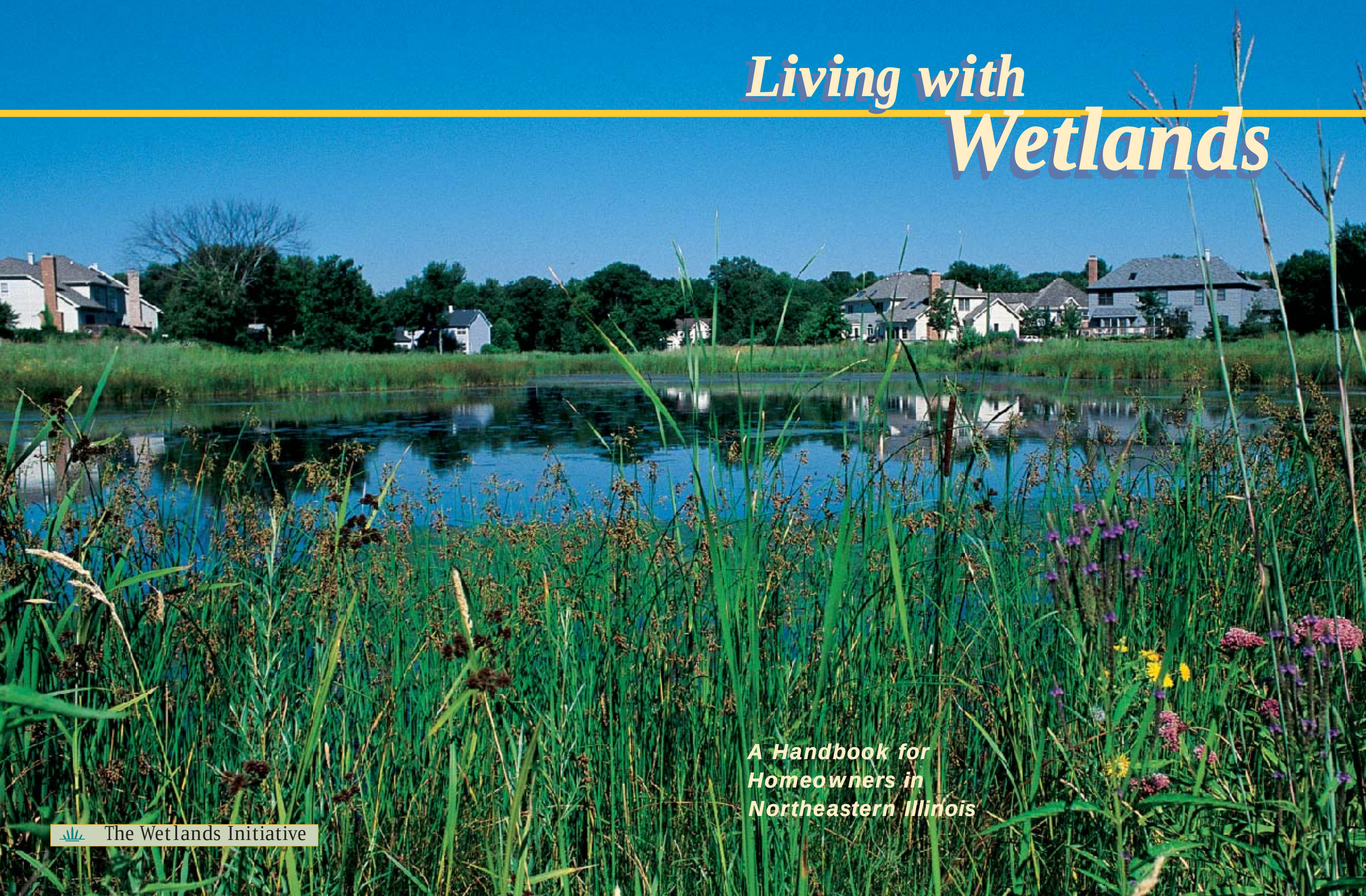
Living with Wetlands



A Handbook for Homeowners in Northeastern Illinois

The Wetlands Initiative

Dear Homeowner:

When you chose to live near a wetland, you included one of nature's most unique creations in your backyard. You have a front row seat to watch these amazing ecosystems at work—purifying water, holding floodwaters, providing homes to all kinds of wildlife. The value and enjoyment of your home are enhanced when a wetland is nearby.

This handbook is intended to help you understand the wetland in your backyard so you can enjoy it more. Also, with understanding, we hope, will come an increased willingness to be a responsible steward of this natural area.

Sincerely,

Albert E. Pyott
President, The Wetlands Initiative

Produced by

The Wetlands Initiative

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Living with Wetlands

A handbook for homeowners in Northeastern Illinois

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Wetlands and you

Tall Meadow Rue & Baltimore Checkerspot

Duck Potato

New England Aster

Wetlands are valuable to you and your community because they:

Improve water quality.

Wetlands can absorb and filter out pollutants and sediments in the water.

Store floodwaters.

Wetlands are a sponge, slowing down the force of flood and storm waters as they travel downstream.

Offer habitat for wildlife.

Many migratory birds and other wildlife found in Illinois depend on wetlands for survival.

Support biodiversity.

The wide variety of living things makes the health of our planet and our own lives possible by ensuring our food supply, regulating the atmosphere, and providing raw materials for industry and medicine. Wetlands are one of the most productive ecosystems on earth because they produce more living things per acre than other ecosystems.

Provide valuable open space.

Homeowners enjoy the scenic vistas and the increased privacy that come from living near wild areas. Property values usually are enhanced when homes are properly built near healthy wetlands.

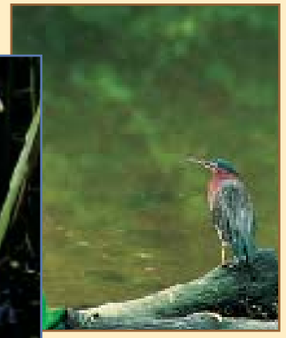
Create recreational opportunities.

Fishing, birdwatching, and hiking are just a few of the activities people enjoy in wetland areas.

Great Egret

Swamp Milkweed

Common Burreed



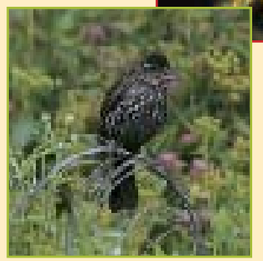
Green Heron

Sneeze Weed

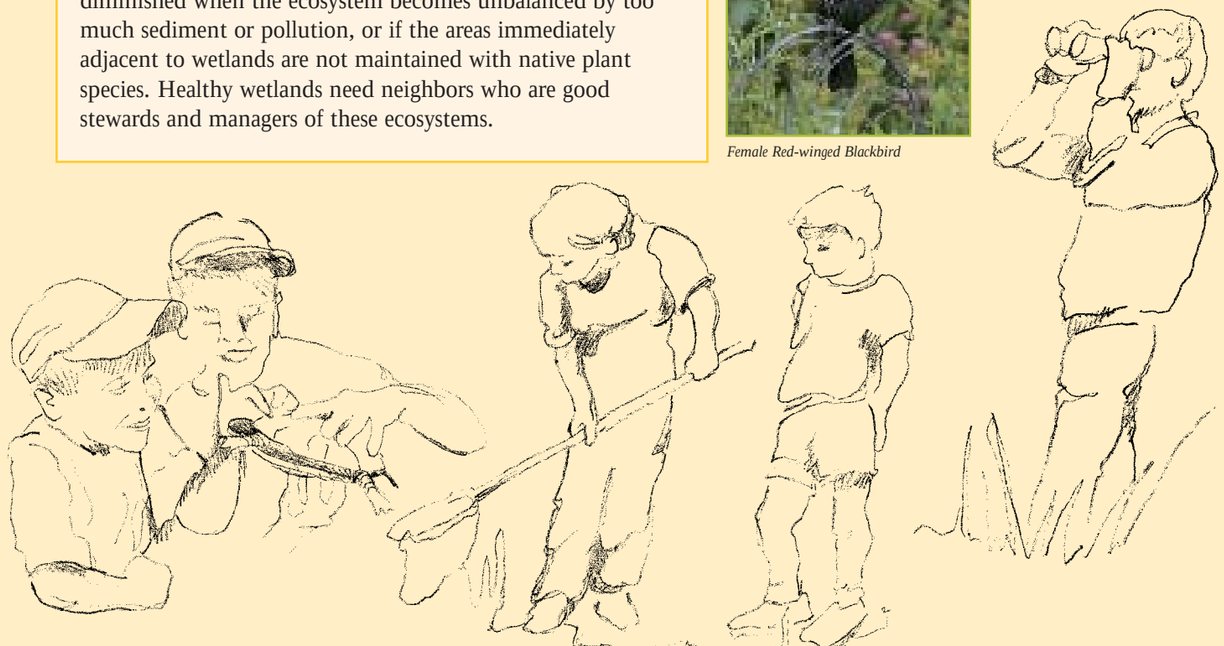
Sawtooth Sunflower

For nearly 200 years these values were unappreciated across the country. The nation's rich "swamp lands" were viewed only as areas waiting for "improvement." The city of Chicago was even built atop drained and filled wetlands! Most naturally-occurring wetlands in Illinois have been drained, filled, channelized (or otherwise converted) to farms, homes, and businesses. Today less than 10% of the wetlands present in Illinois in the early 1800s remain.

The functional values of our remaining wetlands can be diminished when the ecosystem becomes unbalanced by too much sediment or pollution, or if the areas immediately adjacent to wetlands are not maintained with native plant species. Healthy wetlands need neighbors who are good stewards and managers of these ecosystems.



Female Red-winged Blackbird

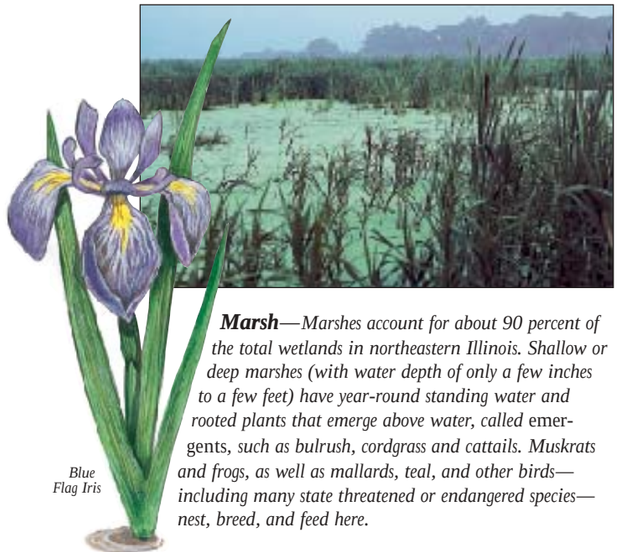


Defining a wetland

At its simplest definition, a wetland is an area between deep water and dry land. It may hold standing water year-round or for only a few weeks in the rainy season; but regardless of how long it is wet, to be called a wetland, it must be an area where the soil was formed by and plants have adapted to water.

Don't be surprised if you don't always recognize a wetland. Identifying some wetlands takes specialized training in soil science, botany, and hydrology. Wetland delineation is the process ecologists use to identify wetlands and determine their boundaries. While you may not be a wetland scientist, you can learn to recognize the common wetland types in northeastern Illinois.

Types of wetlands in Illinois



Blue Flag Iris

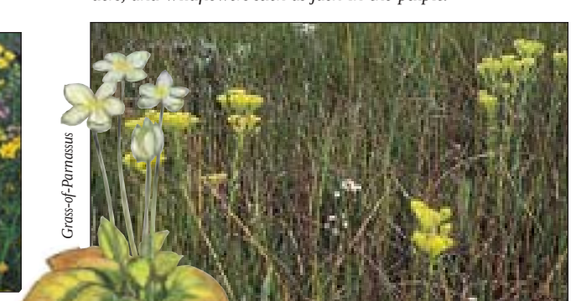
Marsh*—Marshes account for about 90 percent of the total wetlands in northeastern Illinois. Shallow or deep marshes (with water depth of only a few inches to a few feet) have year-round standing water and rooted plants that emerge above water, called* emergents, *such as bulrush, cordgrass and cattails. Muskrats and frogs, as well as mallards, teal, and other birds—including many state threatened or endangered species—nest, breed, and feed here.*

Skunk Cabbage

Forested wetland*—Many of these wetlands are next to a river, where their water level fluctuates with the river level. Other forested wetlands are in poorly drained upland areas. Both types typically only have standing water during part of the growing season. Silver or red maple, green and black ash, willow or alder trees abound in these wetlands. Forested wetlands provide habitat for wood ducks, woodpeckers, salamanders, and wildflowers such as jack-in-the-pulpit.*

Marsh Marigold

Wet meadow *—Wet meadows have saturated soil and little standing water. Sedge meadows have saturated soil that supports sedges—a plant that is most recognizable in early spring by its lumpy tufts of grass-like shoots. Wet prairies are wet meadows which are dominated by grasses and wildflowers. Wet meadows are home to a variety of wildlife species, including voles, short-eared owls, sandhill cranes, and marsh hawks.*



Grass-of-Parnassus

Bog and fen*—Bogs are known for their waterlogged peat and dense coverings of sphagnum mosses which grow in a bog's acidic environment. A fen develops in an alkaline area, where groundwater flows through calcium- or magnesium-rich glacial deposits and seeps out to the surface. Many rare and interesting plants are found only in bogs or fens.*

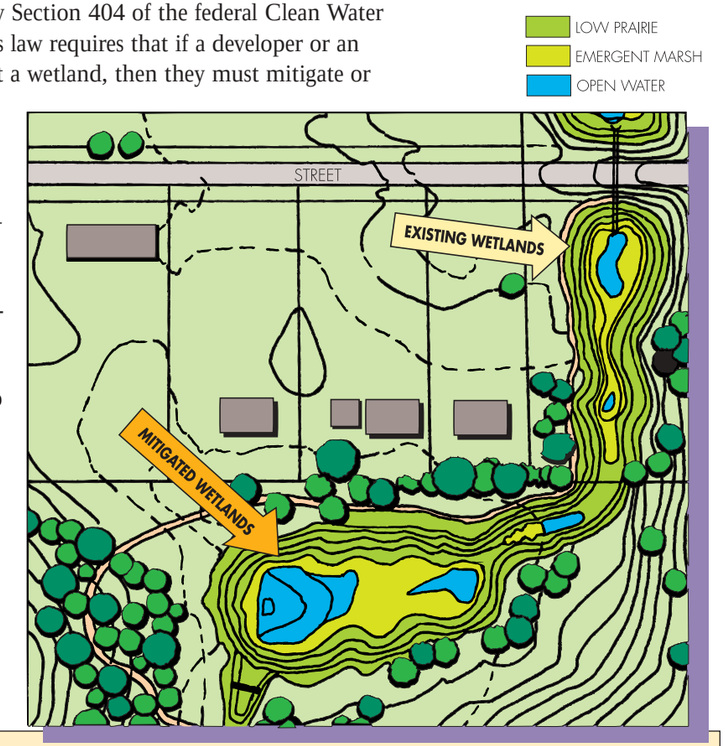
Wetland mitigation projects

A *wetland mitigation project* is an area where scientists and engineers have created or restored wetlands to lessen the impact of deliberate wetland loss elsewhere. These projects often—though not always—are on land that historically had been a wetland before the land had been drained for farming or other development.

These projects have been mandated by Section 404 of the federal Clean Water Act (see *Protecting wetlands,* page 10). This law requires that if a developer or an individual is permitted to adversely impact a wetland, then they must mitigate or compensate for that impact. For example, if a developer fills one acre of wetland for his or her project, he or she typically will be required to restore, enhance or create one or more acres of wetlands elsewhere—either on or off the property. This is an expensive undertaking, costing developers $40,000 to $100,000 per acre in construction and planting costs, not including the cost of the land itself. Therefore, it is in the best interest of all those involved to do mitigation correctly.

If the wetland near your home is part of a mitigation project, the U.S. Army Corps of Engineers will have required that the developer maintain and monitor the wetland for the first five years after construction. Ask your homebuilder what regulations apply to your wetland or call the Corps (see *Finding help,* page 20).

In this sample wetland mitigation site plan, open water and emergent marsh areas (bottom center) were enlarged and enhanced to compensate for the loss of wetlands in another area.



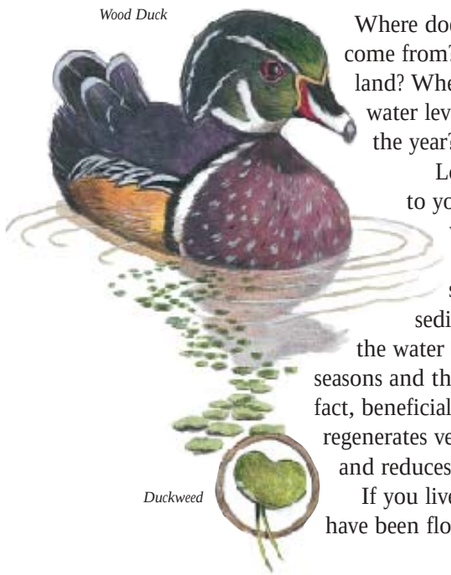
Detention basin or wetland?

A detention pond is a manmade basin designed to hold water that used to be absorbed into the soil, but now runs off impervious areas (e.g., your home, driveway, roads, and mowed lawns). Rainwater and snow melt accumulates in the basin and then is slowly released to a nearby creek or stream. These basins may be surrounded by concrete and mowed grass, rather than by native vegetation. In the 1980s, some of these basins were considered wetlands by the Corps, and, therefore, were regulated by the Corps. More recent detention ponds usually are not regulated by the Corps. If you're in doubt about whether the detention basin in your area is regulated as a wetland, ask the Corps.

Taking a closer look

You'll enjoy your neighboring wetland more if you understand its complexity and beauty. Start by going on a nature walk and observing it closely. Look for the following:

Water



Wood Duck

Duckweed

Where does the water in your wetland come from? Does it flow out of the wetland? Where does it go? How does the water level vary with the season and the year?

Look for the sources of water to your wetland and where the water exits. If there are culverts or outlet pipes, make sure they aren't blocked with sediment or debris. Notice how the water level will fluctuate with the seasons and the rainfall. This is natural—in fact, beneficial—because the fluctuation regenerates vegetation, recycles nutrients, and reduces algae growth.

If you live in an area where homes have been flooded, try to determine why. Are culverts clogged? Has stormwater runoff increased as roads, parking lots, and other impervious areas have expanded around the wetland?

Every wetland is part of a larger *watershed*, the land area that water flows across or under on its way to the lowest point, that is, a stream, river, lake, or wetland. By knowing where your wetland is situated in the watershed, you'll better understand how you and your neighbors affect water quality and flooding downstream. Take a look around your neighborhood to determine where the rain goes when it falls. If it drains into a storm sewer, see if you can find where it re-emerges. (Your county stormwater management commission or department of environment will be able to help you with this.) Does water from your wetland eventually flow to a river or a lake?

If your wetland has standing water, notice its quality. What color is the water? Is the water turbid or dirty? How much algae is present?

Water from a healthy wetland can appear various colors, depending on the weather and the biological activity in the water. Water will often appear to be stained brown like tea, although when scooped up in a glass, the water will look clear. The brown hue is perfectly natural and comes from tannic acids that are released as organic matter (e.g., leaves, stems, and organisms) decomposes in the wetland. Water that appears a muddy, chocolate brown, however, is not natural. This color is caused by too much silt and sediment washing into the wetland. Muddy-water wetlands can't support a complete food web because plants and small organisms will become smothered under accumulated sediment, and sight-feeding fish will starve in the murky water.

In early summer, the water may appear green—it may even look as if its been streaked with radiator coolant. This is caused by growth of *planktonic algae*, small organisms suspended in open water. In mid- and late-summer, the water may appear black. This occurs when the water level is low and the algae and plant production is highest, thus, there is very little oxygen in the water.

If you see algae, try to assess how much is present. Some algae growth is a natural phenomenon and essential to building the food web. Too much algae will cause other aquatic plant life to suffocate, leaving only the mosquitoes to flourish. Think of algae as a warning flag: If the water surface of a wetland is covered with it, the natural balance of nutrients in the water has been upset, most likely due to excess fertilizer washing into the wetland. Septic field leachate, stormwater runoff and animal excrement also can increase nutrients in a wetland (see *Being a good neighbor*, pages 12-13).

What's that green stuff?

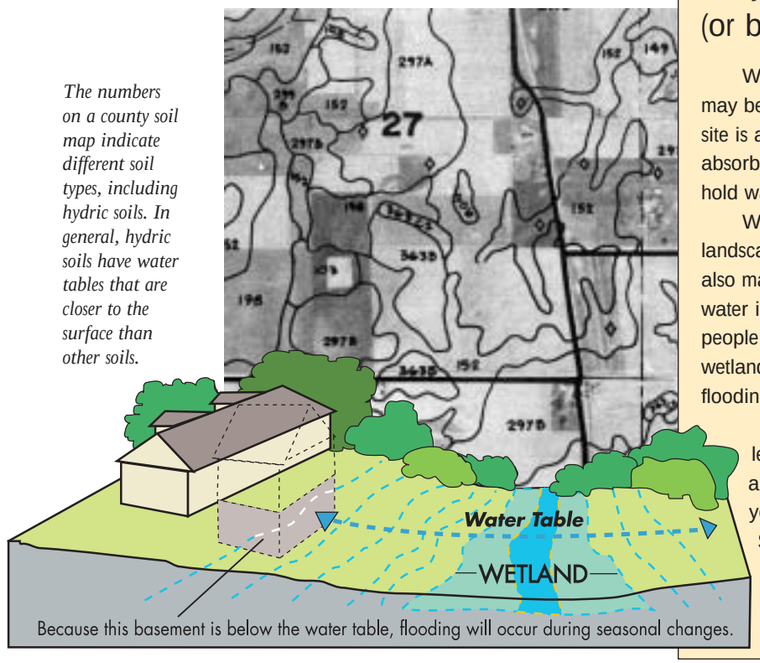
Blue-green algae

Don't confuse algae with the tiny, floating plant family called duckweed—lesser duckweed and its cousin, watermeal. The round or oval leaves of these plants are less than one-quarter inch long and can be mistaken for algal blooms. Filamentous algae will appear as greenish, stringy slime. Duckweed is an important food for waterfowl.

Pond with algae mats

Duckweed

Closeup of algae



The numbers on a county soil map indicate different soil types, including hydric soils. In general, hydric soils have water tables that are closer to the surface than other soils.

Why is my backyard (or basement) wet?

While some residents who live near wetlands may believe that wetlands cause flooding, the opposite is actually true. Wetlands act as a sponge, absorbing rainwater and runoff. The soil can actually hold water, preventing it from racing downstream.

Wetlands, however, form at low points in the landscape and water will collect there. Wetlands also may indicate that the water table, the level of water in the ground, is close to the surface. Thus, if people build basements, backyards, or roads in a wetland or below the water table of a wetland, flooding will occur.

Before you buy or remodel a home, you can learn about the topography, soils, wetlands, and the water table on the property by asking your local Natural Resources Conservation Service office or county Soil and Water Conservation District (see *Finding help*, page 20) for a Soil Survey Report of your area.

Vegetation

How many different types of plants do you see in the wetland and surrounding area? Are there a few species that cover the whole area? How do the plants change as you get farther away or closer to the water?

To a society accustomed to manicured lawns and tidy rows of flowers, wetland vegetation can look unkempt and weedy. Unlike short turf grasses that we plant for lawns, however, wetland plants are perfectly suited for their environment. The tall grasses, reeds, and rushes have deep, strong roots that hold the soil and absorb nutrients out of the wetland. Their bushy tops are homes to many species of birds and insects who are vital to the ecosystem's food web, including the damselflies and dragonflies who eat mosquitoes.

Look for different *vegetation communities*, groups of plants that grow together due to similar soil and water conditions. Buy or borrow a guidebook specific for wetland plants and learn to identify what you see. Attend nature walks sponsored by forest preserve districts, nature centers, park districts, or conservation groups.

Soil

How does the soil change color and texture as you get closer to the water level? Does this soil look different than the soil in your yard?

Soil in wetlands, called *hydric soil*, is shaped by the presence of water during the growing season. The soil generally has a deep, dark surface layer followed by a grayer subsoil layer that may have reddish splotches. Rich organic areas will have deposits of *peat* or *muck*—black, highly-decomposed plants. For further information about soil around your home, contact your Soil and Water Conservation District office (see *Finding Help*, page 20).

Wildlife

What animals do you see, particularly in early morning or early evening? Do you see tracks, droppings, nests, or holes? How many different types of bird songs or frog calls can you hear? Can you find small animals such as frogs, butterflies, dragonflies, or salamanders?

Wetlands are home to many diverse species, from large to small, from airborne to aquatic. Observing wildlife in its own habitat can be one of the most enjoyable aspects of living near a wetland. Attend a birdwatching group's local walk to learn the names and sounds of common birds. Several rare and unusual birds are visible in local wetlands, including the yellow-headed blackbird, pied-billed grebe, great egret, and black-crowned night heron.

Various water and soil conditions in and around a wetland affect what species live and grow there. This illustration is roughly arranged from plants that favor drier conditions (starting left) to plants that need standing water (right). See if you can find these species around your wetland. 1. Big Bluestem 2. Yellow Coneflower 3. Blue Vervain 4. Prairie Dock 5. Spotted Joe Pye Weed 6. Switch Grass 7. Monarch Butterfly 8. Wild Bergamot 9. Common Sneeze Weed 10. Nannyberry Bush 11. Red Osier Dogwood 12. Common Boneset 13. Sawtooth Sunflower 14. Green Darner Dragonfly 15. Bristly Sedge 16. Broadleaf Arrowhead (Duck Potato) 17. Blue Flag Iris 18a. Common Water Plantain (with bloom) 18b. Common Water Plantain 19. Sora Rail 20. River Bulrush 21. Sweet Flag 22. White Water Lily 23. Cattail 24. Water Boatman 25. Leopard Frog 26. Wood Duck 27. Soft-Stem Bulrush 28. Water Smartweed 29. Common Burreed 30. Peachleaf Willow

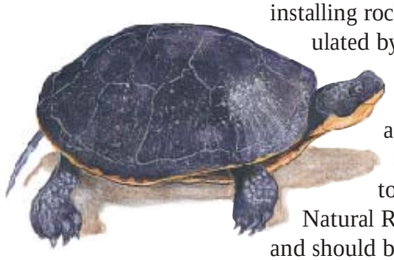
Protecting wetlands

For more than a century, we have drained, filled, dredged, dammed, and altered our nation's wetlands with the encouragement and support of the federal government. In the past 25 years, however, we have begun to recognize that these lands are invaluable resources to landowners, the community, and the entire nation. Today wetlands are protected by legislation, ordinances, easements, and deed restrictions.

Federal Law

Section 404 of the Clean Water Act requires that anyone obtain a permit before placing dredged or fill material in any waters of the United States. Most wetlands are considered waters of the United States; stormwater detention basins typically are not, and, therefore, may not be regulated by the Corps.

Activities such as filling, grading, mechanized land clearing, excavating, or installing rock riprap or seawalls all are regulated by the Corps. Individuals must apply for a permit from the Corps before doing these activities. Copies of the permit application must be forwarded to the Illinois Department of Natural Resources and the Illinois EPA, and should be sent to the U.S. Fish and Wildlife Service (see *Finding help*, page 20).



The Blandings turtle, once common in northeastern Illinois, has been eliminated throughout much of its range by habitat loss.

The law also requires that developers or individuals avoid or minimize the impacts to wetlands when building homes or businesses. If they can't avoid impacting the wetland areas on their property, the Corps may allow them to mitigate for the damage to wetlands by restoring previously converted wetlands, enhancing degraded wetlands, or creating new wetlands. This is called *wetland mitigation.*

Ask your homebuilder if the wetlands in your area were subject to mitigation or preservation action by the Corps. If so, the developer or the homeowners' association may still be obligated to manage or maintain the wetland. Check your homeowner's association agreement, covenant or easement documents. Call the Regulatory Branch of the Corps if you have questions (see *Finding help*, page 20).

State Law

There are no state laws specifically regulating wetlands; however, if construction projects occur in wetlands in a floodplain or in areas adjacent to a public water body (e.g., the Chain O'Lakes or the Fox River), they will be regulated. Small wetlands in residential areas are not regulated by the state. Contact the Illinois Department of Natural Resources, Office of Water Resources, for further information (see *Finding help*, page 20).

Local/County Ordinances

Some municipalities or county governments have their own ordinances restricting what activities are allowed in and around a wetland. In 1988 the Northeastern Illinois Planning Commission developed a model wetland protection ordinance which some local officials have adopted. Check with your municipal or county zoning office about what restrictions, permits, or buffer zones apply in your area.

Conservation Easements

Some wetlands may be protected by a conservation easement. This is an agreement between the landowner and a third party (such as a homeowners' association, park district, forest preserve district, or conservation organization) granting certain rights concerning the use of a piece of property without transferring ownership of that land. The developer may have created the easement at the time of development to restrict how the property is used.

If your property is adjacent to a wetland in a newer subdivision, 30 to 50 feet or more of your lot may be under a conservation easement. If so, you are not allowed to build fences, swing sets, or sheds on that portion of your lot. Planting trees, mowing, dumping, or fertilizing also may be banned. The easement may require that a buffer of native vegetation be maintained around the wetland.

Ask your homeowners' association, builder, or local conservation organization if the wetlands near your home are protected—or could be protected—by a conservation easement. If your land is already under an easement, make sure you understand how the easement restricts your activity. (See *Finding help*, page 21, for non-profit organizations that can help you with establishing conservation easements.)

Deed Restrictions

A deed restriction is similar to a conservation easement in that it restricts what activities the landowner can do on his or her land or the land owned by the homeowner's association. A clause in the property deed places restrictions on the use of that land.

In the past decade, the U.S. Army Corps of Engineers has required deed restrictions on homes that border a wetland project permitted by its office. More recently, deed restrictions are placed on "out lots" or common areas that include the wetland. These areas are then held by the homeowners' association.

Deed restrictions also can be mandated by city or county governments. Check your property title or ask your homebuilder what restrictions are on your property.

Conservation easements and deed restrictions are designed to give a wetland the natural vegetated zone that it needs to stay healthy. The 25-50 feet around your wetland may be under such a restriction. Check with your developer or read your property deed.

Being a good neighbor

The common yellow-throat is an abundant wetland warbler easily recognized by his black "mask" and "witchity-witchity" song.

When you live near a wetland, you live near an important natural resource. You have the opportunity—indeed, the responsibility—to be a steward of that resource. Start by being a good neighbor to the wetland. Practice the following environmentally-sensitive activities to decrease the amount of nutrients, pollutants, and sediment that enter the wetland.

Establish adjacent strips of native vegetation.

One of the most important ways you can care for a wetland is to give it space. A wetland that is crowded by pavement, mowed grass, or adjacent development may become overloaded with nutrients (e.g., phosphorus, nitrogen) from fertilizer and with sediment carried by storm runoff. A wetland without native vegetation around it also will lose much of its habitat value to wildlife.

To protect a wetland from adjacent human activity, a *vegetative strip* of native plants—not mowed grass—should be maintained around the wetland. This strip is simply an upland area that is maintained with native vegetation. A conservation easement or deed restriction may be in effect on your lot to provide for this strip. If not, you as the landowner adjacent to the wetland may choose to voluntarily leave this area in native plantings.

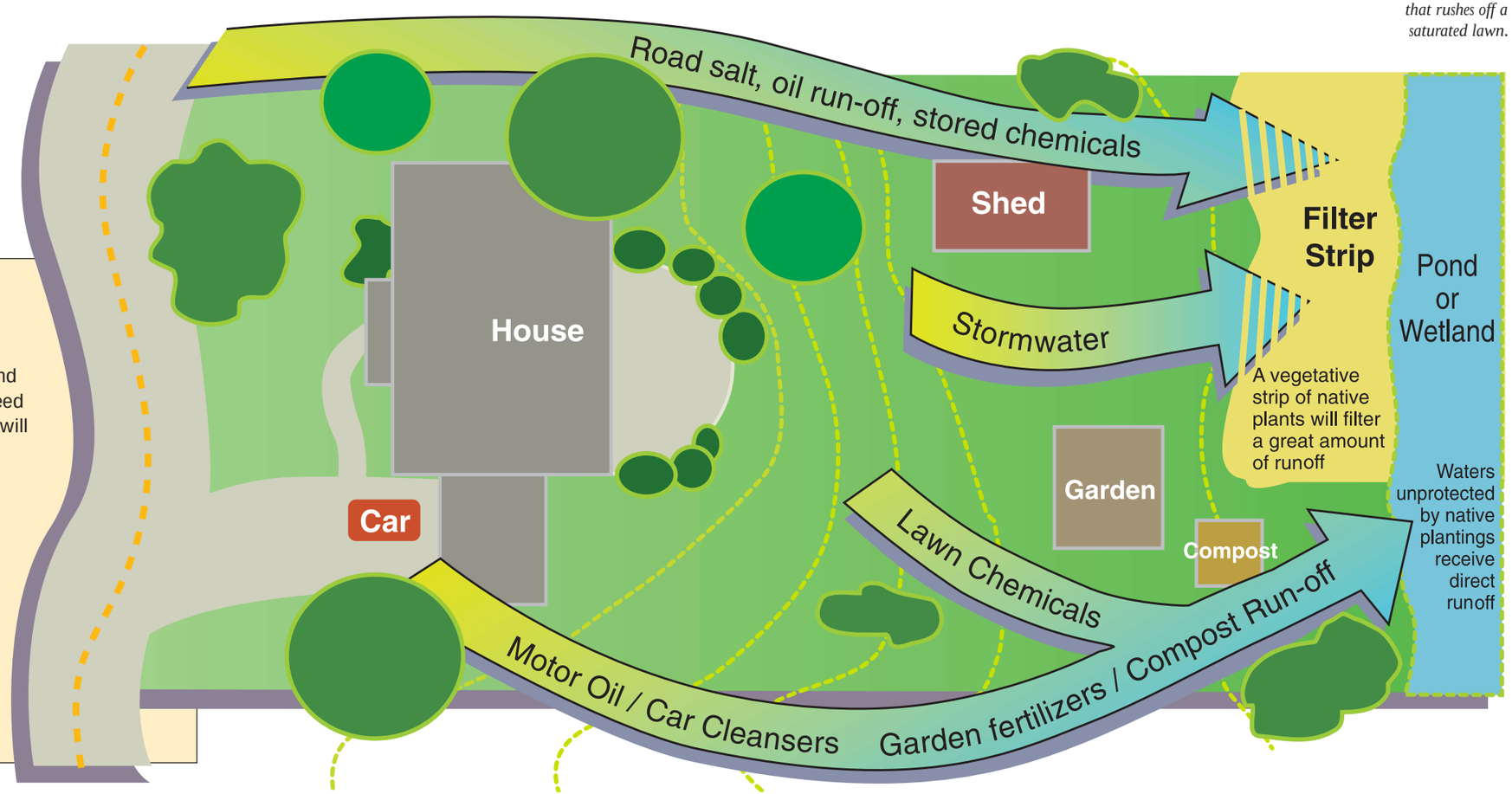
The primary benefit that a vegetative strip provides is its ability to filter out nutrients and pollutants before they reach the wetland. The deep, dense roots of native plants take up nutrients deposited in the soil from local runoff. Native upland vegetation slows the speed of the surface water reaching the wetland, thus, reducing erosion. The tall grasses of these areas also provide habitat and links to other habitats in the area (either other wetlands or nearby upland areas).

For a list of recommended species to plant in these areas, request a free copy of *Shoreline Buffer Strips* from the Northeastern Illinois Planning Commission (see *Finding Help*, p. 23). Once vegetative strips are established (within 1–3 years), they require little maintenance. Occasional mowing or burning may be necessary to control weeds and maintain native plant diversity. Only mow after midsummer, so as not to disrupt any wildlife nests. Fertilizers should not be used in these areas.

Use chemicals sparingly.

Whatever chemicals you use in your yard can wash into a wetland, either directly or via a nearby storm sewer. Be careful how and when you use lawn fertilizer, pesticides, car cleansers, road salt, and motor oil.

Without a vegetative strip of native plants, road and yard chemicals may wash directly into an adjacent wetland. Filter strips trap chemicals and slow stormwater that rushes off a saturated lawn.



Feeding your lawn or your wetland?

Many homeowners fertilize their lawn several times a season with "combination" fertilizers (containing nitrogen, phosphorus and potassium) whether the soil is hungry or not. Your soil may not need all three nutrients, and, by dumping the product on your lawn, it will wash into the wetland, feeding only the algae.

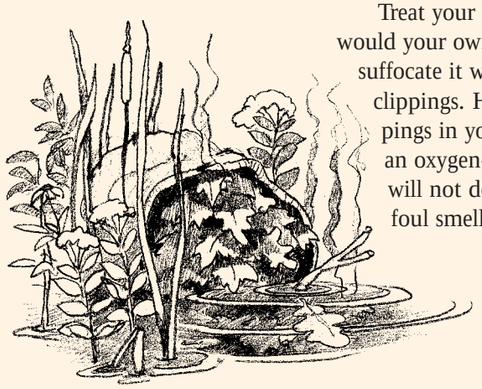
If your lawn or garden beds look unhealthy, start with other remedies before you fertilize. First, aerate your soil with a rototiller or a shovel so that roots can penetrate into the compacted clay. Then, conduct a soil test using a kit ($15-$20) available at your local nursery to measure the nutrients and pH level. Apply fertilizer based on what your soil really needs. When you are finally ready to fertilize, listen to the weather report first. Avoid applying fertilizer before a heavy rain, which will wash the nutrients away before they are absorbed by the soil.

Don't dump on (or in) your wetland.

A wetland is not a compost pile for your grass clippings, a depository for manure or pet droppings, or a convenient place to leave junk, debris, or unused chemicals.

Treat your wetland as you would your own garden and don't suffocate it with a pile of grass clippings. Heaps of grass clippings in your wetland will form an oxygen-starved mass that will not decay, but will cause a foul smell and will upset the balance within the wetland ecosystem. Contact your county's University of Illinois Cooperative Extension Service for information on how to properly compost your yard waste (see *Finding help,* page 20).

Animal waste in or near a wetland will reduce its water quality, as will unused chemicals. If you have materials that you think might be hazardous or toxic to plants or wildlife, contact the Illinois EPA or your municipality and ask about a household hazardous waste collection day in your area.



Bull Frog

Slider Turtles

Yellow-headed Blackbird

Screech Owl

Mayfly on Ladyslipper

Sharing your land with wildlife

You can do more than protect the wildlife that shares your land; you can conserve and improve its habitat. The Illinois Department of Natural Resources has biologists and literature available, through the "Acres for Wildlife" landowner assistance program, to help you. IDNR staff can suggest helpful plantings or how to construct artificial nest structures and brush piles for animals to use. Staff also may be available for an educational program to your homeowner's group (see *Finding help,* page 20).

Keep pets out of wild areas.

Your lovable and tame house cat can become an effective predator when left to run loose around a wetland. Cats can catch mice, voles, and nesting or feeding birds. Dogs also can wreak havoc for small animals and nesting birds. Leash your dog or provide a fenced area for him or her so he or she cannot harass the very wildlife you are trying to protect.

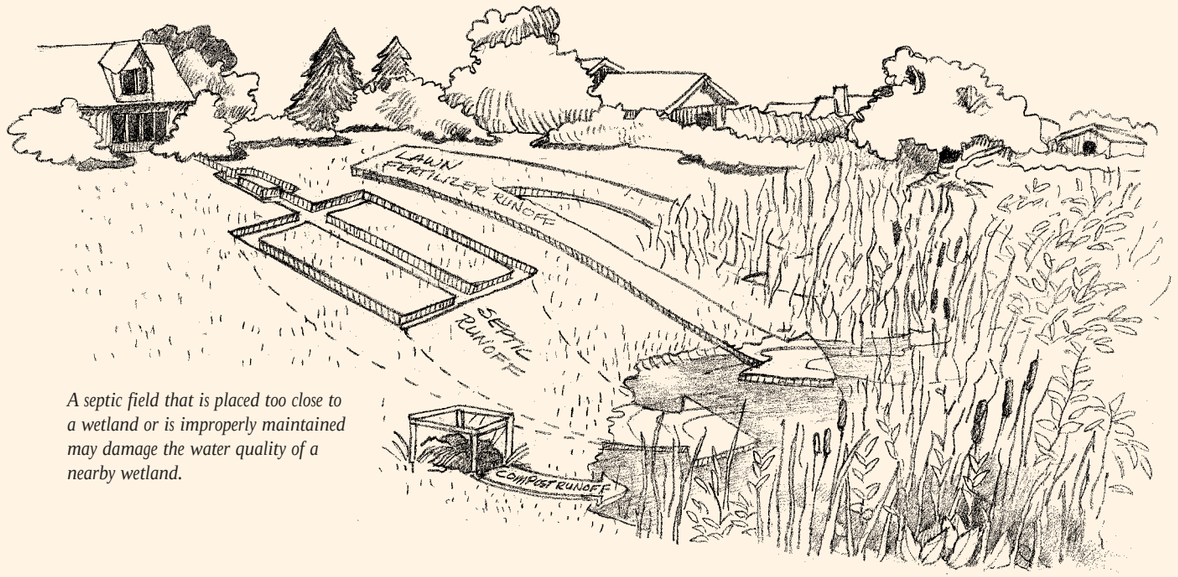
Maintain your septic system.

If your home has a septic system, you may be tempted to assume all is working well unless you see (or smell) otherwise. But if you wait until there's an obvious problem, your system may contaminate your well water and your nearby wetland in the meantime. Incompletely treated septic system waste may be slowly sending phosphorus-rich effluent to your wetland, adding to the algae and cattail build-up.

Start by inspecting your tank every year to determine the sludge level. Hire a contractor to pump the tank when the sludge exceeds one third of the tank volume (to leave room in the tank for solids to settle out before the sewage liquid enters the soil absorption field).

Check to see that your system has sufficiently dry soil in the absorption field. Fields that are too near the water table or are in poorly-drained soils will cause untreated wastewater to flow to the surface or seep to the groundwater and into your wetland.

Even a properly designed, constructed, and maintained system only lasts about 20 years (depending on the usage). After that time, the capacity of the soil to renovate the wastewater is reduced. Older systems may need upgrading or replacement. For further information, contact your county health department. (For available video, see *Finding help,* page 23.)



A septic field that is placed too close to a wetland or is improperly maintained may damage the water quality of a nearby wetland.

Managing your wetland

Today ecologists know that just as gardens need tending, urban natural areas such as wetlands, prairies, and forests also need specialized care or management. Although wetlands functioned successfully for centuries without human help, they also existed without human disturbance. In urbanized area, today's wetlands are no longer connected to prairies where animal migrations, freely flowing water, and periodic wildfires once sustained and naturally "managed" these ecosystems. Therefore, if these remaining wetlands are going to be—or become—ecologically healthy, they need human help.

That help includes planting native plants (or sowing seeds), removing unwanted invasive plants, performing prescribed burning, and monitoring the plants and animals to assess their ecological health. These tasks are usually done by professional ecologists. Some work, however, could be done by trained volunteers (see *Finding help*, pages 21-22 for non-profit organizations that offer training). Because of the large scale of management work, most activities are initiated and paid for by a homeowners' group, not an individual landowner.

Purple beauty or menace?

Purple loosestrife (*Lythrum salicaria*) is a pretty, spiky flower that blooms from early July to early September. Its role in a wetland, however, is far from delightful. Because each plant produces over 100,000 to 1 million seeds each year, it grows rapidly, unchecked by disease or insects, and chokes out native plants. This upsets the delicate balance of a wetland ecosystem, creating dense stands of purple loosestrife that can't support wildlife.

The plant is so disruptive that Illinois and Wisconsin have banned the sale, distribution, planting or cultivation of this non-native invader.

Develop a plan.

Before any management work begins, a homeowners' association should develop, with the help of professionals, a long-range management plan. These 10-year plans, produced by ecologists or wetland restoration specialists, typically cost $800 to $1500. Without a plan, it will be difficult for residents to agree on and understand the goals for managing their wetland.

Developers of wetland mitigation projects that have been regulated by the U.S. Army Corps of Engineers are required to create and follow 5-year management plans. Ask for a copy of the plan from your developer.

If your association wants to create a plan and/or complete a specific improvement project in your wetland, you may qualify for a grant to help pay for the work. Contact your local Soil and Water Conservation District office for a current list of possible funding sources (see *Finding help*, page 20).

Control non-native plant species.

To maintain an area of native vegetation around a wetland's perimeter, remove undesirable, exotic vegetation, such as purple loosestrife, reed canary grass, and garlic mustard. This can be done by hand (cutting or pulling), herbicide applications, or prescribed burning. All three may be needed. Wetland areas also need to have invasive species removed. If you are unsure of a plant's identity, take a flower and leaf cutting to a Master Gardener at your county Cooperative Extension Service office (see *Finding help*, page 20). Do not pull or herbicide a plant if you are not sure what it is.

Because herbicides such as Roundup™ or Rodeo™ (for aquatic use) are toxic chemicals, they should only be applied by "painting" and small scale spraying of specific species. Applications must be made by a commercial licensed herbicide applicator. Signs should be prominently displayed wherever herbicides are applied. Whenever possible, use non-chemical methods of removing weeds.

Burn wetlands and buffer areas.

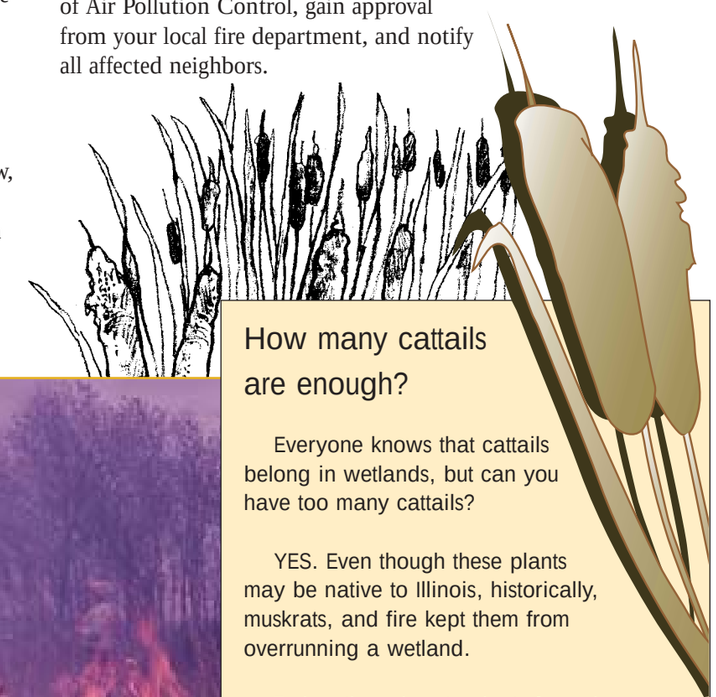
By using controlled fire in and around a wetland, you can weed and fertilize the area "naturally." Spring fire encourages growth of native plants by warming the soil and by forcing some native seeds to germinate. Fire also discourages weeds (non-natives that come from the cool meadows of Europe) by killing off their early growth and giving native plants a chance to compete.

Even in standing water areas, fire can be used to clear away invasive plants. Cattails and reed canary grass stalks can be burned above the water line in either fall or spring.

Almost all burns are conducted by fire professionals because of the need for adequate training, equipment, safety know-how, liability insurance, etc. Some residents, however, may be willing to try a small burn by themselves. This should be attempted only after acquiring extensive training and experience.

One way to learn about burns is to participate in volunteer stewardship training and workdays sponsored by a local conservation group (e.g., The Nature Conservancy, Liberty Prairie Conservancy). The Liberty Prairie Conservancy offers annual training courses for landowners who wish to burn their own land. You may also ask your local fire department if it is willing to conduct prescribed burns on your property.

Before conducting a prescribed burn, you must obtain a permit from the Illinois Environmental Protection Agency, Division of Air Pollution Control, gain approval from your local fire department, and notify all affected neighbors.



Controlled burns are necessary to promote growth of native species.

How many cattails are enough?

Everyone knows that cattails belong in wetlands, but can you have too many cattails?

YES. Even though these plants may be native to Illinois, historically, muskrats, and fire kept them from overrunning a wetland.

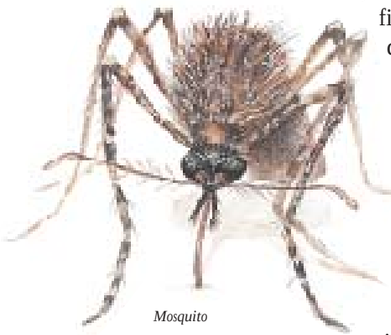
Today, these hearty plants form dense stands in waters that are rich with excess nutrients from stormwater or runoff. They choke out other plants, reducing the biodiversity of the wetland, and fill up open water areas that birds need. Some management plans may include burning or pulling thick cattail stands.

Living with wildlife.

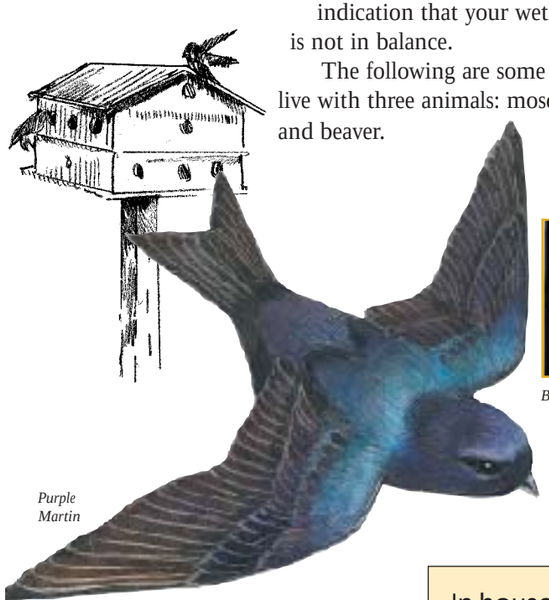
Recognize that if you live near a wetland, you live near wildlife. One of the key values of a wetland is to provide homes for birds, small mammals, reptiles, amphibians, fish, and *macroinvertebrates* (e.g., dragonflies and damselflies). The presence of all of these animals is vital to the health of the wetland and to your enjoyment of this natural area.

There may be times, however, when some animals are less than welcome because of the nuisance they can cause homeowners. In a healthy wetland, these occasions should be rare and may be an indication that your wetland ecosystem is not in balance.

The following are some tips on how to live with three animals: mosquitoes, geese, and beaver.



Mosquito



Purple Martin

Blackstripe Topminnow

Tiger Salamander

Dragonfly

In-house mosquito eaters

Dragonflies, damselflies, water beetles, fish, salamanders, and purple martins can do the work of mosquito extermination for you. The abundant vegetation in and around a healthy wetland provides the perfect home for these predators. Like Native Americans and early settlers, you may want to try attracting purple martins, who are prodigious bug eaters, by building houses for them. The Illinois Department of Natural Resources publishes a free booklet on how to build habitat structures for many birds, including purple martins (see *Finding help,* page 23).

Mosquitoes. A healthy wetland will be a fertile breeding ground for many of the mosquito's natural predators. By maintaining a healthy wetland buffer and diverse plant community in your wetland, you will naturally reduce your mosquito population.

Note that just because you live near a wetland, your nuisance mosquitoes may not come from there. Studies have shown that many nuisance mosquitoes breed close to your house. Mosquitoes flourish in any stagnant water—old tires, watering cans, pet feeding saucers, clogged rain gutters. Inspect your area carefully, dump any standing water, and remove containers that could collect water.

Biological controls are available when necessary. The least-toxic suppressant available for use in a water environment is the bacterium BTI. It is relatively safe because it is highly selective, attacking only the mosquito larvae and a few related water-inhabiting insects. BTI can be sprayed in a wetland, although it only lasts for a few days and must be reapplied.

Chemical controls also are available. Mosquito control oil can be applied to the surface of standing water, where the resulting film will suffocate larvae as they come up for air. The film's effects are reduced, however, if the water is disturbed by wind or other activity. For more effective control, use both oil and BTI.

Users of biological or chemical controls must have a pesticide operator's license from the Illinois Department of Agriculture. Call your local mosquito abatement district or private pest control service if you are considering any of these controls.

Canada geese. These birds are protected by federal and state wildlife laws, but simple measures can be tried to minimize conflicts between people and birds.

First, do not feed geese and ducks. Feeding attracts huge flocks that can spread diseases among each other, deposit large amounts of feces, and degrade your water quality.

Second, change their habitat. Geese are attracted to areas with short grasses where they can graze. If your wetland has an adjacent strip of tall, native vegetation, geese will migrate elsewhere. Don't let aerators or fountains keep water in the wetland from freezing. When open water is allowed to freeze, geese and ducks are discouraged from congregating.

Tempted to try using mute swans or fake alligators as aquatic scarecrows? Your success will be minimal or short-lived, at best. Mute swans are only territorial during their mating/breeding season (early spring), after which they co-habitate peacefully with the geese. And geese quickly learn that fake alligators are not serious predators.

Beavers. Although not attracted to isolated wetland areas, beavers do build dams across flowing waters. In doing so, they create wetland habitat for a variety of other aquatic wildlife and plants—the same variety that may have attracted you to the area. Unfortunately, beavers can cause damage to residential properties by gnawing trees, plugging culverts, and, sometimes,
causing flooding. There are ways to discourage beaver activity, however. Consider these:

- Apply small-gauge wire mesh around trees to protect from gnawing. Double wrap heavy-duty "hardware cloth," a galvanized wire with a mesh smaller than chicken wire, around the base of a tree and secure it with wire.
- Plant conifers in upland areas rather than beaver favorites such as cottonwood, willow, silver (soft) maple, and birch trees. Or plant "extra" trees—some for you and some for the beaver.

To lessen the impact of their ponding, you can insert a "beaver pipe" or a "Clemson Beaver Pond Leveler" through their dams to reduce high water. This simple device is more effective than destroying their dams, which they are likely to rebuild unless you remove the beaver. Contact IDNR Division of Wildlife Resources for further information (see *Finding help,* page 20).

Because of their ability to create wetland habitat, beavers are highly beneficial in the wild, but beavers may become a nuisance to homeowners who don't want to contribute their trees to the beaver dam.

Finding help

Government Organizations

For questions on wetlands, wetland restorations, migratory birds, and federally endangered species:
U.S. Fish and Wildlife Service,
Chicago Illinois Field Office
1000 Hart Rd., Suite 180
Barrington, IL 60010
(847) 381-2253

For questions on wetland regulations and permits:
U.S. Army Corps of Engineers
Chicago District,
Regulatory Functions Branch
111 N. Canal St., 6th Floor
Chicago, IL 60606
(312) 353-6428

For copies of county soil surveys/local soil expertise:
Soil and Water Conservation District/
U.S.D.A. Natural Resources
Conservation Service

(**DuPage and Kane counties)**
545 S. Randall Rd.
St. Charles, IL 60174
(603) 584-7961

(Will and S. Cook counties)
1201 S. Gougar Rd.
New Lenox, IL 60451
(815) 462-3106

(**Lake County—SWCD only)**
100 N. Atkinson Rd., Suite 102-A
Grayslake, IL 60030
(847) 223-1056

(N. Cook County—SWCD only)
P.O. Box 407
Streamwood, IL 60107
(847) 468-0071

(McHenry county; NRCS office also serves Lake and N. Cook counties)
1143 N. Seminary
P.O. Box 168
Woodstock, IL 60098
(815) 338-0049

For questions on construction in floodplains or along public water bodies:
Illinois Department of Natural Resources
Office of Water Resources
201 W. Center Ct.
Schaumburg, IL 60196-1096
(847) 705-4341

For information about state wetlands programs:
Illinois Department of Natural Resources,
Office of Resource Conservation
524 S. Second St.
Springfield, IL 62701-1787
(217) 524-8587

Illinois Department of Natural Resources
Division of Wildlife Resoucres, Region II
110 James Road
Spring Grove, IL 60081
(815) 675-2385

For questions on water quality protection or related environmental concerns:
Illinois Environmental Protection Agency
Bureau of Water Planning Section
P.O. Box 19276
Springfield, IL 62794-9276
(217) 782-3362
www.epa.state.il.us.

For lake/pond/wetland water quality assistance:
Northeastern Illinois Planning Commission,
Natural Resources Department
222 S. Riverside Plaza, Ste. 1800
Chicago, IL 60606
(312) 454-0400

For questions about flooding in Lake County:
Lake County Stormwater
Management Commission
333B Peterson Rd.
Libertyville, IL 60048
(847) 918-5260

For information about federal wetlands regulation, wetlands values/functions &other sources:
Wetlands Hotline
1-800-832-7828
www.epa.gov//owow//wetlands
(Sponsored by U.S. EPA; operated by private contractor)

For help in identifying local plants, composting information, or other related gardening questions:
University of Illinois
Cooperative Extension Service
County offices listed in white pages or at
www.aces.uiuc.edu

Private Consultants

There may be times when you need particular services not available from a public agency or you need more extensive help. In these cases, you will need to call a private consultant. Because "wetland consultants" are not required to be licensed in Illinois, there is no "official" list available of qualified consultants.

However, the U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and Soil and Water Conservation District offices maintain informal lists of the following local consultants:

- Nurseries and suppliers of native plants;
- Firms that conduct prescribed burnings (including carrying liability insurance, seeking permits and notifying appropriate authorities and neighbors);
- Wetland consultants (firms that provide maintenance and management services, and civil or environmental engineering firms that have experience in related issues such as site planning and stormwater management);
- Landscaping design and management services.

The Association of State Wetland Managers, Inc. also publishes an annual National Registry of Wetland Professionals and Sourcebook of Wetland Contacts and Information. The book is designed to help the reader find wetland professionals in their area. To purchase, send $17 to the association at P.O. Box 269, Berne, NY 12023-9746. Call (518) 872-1804.

Consultants charge on an hourly basis with rates ranging from $60 to $200 per hour. Fees for management services can vary greatly from site to site and from contractor to contractor. For example, cost estimates for a private firm to conduct a prescribed burn range from $600 to $8000 depending on the contractor, the complexity of the burn, the number of neighbors needed to be notified, and other factors. Ask plenty of questions and know what services and expertise you're getting before you hire anyone.

Non-Profit Organizations

For information about ecological restoration and volunteer opportunities for restoration in the region:
The Nature Conservancy
Illinois Field Office
8 S. Michigan, Suite 900
Chicago, IL 60603
(312) 346-8166
www.tnc.org

For information on using native plants:
Wildflower Preservation and
Propagation Committee
McHenry County Defenders
132 Cass St.
Woodstock, IL 60098
(815) 338-0393

For information on natural landscaping:
Wild Ones—Natural
Landscapers, Ltd.
P.O. Box 23576
Milwaukee, WI 53223-0576

Lake to Prairie Chapter (Lake, N. Cook and McHenry counties)
(847) 548-1650

Greater DuPage Chapter
(DuPage, Will & Kane counties)
(630) 415-4344

Wild Ones online handbook
www.epa.gov/glnpo/greenacres/wildones

For information on prescribed burning training and other natural areas education:
Liberty Prairie Conservancy
32400 N. Harris Rd.
Grayslake, IL 60030
(847) 548-5989

For information on creating conservation easements:
The Conservation Foundation
10 S. 404 Knoch Knoll Rd.
Naperville, IL 60565
(630) 428-4500
email: consfoun@ais.net
www.conservationfoun.org

For information on creating conservation easements:
Corlands
220 S. State St.
Chicago, IL 60604-2103
(312) 427-4256

For information on pesticides and herbicides:
The Safer Pest Control Project
17 E. Monroe St., Suite 212
Chicago, IL 60603
(312) 641-5575
email: spcp@iname.com

For information about living with wildlife, including beaver:
The Humane Society of the United States
2100 L St. NW
Washington, D. C. 20037
(202) 452-1100
www.hsus.org

CHICAGO WILDERNESS

A Regional Nature Reserve

Chicago Wilderness is a regional partnership of over 50 public and private organizations that have joined forces to protect, restore and manage 200,000 acres of natural lands and the plants and animals that inhabit them. Individuals can participate in workshops and guided tours, serve as natural area volunteers, or attend other events and activities coordinated by Chicago Wilderness throughout the region. To learn about these opportunities, call the Chicagoland Environmental Network at (708) 485-0263 ext. 396.

Training Opportunities

Naturalist Certificate Program. The Morton Arboretum offers a series of courses for the general public designed to increase participants' understanding of regional biodiversity and ecology. Courses are available at the arboretum or at College of DuPage. Call (630) 719-2468

Volunteer Stewardship Network. Participate in a workday at one of the nearly 100 sites across the region that hosts grassroots ecological restoration projects. No experience necessary; training provided. Coordinated by The Nature Conservancy; workdays led by volunteer stewards. Call (312) 346-8166 x22

Books

Chicago Wilderness: An Atlas of Biodiversity. Full color, 64-page book detailing the natural communities (e.g., prairie, wetlands, forest) of the Chicago region, their geological histories and surveys of associated animals. Published by the Chicago Region Biodiversity Council, 1997. Free; send $5 s/h fee to: Growit Communications, P.O. Box 208, Downers Grove, IL 60515-0208.

A Field Guide to the Wetlands of Illinois. Illinois Department of Conservation (now Illinois Department of Natural Resources), Springfield, 1988. Full-color detailed photographs and descriptions of 100 wetland plants typical in Illinois. 244 pp. $15.00. Available in local book stores or museum book shops.

Native Plant Guide for Streams and Stormwater Facilities in Northeastern Illinois. Information on 66 plant species that thrive in aquatic areas in this region. Prepared by the Natural Resources Conservation Service in cooperation with other agencies. 1997. Available free to non-profit organizations or for $30 to individuals (plus s/h). Call your local NRCS/Soil and Water Conservation Service.

Wetlands (National Audubon Society Nature Guides). By W. A. Niering. 1985. A comprehensive field guide, illlustrated with color photographs, to the trees, wildflowers, fishes, insects, and birds of North America's wetlands. 638 pp. $19.95.

Plants in Wetlands. By Charles B. Redington. A unique field guide that lists over 1,000 plants and animals and their interactions. Learn how to identify wetland communities and evaluate wildlife habitats. 393 pp. $30.95. Item #P7-45-8012 from Carolina Biological Supply Co., (800) 334-5551.

Illinois Wetland Restoration & Creation Guide. Illinois Natural History Survey. 1997. A practical guide on how to plan, perform site assessments, design, construct, monitor, and manage created wetlands. 196 pp. $15. (217) 333-6880.

Wild Neighbors: The Humane Approach to Living with Wildlife. By J. Hadidian, G. R. Hodge, and J. W. Grandy (eds.). 1997. Golden, CO: Fulcrum Publishing. 253 pp.

Free Brochures

Lake Notes. Series of 4-page publications produced by the Illinois EPA on specific topics related to waterfront living. Titles include: *Shoreline Buffer Strips, Fertilizers and Pesticides, Septic Systems,* and *Home and Yard.* Compiled by staff at the Northeastern Illinois Planning Commission, Natural Resources Department, (312) 454-0400.

The Disposal Guide to Household Hazardous Wastes. A detailed listing of how to dispose of everything from nail polish remover (save for a hazardous waste collection day) to old caulk (put in trash). Illinois EPA, (217) 785-8604.

Wood Projects for Illinois Wildlife. Detailed instructions on how to build simple houses and feeders to attract and keep local wildlife. 33 pp. From the Illinois Department of Natural Resources, Division of Natural Heritage, (217) 782-8774 or www.dnr.state.il.us/publicat/freebies

Videos

For wetland videos to buy or rent, request a catalog from:
Environmental Media
(800) 368-3382; www.envmedia.com
Bullfrog Films
(800) 543-3764; www.bullfrogfilms.com

Septic Systems Revealed: A Guide to Operation, Care and Maintenance. Available with a 24-page guide written by University of Minnesota staff. Video #6769 plus book, $16. Call (800) 876-8636.

Outwitting Maine's Busy Beavers. Available for $12.95 from Beavers: Wetlands and Wildlife, 146 Van Dyke Rd., Dolgeville, NY 13329. Look for online information on beavers at www.telenet.net/users/beavers.

Education for teachers

U.S. Fish and Wildlife Service Wetland Discovery Trunk. Contains curriculum guides, videotapes, posters, and field guides focusing on wetlands. Available for educators or the public to borrow. Call (847) 381-2253.

Animal Tracks® Action Pack: Wetlands. A K-8 classroom resource containing information and hands-on projects on wetlands. Contains a bibliography of other available resources and educational aids. Published by the National Wildlife Federation (1996). Send $6.00 to NWF, 8925 Leesburg Pike, Vienna, VA 22184-0001. Or download from the web at www.nwf.org.

Wonders of Wetlands Workshop. The U.S. Fish and Wildlife Service offers this workshop to educators interested in wetlands. Conducted throughout the region at wetland sites. Call (847) 381-2253.

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Justine Neslund Runvik: Cover Photo; Duck Potato, page 2; Detention pond, page 5; Closeup of algae, page 6; Dragonfly, page 18; Canada Goose, page 19. Mim Burling: Tall Meadow Rue, New England Aster, page 2; Swamp Milkweed, Burreed, Sneeze Weed, Sawtooth Sunflower, Female Redwing, page 3; prairie burn, page 17. Jerry Paulson: Inside cover background; Marsh, Wet Meadow, Forested Wetland, Fen, page 4; Algae Mats, Duckweed, page 6; Wetland and development, page 11; Background wetland photos, pages 20-21, 22-23, 24-25. Michael Jeffers: Great Egret, page 2; Green Heron, page 3; Slider Turtles, Mayfly, page 14. A. Szabados: Yellow-headed Blackbird, page 14. Roger Gustafson, Screech Owl, page 14. Dr. William M. Rosten, Blackstripe Topminnow, page 18.

Studies for Illustrations: Mitigation Illustration, page 5, from plan provided by Hey & Associates. Soil map, page 7, provided by McHenry County Soil & Water Conservation District.

The Wetlands Initiative

53 W. Jackson Blvd. #1015
Chicago, IL 60604
(312) 922-0777
email: twi@wetlands-initiative.org
www.wetlands-initiative.org

The Wetlands Initiative is a nonprofit corporation dedicated to restoring the wetland resources of the Midwest to provide environmental and economic benefits to both society and the landowner. Through research, education, public policy analysis, and large-scale wetland restoration demonstration projects, TWI aims to restore one million acres—2 percent of the wetlands lost in the Midwest—by the year 2010.

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