

# Nature's buffers protect water, provide home to wildlife

You've likely seen streamside environments that improve water quality, though perhaps not realized it. These areas consist of dense, near-stream shrubs like willows bordered by shady stands of well-spaced trees like cottonwood and red oak. Together, they provide homes for a variety of birds, insects, amphibians and small mammals. These environments are commonly referred to as stream buffers.

A stream buffer is the land along the edge of a stream where natural vegetation can improve water quality by capturing and filtering out sediments and other pollutants. A stream buffer also



**SCOTT DOYLE**

Guest Viewpoint

helps to moderate stream temperatures so as to maintain a range necessary to support aquatic life.

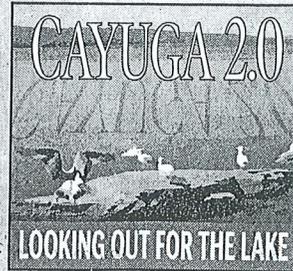
Buffers can also help stabilize streams by reducing the erosion of stream banks and streambeds and support biodiversity by providing terrestrial wildlife habitat and travel corridors.

A healthy, functional stream buffer includes a variety of native tree, shrub and grass species with minimal encroachment and human disturbance. Unhealthy stream buffers are characterized by plants with weak root systems, grass mowed to the creek edge, invasive species, grazing animals or impervious surfaces such as buildings or pavement.

Based on extensive research it has been shown that significant improvement in water quality can be achieved by maintaining a 100-foot buffer on either side of a stream and that wildlife habitat value is greatly enhanced by buffers of 300 feet or more.

Landowners and the community as a whole realize financial benefits from stream buffers. Stream buffers minimize property damage from floods and reduce maintenance costs. Community benefits include reducing the cost of treating drinking water and limiting the need to repair damage to eroded streams.

Protecting existing stream



## ABOUT THIS SERIES

Cayuga 2.0 is a series of monthly guest viewpoints about the health of the Cayuga Lake watershed and the challenges and opportunities related to it. The viewpoints are provided by the Tompkins County Water Resources Council.

► Next month's installment: Submerged plants in Cayuga Lake.

## BUFFER INFORMATION

To learn more about Tompkins County's stream buffer protection and management tools, contact Scott Doyle, Tompkins County Planning Department, 274-5560, [sdoyle@tompkins-co.org](mailto:sdoyle@tompkins-co.org) or visit the Water Resources section of the County Planning web site at [www.tompkins-co.org/planning](http://www.tompkins-co.org/planning).

buffers before they are removed is the least costly and most effective way to protect the water quality in local streams. Three tools, outlined below, have been shown to help communities and property owners to maintain existing buffers and restore ones that have been damaged or removed.

## Property owner education

Many property owners are aware of the importance of stream buffers, but don't know how best to maintain or restore them. Tompkins County has recently developed a Stream Buffer Planting Guide to help landowners establish healthy stream buffers by providing details on species appropriate for buffer areas and describing how they should be planted. An electronic version of the guide may be found online at [www.tompkins-co.org/planning](http://www.tompkins-co.org/planning). Hard copies will be available this May at the County Planning Department at 121 E.

Court St. in downtown Ithaca.

## Financial support

Federal, state and local governments can provide financial support for stream buffer restoration and protection. The Tompkins County Flood Hazard Mitigation Program is one such program. It provides funding for restoration, revegetation and protection of stream buffers. In selecting projects, the county considers the impact on adjoining properties as well as on the entire watershed. Over the last three years, seven projects in five municipalities have restored or protected over 4,000 linear feet of stream buffer. This financial support may be conditioned upon a landowner agreement to protect and maintain the restored buffer.

## Stream buffer ordinances

Local governments can also adopt a stream buffer ordinance or zoning provision to restrict development adjacent to streams. The Tompkins County Planning Department has prepared a model ordinance that recommends a 100-foot stream buffer on either side of perennial streams. The buffer is made up of two parts: a natural vegetative buffer of 50 feet from the stream edge, and a more permissive buffer that extends 50 feet upland of the vegetative buffer.

A recent example of a stream buffer restoration project funded through the Tompkins County Flood Hazard Mitigation Program is a revegetation project on Fall Creek at Cornell's H.C. Thompson Vegetable Research Farm in the Town of Dryden. Cornell agreed to allow use of the land for buffer restoration and financial support for the project was provided by Tompkins County, which purchased the trees and shrubs. After site preparations by the research farm staff, Dryden Cub Scout Pack 24 and their families planted 100 native trees and shrubs along the banks of Fall Creek. This planting established a stream buffer over 100 feet wide along approximately 400 linear feet of Fall Creek adjacent to active agricultural fields.

*Scott Doyle is senior planner at the Tompkins County Planning Department.*

# GUARDIANS OF THE STREAM



Provided  
Dryden Tiger Cub Steven Morrow and his father Bill Morrow plant a tree as part of a stream buffer near Fall Creek at the Cornell H.C. Thompson Vegetable Research Farm.

Saturday, April 17, 2010