

The Abridged Greenway Landowners' Guide to the Quinnipiac River & its Tributaries: A primer for the care of the Quinnipiac Greenway rivers and streams

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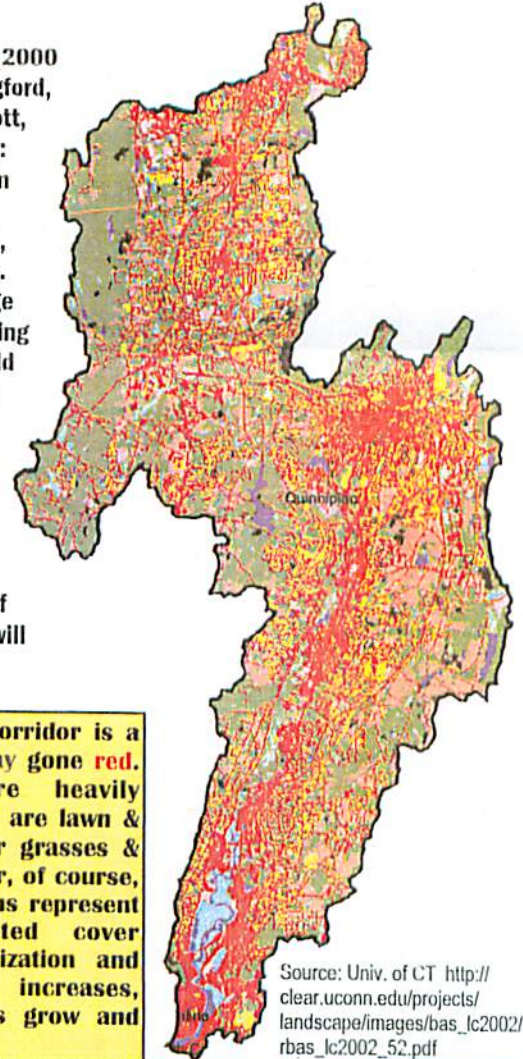


THE QUINNIPIAC WATERSHED & YOU

The Quinnipiac River Watershed covers 166 square miles, supports 226,000 people (2000 Census), and includes portions of Plainville, New Britain, Southington, Cheshire, Meriden, Wallingford, Hamden, North Haven and New Haven, as well as smaller sections of Farmington, Bristol, Wolcott, Prospect, North Branford and East Haven. The watershed contains eight major sub-watersheds: Eightmile, Tenmile, and Muddy rivers, and Misery, Broad, Sodom, Harbor, and Wharton brooks. In 2003, The State of Connecticut designated the Quinnipiac a State Greenway.

The Quinnipiac River provides the residents of its watershed with countless ecological, economic, and recreational resources, and supports diverse fish, bird and wildlife populations. However, more than a century of riverside manufacturing and poorly regulated municipal sewage fouled the waterways. By the 1990's, government regulation combined with declining manufacturing meant improved water quality. However, the watershed faced new development pressures as field and forest increasingly gave way to pavement and buildings. Nonpoint source pollution from residential and commercial properties and stormwater runoff has become an insidious offender.

QRWA has produced this guide to educate riverside residents on land management strategies that will help the Quinnipiac continue to improve. You and your neighbors, as waterfront landowners, manage some of the most critical land within the watershed for protection of water quality and wildlife habitat. QRWA has compiled this pamphlet for you because your property serves as the literal frontline between human impact and river systems, making you a *de facto* steward of this invaluable resource. Your land use decisions, and those of your neighbors, directly impact the rivers' well-being. Ecologically sound streamside maintenance will enable the river and its environs to benefit you in return.



Source: Univ. of CT http://clear.uconn.edu/projects/landscape/images/bas_lc2002/rbas_lc2002_52.pdf

NONPOINT SOURCE pollution is that which cannot be traced directly back to a single location. It enters watercourses via surface runoff and contaminated groundwater.

A **BUFFER** zone is a strip of vegetated land alongside and upslope of a watercourse or wetland that protects water quality, wildlife and aquatic habitat, and minimize flooding while maximizing groundwater recharge.

A **WATERSHED** is all of the land from which water drains into a particular body of water. Because watersheds, as most natural resources, are hydrologic units that ignore political boundaries, they are best approached via a regional perspective. Individual actions have the greatest impact if they are copied by other stakeholders throughout the watershed.

The Quinnipiac corridor is a CT State Greenway gone red. Red areas are heavily developed, yellow are lawn & turf, tan is other grasses & agriculture. Water, of course, is blue and greens represent various vegetated cover types. As urbanization and suburbanization increases, reds and yellows grow and greens shrink.

Pollution from runoff includes:

- * nutrients
- * soil & sediment
- * pathogens (e.g. bacteria)
- * pesticides, herbicides, fungicides
- * metals
- * automotive fluids
- * road de-icers
- * litter & bulk debris
- * heat
- * household solvents

THREATS TO THE QUINNIPIAC AND ITS TRIBUTARIES

Under natural and low-impact development conditions, forests and wetlands absorb a large amount of precipitation. Groundwater is thus recharged, pollutants are partially filtered, streambanks are protected from erosion, and aquatic communities remain intact. Urbanization has reduced the area of forests and wetlands with their water and pollutant-absorbing vegetation, replacing them with impermeable surfaces in the forms of buildings, roads, and parking lots. These impervious surfaces dramatically reduce infiltration and increase runoff, the primary transport mechanism for nonpoint source pollution. With the high percentage of

paved and built surfaces along the Quinnipiac and water diverted and rerouted for residential and commercial use, flash floods and contamination have become common, as evidenced by sections of severely

eroded streambanks and nonpoint source pollutants from surface runoff. When homes are surrounded by paved surfaces like driveways and cement patios, sprinkler and garden hoses also transport polluted runoff if they are not used with great care.

Sources of runoff pollution include:

- * pet waste
- * farms
- * lawns & yards
- * roadways & parking lots
- * roofs
- * poorly maintained septic systems
- * construction sites
- * deforestation
- * household hazardous waste

DO-IT-YOURSELF BEST MANAGEMENT PRACTICES (BMPs) for streamside landowners

BMPs for your property: PRACTICE SUSTAINABLE LANDSCAPING AND LAWN CARE

- Use organic lawn care, or hire a gardening company that does; do not use petroleum-based fertilizers;
- When mowing, leave your grass clippings on the lawn;
- Practice sustainable property maintenance and repair:
 - control runoff and improve drainage;
 - reduce impervious surfaces - use permeable paving material for driveways and patios;
 - stabilize disturbed slopes with hardy vegetation and mulch;
 - minimize lawn and maximize native trees and shrubs - this will also keep geese to a minimum, as they are attracted by the combination of water and grass;
 - replant on bare soil as soon as possible;

- If you live on the sewer grid, advocate for public work fixes such as separating sewer and storm overflow systems, public rain gardens and swales to replace gutters;
- If you live off the sewer grid, properly maintain your septic system:
 - have it pumped out every 2-3 years and serviced regularly;
 - conserve water;
 - use non-caustic household cleaners and properly dispose of hazardous waste;
 - compost rather than use a garbage disposal;
 - do not park or drive over your system;
 - plant only herbaceous plants over your system;
 - direct runoff away from leaching field.

STREAMSIDE BUFFER CONSERVATION AND RESTORATION Is one of the most important actions (BMPs) you can take. Riparian buffers protect the adjacent land and water quality by preserving floodplain and streambanks, permitting infiltration of rainfall and snowmelt and filtering runoff. They provide habitat for wildlife, reduce flooding, and protect aquatic habitat by moderating water temperature and reducing sedimentation.

BMPs at home : PRACTICE SUSTAINABLE HOME, CAR AND PET CARE:

- *Install water-saving devices.* Quinpiac rivers and streams contribute to our public water supply - water conservation keeps them flowing;
- *Increase infiltration* by directing rain gutters into vegetated swales, rain gardens or dry wells, and create gravel ditches around paved driveways and patios;
- *safely store and dispose of hazardous products* (read all labels) - dispose of unwanted household hazardous materials at your municipal hazardous waste collection facility on hazardous waste collection day;
- better yet, *choose environmentally friendly household cleaning products*, such as Ecover and Seventh Generation brands, available at most supermarkets, or make your own (see reference urls);
- *wash your car on your lawn*, not on your driveway or in the street -

grass filters some of the pollutants and permits some infiltration, thereby reducing runoff into the storm drain;

- *never dump anything into a storm drain* - many lead directly to our streams;
- *recycle everything that can be recycled*, including used motor oil and antifreeze;
- *pick up your pet waste* and put it in the trash.

RESOURCE LIST: IDEAS ON HOW TO IMPLEMENT THESE SOLUTIONS

For easy directions on how to implement these do-it-yourself solutions, turn on the computer and go to one of the addresses to the right. Our list is but a small sample of the resources that are available.

General homeowner stormwater management solutions:
www.soil.ncsu.edu/assist/homeassist/stormwater

Runoff Information:

www.dep.state.ct.us/olisp/coastalnonpoint
www.epa.gov/owow/nps
nemo.uconn.edu/tools/reducing_runoff/runoff.htm

Impervious pavement

nemo.uconn.edu/tools/Impervious_surfaces/Index.htm
www.millermicro.com/porpave.html

Bioretention/Rain gardens:

www.epa.gov/owow/nps/bioretention.pdf
www.ct.nrcs.usda.gov/elc-educational_materials.html
clear.uconn.edu/raingarden/raingarden.htm

Vegetative buffers:

www.crjc.org/riparianbuffers.htm
www.dep.state.ct.us/olisp/manual/manualsection3.pdf
www.ct.nrcs.usda.gov/plants.html www.ct-botanical-society.org
www.qrwa.org/Publications/StreamsideWoods.pdf

Government support for riparian habitat conservation:

www.ct.nrcs.usda.gov/programs/whip/whip.html
dep.state.ct.us/bumatr/Wildlife/geninfo/fedaid/lip/lip.htm

Lawn care/ landscaping

www.nofamass.org/programs/landcare/Index.php
www.qrwa.org/Publications/pesticide_table.pdf
www.branfordlandtrust.org/sustainablegarden.html
www.uri.edu/ce/healthylandscapes/raingarden.htm
www.infinetivity.com/~stack/rain/