

# **The Backyard Stream Guide**

A Guide for Streamside  
Landowners of the  
Mattabesset Watershed

*You Live in a Special Place*



Pat Rasch

Canoeists make their way down the Mattabeset River toward Cromwell Meadows.

Produced by Middlesex County Soil and Water Conservation District, Inc., June 2002

Graphic Design: Pat Rasch

Cover Photo: Jane Brawerman

Supported in part by  
The Rockfall Foundation,  
Middletown, Connecticut



Printed through  
the generosity of  
Northeast Utilities



**Northeast  
Utilities System**

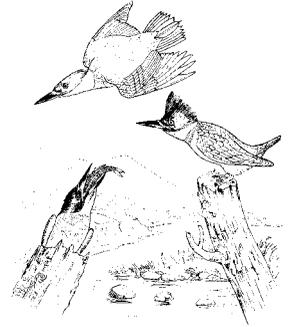
## What is a watershed?

A watershed is an area of land that drains to a single river. The Mattabeset River receives water from a 110 square mile area, including the watershed of the Coginchaug River, its major tributary.

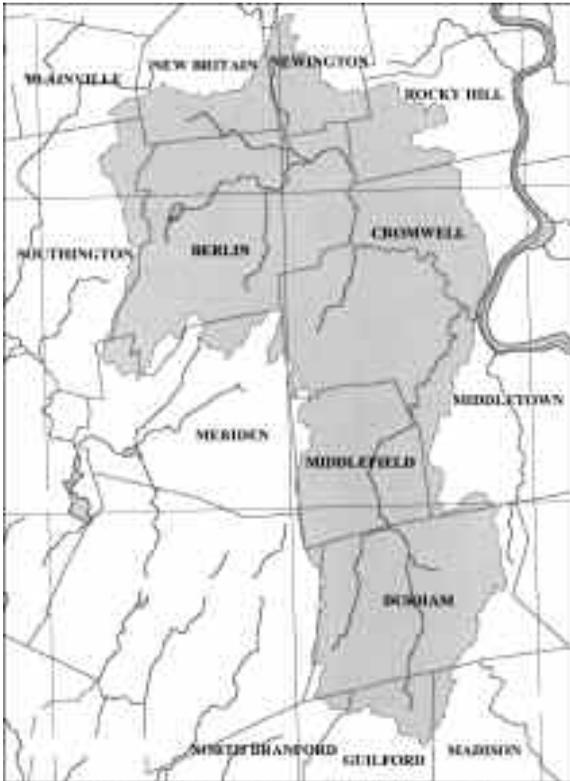
# The Mattabeset Watershed – *A Special Place*

You live in the Mattabeset River Watershed, a special place that contains a wealth of natural resources. These resources have the potential to provide valuable ecological, recreational and commercial benefits to the community and its wildlife when they are protected and cared for. Protecting this valuable resource is everyone's job.

The Mattabeset River (also known as the Sebeth) originates in the Hanging Hills of Meriden, near Merimere Reservoir. The river flows approximately 18 miles as it makes its way to the Connecticut River just north of the Arrigoni Bridge at the Middletown/Cromwell line. The Coginchaug River meets the Mattabeset about one mile before it enters the Connecticut River. Areas of Berlin, Cromwell, Guilford, Durham, Meriden,



Belted Kingfishers



The Mattabeset River Watershed

## Streams of the Mattabeset River Watershed

Stocking Brook, John Hall Brook, Crooked Brook, Hatchery Brook, Belcher Brook and Spruce Brook in Berlin

Willow Brook in New Britain

Webster Brook and Rockhole Brook in Newington

Little Brook and Sawmill Brook in Rocky Hill

Coles Brook, Willow Brook and Chestnut Brook in Cromwell

Spruce Brook, Bradley Brook, Fall Brook, Sawmill Brook, Miner Brook and East and West Swamp Brooks in Middletown

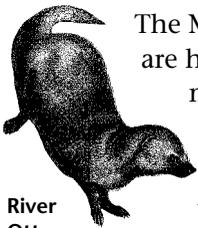
The Coginchaug River, which begins in North Guilford and flows northward through Durham, Middlefield and Middletown



Wood Duck

Middlefield, Middletown, New Britain, Newington, Plainville, Rocky Hill and Southington are within the Mattabeset watershed.

Special natural features of the Mattabeset watershed include a large freshwater tidal wetland near the Mattabeset's confluence with the Coginchaug River, Cromwell Meadows. This area is an internationally significant wetland, and has been recognized by The Nature Conservancy as a key conservation area in the lower Connecticut River, one of the 40 "last great places in the Western Hemisphere." Due to its rare species, fisheries, wetlands, water birds and unusual habitat, the area is designated a high priority Special Focus Area within the Silvio Conte National Fish and Wildlife Refuge. The large wetland provides important habitat for migrating wood ducks, black ducks and teal, and nesting wood ducks. It hosts many species of fish-eating birds, including great blue and green-backed heron, osprey, belted kingfisher and double-crested cormorant. American shad, blueback herring, alewives and other anadromous fish species (fish that migrate from the ocean to freshwater tidal streams) spawn in the rivers. Several rare plant species occur at this site as well.



River Otter

The Mattabeset River and its tributaries are home to many freshwater and migratory fish species. Beavers, muskrat and otter also swim its waters.

Upland traprock ridges, which form the southern and western borders of the watershed, provide a unique collection of habitats that support several

## Some Fish Species of the Mattabeset

### FRESHWATER

- Bluegill
- Brook lamprey (*a state threatened species*)
- Brook trout
- Brown bullhead
- Brown trout
- Chain pickerel
- Common shiner
- Fallfish
- Largemouth bass
- Pumpkinseed
- Redfin pickerel
- White sucker



Trout

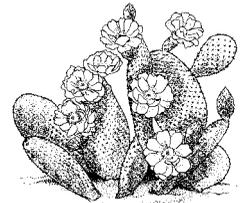
### MIGRATORY

- Alewife
- American eel
- American shad
- Blueback herring
- Sea lamprey
- White perch

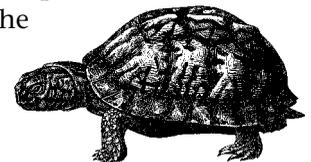


Sea Lamprey

uncommon plants and animals. Heat-loving species like the yellow corydalis flower, the prickly pear cactus, and the falcate orange-tip butterfly are found in the warm, dry microclimates of the exposed ridgetops and talus slopes. New England's only lizard, the five-lined skink, can be found on the dry slopes. The moister eastern slopes of the ridges provide homes for rare reptiles and amphibians like the box turtle and marbled, spotted and red-backed salamanders.



Prickly Pear Cactus



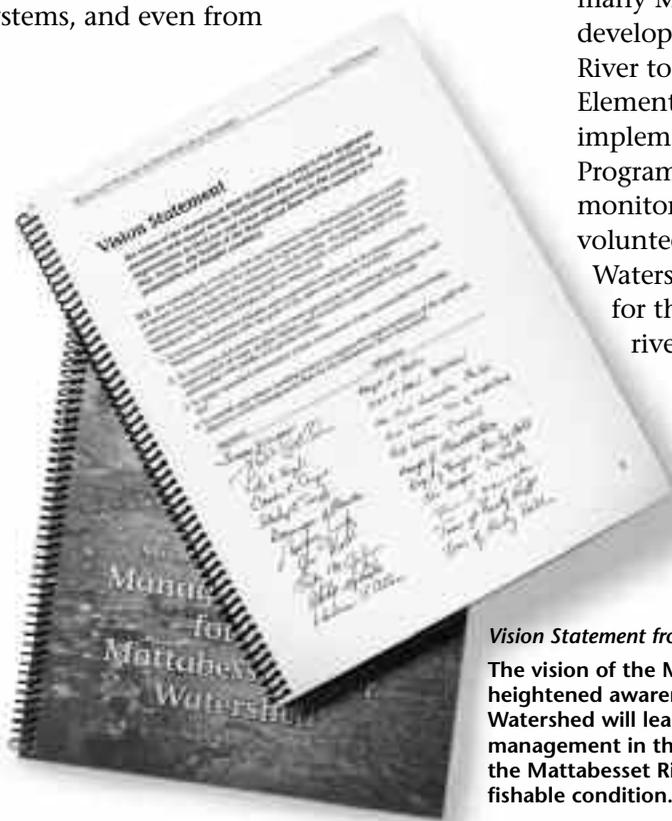
Eastern Box Turtle

# Threats to the Mattabesset River

The special natural resources of the Mattabesset River are threatened by poor water quality and land development within the watershed. Although water quality is much improved from the days when sewage and industrial wastes were discharged directly into the river, extensive urban and suburban development have resulted in nonpoint source pollution, or polluted runoff, now the major source of contamination to the rivers and streams in the watershed. This type of pollution is very difficult to control because it comes from everywhere—in runoff from roads, parking lots, lawns, farms and construction sites, from failing septic systems, and even from

precipitation in the form of acid rain. The major pollutants in polluted runoff are pathogens (in bacteria), nutrients (e.g. from fertilizers, yard and animal waste), sediment, toxic contaminants (e.g. heavy metals, pesticides, herbicides), and debris and litter. Due to its poor water quality, the Mattabesset River has been designated a “water quality hotspot” by the Connecticut River Forum, and its watershed “in need of restoration” by the state Department of Environmental Protection.

Fortunately, there are many people working to improve conditions in the watershed. Most recently, a group of stakeholders from the many Mattabesset watershed communities has developed a plan to restore the Mattabesset River to fishable and swimmable conditions. Elements of the plan are currently being implemented. The Connecticut River Watch Program conducts ongoing water quality monitoring activities with the help of citizen volunteers, and the Mattabesset River Watershed Association works as an advocate for the river, spreading the word about the river, its values, and the need to protect it.



## *Vision Statement from the Management Plan:*

**The vision of the Mattabesset River Stakeholder Group is that heightened awareness and respect for the Mattabesset River Watershed will lead to improvements in land use and water management in the watershed, and that, in turn, the health of the Mattabesset River will be restored to a swimmable and fishable condition.**

*As a streamside landowner, you play a critical role in protecting the Mattabeset. There are many simple things that you can do to prevent polluted runoff from reaching the river and improve the river's health.*

## Good Lawn Management and Landscaping

You—and the Mattabeset watershed streams—can benefit from a nice lawn and landscaping around your home. Grass, trees, shrubs, ground covers and other plants protect our streams from harmful runoff and soil erosion while enhancing the value and beauty of your property.

A well-planned landscape and properly maintained lawn can help prevent erosion, moderate summer heat, and act as a filter for rainwater from roofs, downspouts and driveways. The Mattabeset benefits from the reduced runoff and filtering capacity provided by your lawn and other landscape plants. A diverse mix of vegetation not only provides greater water quality benefits, but also enhances habitat for wildlife.



Pat Watson

With no natural vegetation along the stream to stabilize the soil and act as a buffer, banks can erode and runoff can carry pollutants into the stream.

---

### ***How Can You Maintain Your Yard and Protect Your Backyard Stream?***

**1. Your lawn—and the river—will benefit from proper fertilization and mowing more so than any other maintenance practice.**

- ◆ **Use only as much fertilizer as you need.** Too much fertilizer can damage your lawn as well as lead to water quality problems in the Mattabeset watershed. A soil test will help you determine your fertilizer needs. It is also important to calculate application rates based on the fertilizer analysis, and calibrate your spreader carefully to avoid over-application. If you use fertilizer, choose an organic one.

- ◆ **Avoid getting fertilizer on sidewalks and driveways** where it can be washed into storm drains that ultimately lead into your backyard stream. If fertilizer ends up on these hard surfaces, sweep it back onto the lawn where benefits can be reaped.
- ◆ **Recycle your grass clippings!** Leaving grass clippings on your lawn is an environmentally-friendly and economical way to fertilize your lawn. Grass clippings contain valuable nutrients that can generate up to 25% of your lawn's total fertilizer needs.

Maple-leaf Viburnum provides berries that are a valuable food source for wildlife.



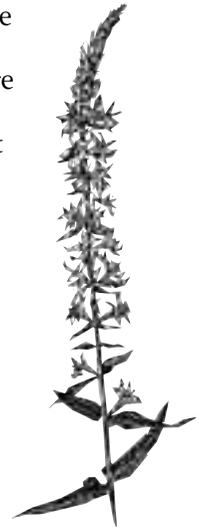
Mountain Laurel, Connecticut's state flower, produces beautiful pink flowers from May to June.

- 2. Minimize, and if possible, avoid use of pesticides and herbicides.** These toxic chemicals can be harmful to humans, pets and aquatic life. Many safe alternatives to these chemicals do exist and can be purchased at your local garden center. If you choose to use a lawn care company, make it your business to be informed of the products being used and the program they are following.
- 3. Maintain a naturally vegetated buffer along your stream.** In its natural state, the land adjacent to a river or stream has plants growing on it, including trees, shrubs and tall grasses, serving many important functions. These plants act as a natural filter, buffering the stream from any pollutants that might flow into it. The roots of the plants stabilize the streambanks and

control erosion. Streamside plants improve habitat for fish and other aquatic animals by providing shade to the stream and moderating water temperatures. Stream buffers can also help reduce flooding by absorbing rising water and slowing flow.

- 4. Choose landscape plants that attract birds and other wildlife.** By using native plants to landscape your yard, you can improve habitat for native wildlife. There are many sources of native Connecticut plants throughout the state. In fact, many local nurseries now sell a variety of native shrubs, trees and perennial flowers.

- 5. Avoid use of invasive non-native plant species in landscaping.** These plants pose a threat because they often replace native species that provide food sources and habitat for native wildlife, degrading natural communities and reducing diversity. One of these plants is purple loosestrife. Though attractive, it outcompetes native wetland plants and chokes wetlands. It is still sold for landscaping in many Connecticut garden centers.



Purple Loosestrife, a non-native escape from flower gardens, has become a major problem in our wetlands.



# Good Septic System Maintenance

Many homeowners in the Mattabeset watershed rely on septic systems for wastewater treatment. The most common septic system is the septic tank-soil absorption system. If septic systems are properly designed, installed and maintained, they will have little adverse affect on the Mattabeset. However, septic system failure can result in harmful bacteria contaminating your well or local stream, threatening public health and aquatic life.

---

## *What Can You Do to Prevent Septic System Failure?*

1. **Install water-saving devices.** Water conservation can extend the useful life of the soil absorption system.
2. **Do not put household hazardous wastes, or grease and oil down your drains.** These types of waste can interfere with the proper functioning of your septic system and can also leach into ground and surface waters.
3. **Have your septic tank pumped out at least every three years.** More frequent pumping is needed if a garbage disposal is used in the home. Biological and chemical septic tank additives are not necessary and do not eliminate the need for pumping.
4. **Have contractors check the inlet and outlet baffles during septic tank pumping.** If the baffles are missing or deteriorated, have them replaced,
5. **Do not plant trees in the soil absorption areas.** Tree roots can clog soil absorption fields.

# Household Hazardous Waste

Many of our homes contain products, like household cleaners, paints, automotive products, and pesticides, which can be harmful to people, pets, wildlife, and the river. These products should be used with care—only when necessary—and disposed of properly. Less toxic or non-toxic alternatives are sometimes available. They may work more slowly because they tend to be less caustic or acidic, but when combined with patience and regular care they can be effective.

---

## *What Can You Do to Prevent Harm From Household Hazardous Chemicals?*

1. **Choose less toxic or non-toxic alternatives to limit exposure to hazardous products. When you need to use hazardous chemicals, purchase them carefully.** Know what you are buying and the potential hazards. Buy the least hazardous product, and only the amount that you need.
2. **Use the product according to the directions.**
3. **Store products in their original containers** so the label can be reviewed whenever the product is used.
4. **If you can't use the product completely, see if someone else can use what's left.**
5. **Never dump excess products on the ground, down the drain, into storm drains, or dispose of in the trash.** Set aside unused household chemicals, automotive products, batteries, aerosol cans, oil-based paints, etc. and bring to your town's Household Hazardous Waste Collection Day, or your local hazardous waste collection center.

### Try These Less Toxic Alternatives

- Oven Cleaner – use a solution of baking soda and water
- Furniture Polish – combine 1 teaspoon of lemon oil with 1 pint of mineral oil
- Clogged drains – Clean slow drains before they clog completely using a combination of the following: a metal snake, flush with ½ cup baking soda, 2 ounces of vinegar and a cup of boiling water, and a plunger.

6. **Always discard used motor oil and antifreeze into a sturdy container with a cap, and when the container is full, take it to your local service station or oil recycling center.** Empty the container and take it home to use again!
7. **Minimize oil drips from vehicles parked outside.**

For assistance with disposal of household hazardous waste, contact your town public works department.

Storm drains are being marked with these stickers in areas of the Mattabeset River watershed as a reminder.



Barbara Dworetzky

### Don't Dump— Drains to River!

Your storm drains lead directly to your backyard stream or river, not to a sewer line. So, never dump or sweep anything into your storm drain!

# Erosion and Drainage

What you do on your land directly affects the quality of the streams. You and your neighbors can unintentionally change the volume, velocity and timing of the surface runoff that flows from your property. By your everyday actions, you might be contributing to flooding, and adding to the amount of sediment, toxic chemicals and nutrients that flow into the Mattabesset.

Many people in the Mattabesset watershed live in towns and suburban areas. These areas are characterized by many acres of hard surfaces – roads, rooftops and parking lots – in contrast to forests and fields, which allow rainwater to soak in. These impermeable surfaces force more and more rainwater to run off into the streams.

---

## *How Can You Improve Drainage and Prevent Erosion in Your Yard?*

1. **Use permeable surfaces that allow water to soak into the ground for landscaping**, like bricks, stones or wood decks to reduce excessive rainwater runoff and help prevent erosion.
2. **Install gravel trenches along driveways or patios to collect water and allow it to filter into the soil.**
3. **Resod bare patches in your lawn as soon as possible.**
4. **Plant ground covers on steep slopes.**
5. **Plant shrubs and trees to promote infiltration**, especially on larger lots.

There are many other fairly simple and inexpensive ways to control runoff and improve drainage in your yard. Contact your Soil and Water Conservation District for assistance in planning improvements (*see contact information on next page*).

## **Erosion— Why Should We Care?**

During rainstorms the Mattabesset River often becomes clouded with suspended sediment that colors the river reddish-brown. Excess sediment is more than just an eyesore – it creates turbid waters, measured as turbidity.

High turbidity is dangerous to fish. It reduces sunlight penetration in the water, impairing sight-feeding fish, and clogs fish gills, eventually leading to suffocation. When the sediment settles out of the water onto the riverbed, it can smother the eggs and larvae of aquatic organisms.

When not properly maintained, construction sites, earth excavating projects and agricultural fields can be the source of severe erosion and sedimentation problems.

*The next time you notice a stream in your neighborhood that is muddy or turbid, call your town's department of public works or enforcement officer to report the problem.*



# What Else Can I Do?

1. Discuss this guide with your neighbors and encourage them to work with you to protect your stream.
2. Report suspected problems as listed below.
3. Pick up trash along your stream.
4. Organize a neighborhood clean-up or storm drain marking project (contact the Mattabeset River Watershed Association for assistance).
5. Support the efforts of the Mattabeset River Watershed Association – become a member, and participate in MRWA sponsored activities like clean-ups and canoe trips.
6. Volunteer with the Connecticut River Watch Program – collect water samples and conduct other stream monitoring activities.
7. Urge your municipal government to identify and correct sources of pollution, and incorporate protection and improvement of the Mattabeset River and its tributaries into municipal plans, regulations and management practices.



A River Watch volunteer takes a water quality sample.

Ann Hadley

## Contacts and Resource Information

### VOLUNTEERING

*These programs/organizations are involved in various river improvement activities:*

#### **Connecticut River Watch Program**

deKoven House, 27 Washington St.  
Middletown, CT 06457  
(860) 346-3282

#### **Mattabeset River Watershed Association**

P.O. Box 7174  
Kensington, CT 06037  
(860) 828-0803

### TECHNICAL ASSISTANCE

*The following organizations provide services, including educational materials, resource publications and hands-on project assistance:*

#### **Middlesex County Soil and Water Conservation District**

deKoven House, 27 Washington St.  
Middletown, CT 06457  
(860) 346-3282

#### **Natural Resources Conservation Service**

100 Northfield Drive, Fourth Floor  
Windsor, CT 06095  
(860) 688-7725

#### **UConn Cooperative Extension Center**

1066 Old Saybrook Road, P.O. Box 70  
Haddam, CT 06438  
(860) 345-4511

*To report suspected problems, contact your town enforcement officer or the CT DEP Water Bureau's Permitting, Enforcement and Remediation Division (860) 424-3018.*



Ann Hadley



***Middlesex County  
Soil & Water Conservation District, Inc.***

deKoven House  
27 Washington Street  
Middletown, CT 06457

(860) 346-3282  
middlesex@ct.nacdnet.org

Non-Profit Org.  
U.S. Postage  
PAID  
Haddam, CT  
Permit No. 21