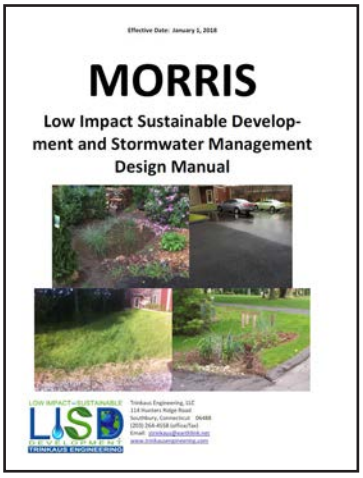
Managing Your Watershed for Clean Water

Clean water is not a guarantee. Anthropogenic activities or human use of land alters our water resources. From paving our driveways, to building homes, tilling the land for agriculture, creating wastewater and industrial pollution, and more - all of these activities have varying effects on our water resources.

One example is increased pollutant loading in stormwater runoff, which occurs when rainwater flows over the ground, picking up chemicals or nutrients. Some examples of pollutants are phosphorus, nitrogen, Fecal Coliform or *E. coli* and sediment. The elevated levels of nitrogen and phosphorus in our waterways make our lakes, rivers and streams vulnerable to artificial eutrophication - or nutrient enrichment - and increase their risk of toxic cyanobacteria blooms. Excess sediment from erosion can cause upstream riverbank failures, and downstream can cause deposition in recreational areas and sensitive habitats. What can we do about all of this?

Watershed Management, or balancing various land use types and activities in your watershed, is important for ensuring healthy water resources. Many lake and watershed organizations throughout northwestern Connecticut are actively working to protect our aquatic resources through watershed protection. NWCD provides technical services to these volunteer-based organizations to aid in this process.

One framework to decrease human impact in a watershed is called Low Impact Development or LID. This process applies sustainable techniques to new development, or to retrofit already developed land, avoiding negative impacts. There are many types of LID for a range of land use types and projects. If you are interested in learning more, go to: **https://nemo.uconn.edu/tools/index.htm**



Lake Waramaug, CT

Specifically, residential land use and agriculture can be implemented in a manner that minimizes their effect on the natural environment. The problem with the pollutants mentioned above is that once they are in a lake, river or stream, they are extremely costly to remove. One estimate is that every dollar spent on prevention of excess nutrients entering a lake can save $1,000 of in-lake management. Prevention is key - but what can a concerned citizen do if they are worried that their property is causing excess runoff?

First, any questions or concerns you have - feel free to call us at the Conservation District! We would be more than happy to discuss some options for you and help you find your next steps. When it comes to preventing excess runoff, one solution is through the creation of a structure called a rain garden. Continue onto the next page to learn more.

Riparian Buffers in Agriculture

Riparian buffers are strips of trees and shrubs that help clean water runoff and limit erosion. When agricultural fields are adjacent to moving water, there is opportunity for excess nutrients and sediment to enter the water. During times of excess rain, fields may become subject to erosion and flooding. Riparian buffer plantings will help mitigate these negative impacts by filtering the runoff before it reaches the water source. The roots from the plants will hold the soil in place, decreasing erosion. Some native plants that are recommended for riparian buffer plantings include Dogwoods (*Cornus*), Witch Hazel (*Hamamelis*) and Winterberry (*Ilex*).

For more information, contact Sarah Ammirato at info@nwcd.org

Rain Gardens - Cleaning Runoff One Yard at a Time

GREAT RAIN GARDEN PLANTS

Trees

Acer rubrum - Red Maple
Betula nigra - River Birch
Juniperus virginiana - Eastern Red Cedar

Shrubs

Aronia arbutifolia - Red Chokeberry
Aronia melanocarpa - Black Chokeberry
Clethra alnifolia - Summersweet
Hamamelis virginiana - Witch-hazel
Ilex glabra - Inkberry
Ilex verticillata - Winterberry
Lindera benzoin - Spice Bush
Salix discolor - Pussy Willow
Sambucus canadensis - Elderberry
Viburnum nudum - Winterthur

Perennials and Ferns

Aruncus dioicus - Goatsbeard
Asclepias incarnata - Swamp Milkweed
Caltha palustris - Marsh Marigold
Chelone glabra - Turtlehead
Echinacea purpurea - Coneflower
Eupatorium dubium - Joe Pye Weed
Iris versicolor - Blue Flag Iris
Lobelia cardinalis - Cardinal Flower

Rain gardens are simple and attractive solutions for runoff from footing and roof drains, driveway drains, and from lawns laden with pesticides and fertilizer. Rain gardens work best in well-drained soils and are the most common type of Low Impact Development (LID) system used to clean polluted stormwater runoff created in residential areas.

Careful planning is essential to success. Suitable soil types (well-drained soils) are an important component for proper infiltration. Not every site has suitable soils and even if an area does, not every location is ideal for installing rain gardens. Rain gardens are NOT water gardens or wetlands. Placing rain gardens in poorly drained soils may lead to slow infiltration and unwanted long term ponding. These structures should not be installed over a septic system, reserve area site or close to a drinking water well. A homeowner can determine their property's soil drainage class by visiting the **https://nemo.uconn.edu/raingardens/sizing.htm** website under "Checking Soils". For more information regarding sizing, siting, design, installation, maintenance and cost, visit **https://nemo.uconn.edu/raingardens/installation.htm**. A great resource for all!

Rain gardens also provide a GREAT opportunity to add habitat for pollinators and other wildlife year-round. Simple and attractive, rain gardens are environmental champions. Consider installing one in your yard!

To learn more about water quality, LID and Rain Gardens, head to **nwcd.org/plant-sale-education/** under the Water Quality Tab. Or have a question? Email NWCD at info@nwcd.org