutrients, and sediment from surface runoff by allowing the water to flow through the buffer zone and absorbing harmful substances
- Reduce damage from flooding by slowing the velocity of floodwaters and providing increased flood storage capacity
- Stabilize stream banks and reduce shoreline erosion
- Moderate water temperatures and oxygen to protect fish and other aquatic species
- Enhance wildlife habitat for terrestrial and aquatic species

Site and Design Considerations:

- Vegetation in the buffer should consist of native species tolerant of soil type and environmental conditions of the site.
- Diverse plants in a buffer, including trees and shrubs, provide more effective pollution reduction and soil stabilization than a simple grass filter strip.
- Site conditions that may require larger buffer widths include:
    - Rare or sensitive habitat types, such as vernal pool wetlands
    - Steep slopes and/or highly erodible soils
    - Altered hydrology from development on adjacent uplands
- Buffers are beneficial in areas with dispersed surface flow (sheet flow) but may not be suitable for areas with concentrated flow from a pipe or channel, where runoff velocity is too high to allow filtering and absorption.

Maintenance:

- Control weedy or invasive species that may affect native species in the buffer zone.
- Mowing, if needed, should be timed to avoid impacts to habitat and wildlife; recommended timing for mowing is late winter or very early spring (February – March).
- Monitor health and growth of vegetation, checking for insect pests and diseases. Control measures should consider potential environmental, water quality, and wildlife impacts.
- Monitor vegetation in flood-prone areas after storms and extreme high tides. Restoration or replanting may be needed to replace plants damaged by flooding or saltwater intrusion. Areas of the buffer that experience repeated damage may require a more robust engineered design to better withstand storms and high tides.

Resources:

Delaware Department of Natural Resources and Environmental Control Riparian Buffers brochure
http://www.dnrec.state.de.us/DNREC2000/Library/RIPARIANBUFFERS1.PDF

University of Delaware – Sea Grant: *Delaware NEMO Guide Chapter 3 – Maintaining Riparian Areas and Wetlands*
http://nemo.udel.edu/manual.aspx

Delaware Riverkeeper – Fact sheet: Riparian Buffers
http://www.delawareriverkeeper.org/resources/Factsheets/Riparian_Buffers.pdf