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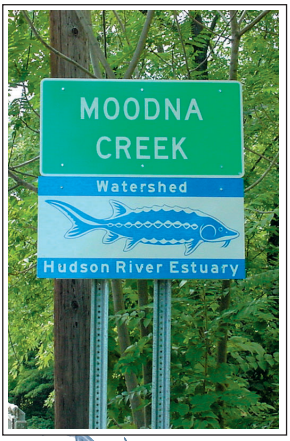

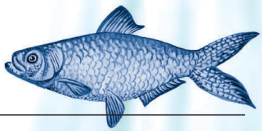

Streamside Stewardship Guide

for Hudson Valley Residents

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for Hudson Valley Residents

by Nordica Holochuck

New York Sea Grant
10 Westbrook Lane
Kingston, NY 12401
sgulster@cornell.edu

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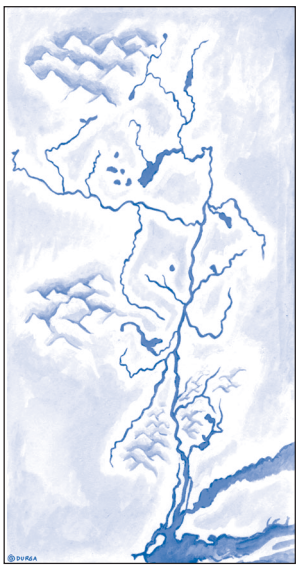
Anatomy of a Riparian Buffer line drawing and description is adapted from the Living with the River series, Connecticut River Joint Commissions, 1998.

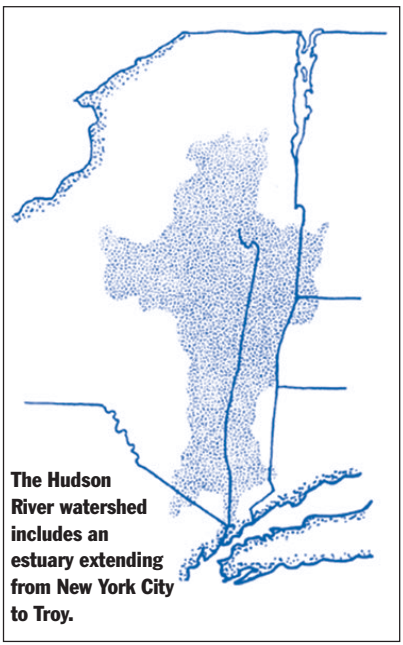


Introduction

Your Backyard Stream is Part of the Hudson River Watershed!

A watershed is an area of land that drains into a single water body. The stream flowing through your property is part of a drainage basin called the Hudson River watershed.

The Hudson River's 315-mile course stretches from tiny Lake Tear of the Clouds high in the Adirondack Mountain Range all the way to the Battery at the tip of Manhattan. The lower half of the Hudson is an estuary, where salty seawater is pushed up river by the ocean tides, mixing with freshwater runoff from the land. The estuary is a vital, integral part of the Atlantic Coast ecosystem, a rich ecological environment providing food and shelter to diverse plants and animals.



The Hudson River watershed includes an estuary extending from New York City to Troy.

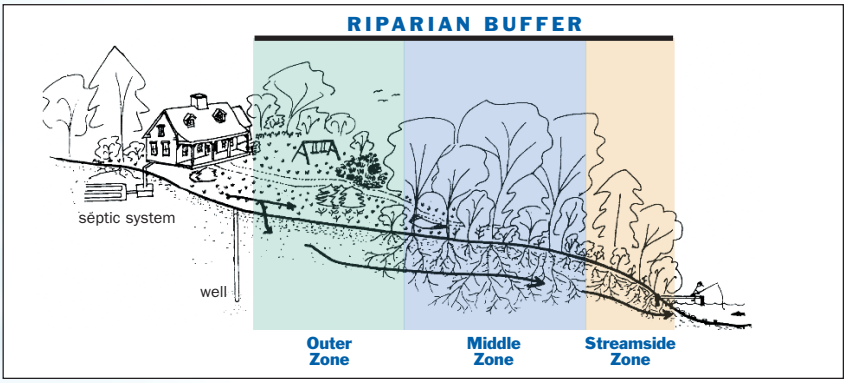
There are dozens of tributary streams contributing fresh water to the Hudson River. Whatever happens upstream from your land impacts the condition of the stream on your property. In turn, the products and practices you use at home may impact your section of the stream and water quality and quantity beyond your borders.

This booklet reviews simple stream stewardship tips that can help you reduce threats to water quality and fish and wildlife habitat, while protecting and enhancing your property.

Streams are Alive!

Streams are constantly adjusting their shape to changing conditions. Look closely as you walk along any stream. Despite the size of the stream, you will notice the following stream channel characteristics:

- **Stream flow**
- **Stream channel slope**
- **Stream width and depth**
- **Streamside vegetation**
- **Stream meanders**
- **Stream bed and bank material (rocks or gravel, boulders, soil)**
- **Sediment entering and moving through the stream and watershed.**



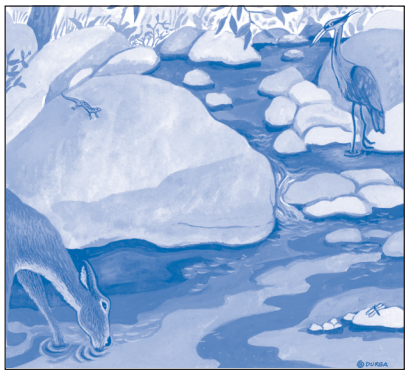
All of the characteristics are closely linked, each having an effect on the stream's shape and overall ecological health. Changes to one characteristic affect the others. For example, removing streamside vegetation can lead to erosion, the loss of valuable soil into the stream, which can degrade aquatic habitat. Altering the land surrounding your stream, even slightly, may change how the water in the stream flows and what the water contains, affecting the health or even presence of aquatic life.

Riparian Buffers

The land directly adjacent to a stream or creek is called the riparian zone. Depending on stream size, type and location, the appearance of this area varies greatly. The vegetation growing along stream banks is called riparian buffer.

Anatomy of a Riparian Buffer

The most effective backyard buffer has three zones:



Streamside zone: from the water to the top of the bank. Protects the bank and provides habitat. The best buffer has mature forest but large shrubs might be a better choice where trees have collapsed a bank.

Middle zone: from the top of the bank inland. Protects stream water quality and provides habitat. Varies in width depending on the size of the stream and slope and use of the nearby land. The best buffer has trees, shrubs and perennial ground plants. It can allow clearing for some recreational use.

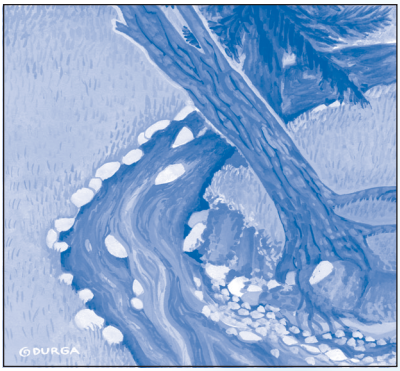
Outer Zone: the yard, garden, and woods between your home and the rest of the buffer. This area traps sediment. Play areas, gardens, compost piles and other common residential activities are suitable here.

A healthy streamside buffer provides:

Wildlife Habitat

Streamside vegetation provides food, water and habitat for wildlife. Organic litter and debris (fallen leaves) provide for the in-stream habitat food chain.

Absent buffers cause erosion and damage stream health.



Flood Control

Plants on the sides of streams slow down water movement, reducing height and duration of flooding.

Erosion Control

Plant roots hold together stream bank soil, reducing erosion.

Sediment trapping

Plant and plant litter may reduce the load of sediment by slowing the flow of water entering the stream and allowing the particles to settle.

Groundwater Filtering

As groundwater moves from the subsurface areas into the stream, it passes through the roots of plants bordering the stream. Plant roots may filter out nutrients, metals and other contaminants; tiny bacteria and other microbes may transform nitrate (found in fertilizers and manure) into nitrogen gas, releasing it to the atmosphere.

Healthy vegetated streamsides prevent runoff.

Promote a healthy buffer and stream by following these streamside management practices:

Establish a vegetated buffer using native plant species. Using a variety of species supports diverse wildlife and provides stability if some of the plants don't survive. Choose species to match the site, those that will tolerate anticipated flooding and soil moisture conditions. Contact your local soil and water conservation district for technical assistance when planning to enhance or restore your streamside buffer.

Don't mow your lawn to the stream's edge. Removing vegetation will eliminate the root systems that hold the soil in place, creating erosion problems, disturbing or eliminating wildlife habitat, and accelerating transport of possibly harmful contaminants to the stream.

Use of concrete seals the land, increasing runoff.

Minimize impervious surfaces. Concrete and asphalt seal the land, preventing water infiltration and thus creating runoff. Wood decking, modular paving, or gravel, when installed correctly, can all allow for

easy infiltration of rain water and prevent soil erosion.

Healthy vegetated streamsides filter out nutrients and many contaminants from runoff and groundwater. Some agricultural and household chemicals are highly toxic and non-biodegradable. You can work to minimize the amount of contaminants that flow into the buffer:

Reduce the use of fertilizers, herbicides and pesticides on your lawn. Compost lawn clippings and vegetable wastes. Maintain your septic system and have it pumped periodically.

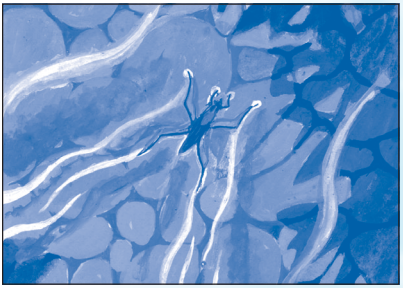
Remove trash and debris from the streamside. They physically impede plant growth and may leach harmful chemicals.

Contact your local Cornell Cooperative Extension office for technical assistance on water-wise gardening and composting techniques.

In the Water

Taking care of the land adjacent to your stream will help promote a vital habitat for the aquatic organisms living in the stream.

One way to measure the health of your stream is to work with a local watershed education group. This is a great opportunity to meet your watershed neighbors, and local watershed organizations can help provide resources to assess the health of your stream. For example, watershed educators might work with you to identify aquatic insects. These tiny creatures vary in their ability to tolerate water pollution so they are used as key indicators of stream health.



Watershed groups conduct a stream sampling to identify insects

What Lives Downstream?

You may not be able to see the mainstem of the Hudson River from your house, but your stream connects indirectly or directly to the river. Hudson River fish and shellfish species access the tributaries from the Hudson seasonally; many congregate only at the mouths of tributaries while others reside in the tributaries all year. Scientists and researchers are working to determine the critical role tributaries play in the overall health of the Hudson River Estuary.

You can help protect your part of the watershed by using the practices described in this booklet.

For more detailed information on backyard streams contact NY Sea Grant for a set of Hudson Estuary Tributary Stewardship Fact Sheets.

For stream education and monitoring:
Hudson Basin River Watch: **www.hudsonbasin.org**

For Hudson River Estuary information:
NYSDEC Hudson River Estuary program
www.dec.state.ny.us/website/hudson/hrep.html

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New York Sea Grant
10 Westbrook Lane
Kingston, NY 12401
(845) 340-3983
sgulster@cornell.edu

www.nyseagrant.org