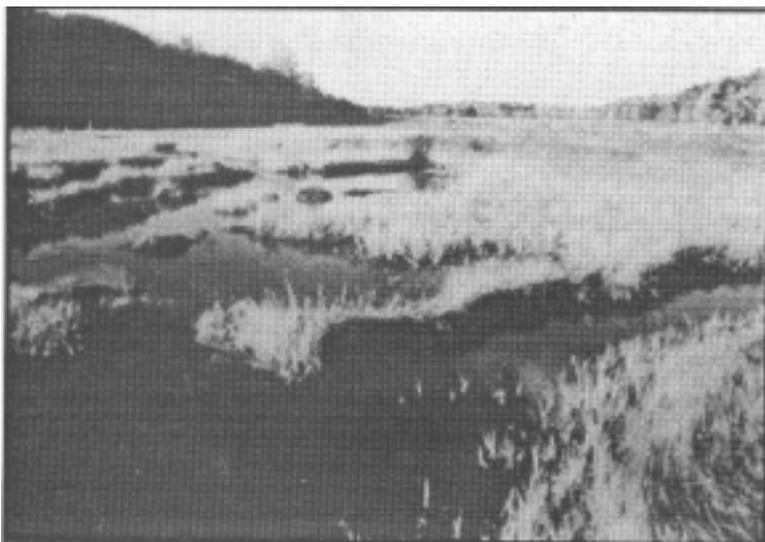


# Chapter VII Protect Your Wetlands

Wetlands need our protection – we’ve already lost over half of them since colonial times. Wetland loss through the mid 1970’s was due primarily to the conversion of wetlands for agricultural purposes and large-scale development projects. Today, however, wetlands are being destroyed in a more insidious fashion: small, piecemeal “bites” or *cumulative impacts* occur to wetland systems every day by large and small development projects. Because most of these impacts are small and numerous – a house here, a shopping mall there – it is difficult to account for and combat their cumulative effect.

To better protect our remaining wetlands, the public needs to become more aware of its community’s wetlands: what they are, their functions, how they are threatened, and how citizens can play a role in protecting them. A few individuals (e.g., your students) acting on behalf of the wetlands in your community can do a lot to discourage or prevent wetland losses. This chapter provides you with information about the various regulatory and educational protection options available to help your students become wetlands advocates.

To begin a wetland education and stewardship program, students themselves must be knowledgeable about the issues. If they want their ideas to count, they also need to communicate to the right people. Citizen advocacy enables students to effectively apply their knowledge, but only if they have their facts straight and know to whom to talk. Before initiating an education or stewardship project, review the following questions with your students:



- Why are wetlands valuable?
- What is unique about the wetlands in your area?
- What activities threaten wetlands?
- Who regulates the use of wetland areas in your state and in the local community?
- How can you play a role in protecting your community’s wetlands?

## Activity 1: Create a Wetlands Awareness Program

**Objective** Encourage students to become active wetland educators and advocates in their communities. There are a number of ways your students can “get the word out” about the importance of wetlands. Try out one or more of the education, advocacy, and citizen monitoring activities below.

### 1) Education and Advocacy

#### Community

1. Newspaper articles. Have the students write an article about their wetland, the activities they have undertaken, and what they have learned. Submit it to a local or regional newspaper.
2. Assign students to conduct a survey to learn how their neighbors feel about wetlands and the need for protecting them. Have the students use the *Introductory Wetlands Questionnaire* on page 124 to interview members of their immediate neighborhood, or have them create their own survey. Students should report to the class with their results. You might want to tally these results and use them as a supplement for a newspaper article.
3. Construct *wetland crossings* signs along roadways and/or bridges that cross through wetlands in order to increase public awareness of wetlands in town. Contact your local Department of Public Works and Conservation Commission for assistance.
4. Students can create public information fact sheets about wetlands in general or about the specific wetland they have studied. Have them explain specific wetland functions, indicate existing threats, and what protective measures citizens can take. These materials can be distributed at a number of locations: the library, town/city hall, local supermarkets, as part of an Earth Day celebration, etc.



#### Peers

1. Constructing interpretive trail markers that identify wetland plants is educational and fun. Students can follow up on this project by leading field trips through the wetland for other classes and/or family hikes.
2. Students may develop a wetland slide show from photos taken in the field and make a presentation to an elementary school class.
3. Have students create posters about their wetland to submit in a poster contest within the school or as part of the EPA's Ecology Poem & Poster contest (through grade 6 only).

## 2) Citizen Monitoring Programs

### ***Building A Database***

Students can conduct an inventory of the flora and fauna found in their wetland and gather enough data to produce a local field guide. See Chapter VI, page 108 for ideas on preparing a field guide.

### ***Wetland Watch Patrol***

Identify certain students (or involve the whole class, if possible) as “wetland watchers” to keep an eye out for possible impacts or encroachment on your wetland. See the *Changes to the Wetland* data sheet in Chapter VI for a list of potential impacts to check for. Students could work in shifts, alternating every few weeks or so. Evidence of pollution or land alteration (e.g., littering and illegal filling) should be reported to local or state authorities. Refer to the *Wetland Protection Directory*, page 119 to determine who to contact.

### ***Certification of Vernal Pools***

As you learned in Chapter II, vernal pools are a special type of wetland habitat. The pools are sometimes difficult to identify because they are often small and are not always visibly wet. Your local conservation commission may be familiar with the location of these wetlands in your community and may help you find them. The Commonwealth of Massachusetts protects these wetlands under the state Wetland Protection Act, but only if the pools have been certified by the state’s Division of Fisheries & Wildlife. Citizens in this state are encouraged to become active in assisting with the vernal pool certification process. To become involved, contact the Mass. Division of Fisheries & Wildlife’s Natural Heritage Program for more information at (617) 727-9194.

High school students in Reading, Massachusetts have formed the *Vernal Pool Association*. These students certify vernal pools and raise funds to further their protection. Contact Leo Kenney for more information by writing to: Vernal Pool Association, Reading Memorial High School, 62 Oakland Road, Reading, MA 01867, (617) 944-8200.

*Certified: A Citizen’s Step-by-Step Guide to Protecting Vernal Pools*, discusses vernal pool natural history and the certification process. Copies may be purchased for \$11 (includes postage and handling) from the Massachusetts Audubon Society. Mass. Audubon has also produced *Vernal Pool Lessons & Activities* for teachers, available for \$8. Both materials can be ordered through the Mass. Audubon Educational Resources Office, South Great Road, Lincoln, MA 01773, (617) 259-9500.

## ***Routine Cleanups***

Removing litter for aesthetic purposes or habitat improvement is a fun and very gratifying way of improving wetland quality. Keep notes on the kind of trash you find – where does it come from? Can you deduce the source? Is there any action you can take to prevent this kind of trash from ending up in the wetland again? If most of it is from a certain fast-food restaurant, how about getting them to place more trash cans at their facility? If it's plastic that comes in with the tide, how about educating boaters about the effects of marine debris? Have the students brainstorm ideas and try out potential solutions.

You can conduct a safe, successful, and enjoyable cleanup by doing a little planning, using common sense, and following a few safety tips:

- Notify the conservation commission early of your cleanup plans. They may have a lot of information about wetlands in your area: the best access points, areas that need the most attention, provide clean up supplies (gloves, bags), or assist with removing collected refuse.
- Know whose land you're cleaning up. Check with the town assessor's office to determine ownership and obtain written permission from landowners to cross private property. Do not enter posted areas without permission.
- Determine how you'll access the area and cause the least impact to wetland plants and soils.
- Plan ahead on how you will dispose of all the trash you collect. How will you transport it from the site, and where will the trash be accepted? Check with your town/city manager to possibly receive permission to dispose of the collected refuse free of charge.
- Supply students with gloves, garbage bags, insect repellent (only if necessary) and refreshments at the end of the event.
- **Familiarize yourself and students with poison ivy and poison sumac.** Also watch out for brambles and ticks. Wear long pants, long sleeved shirts, and rubber or waterproof boots, if available.
- All students should be under the supervision of an adult.
- Watch out for sharp objects (nails, pipes, etc.) that may be submerged in soggy soils.
- Take a camera to document your event and send photos to your local newspaper.

Adapted with permission from the Riverways *Adopt-A-Stream* program materials, Massachusetts Department of Fisheries, Wildlife and Environmental Law Enforcement.

## PROTECTING WETLANDS THROUGH THE REGULATORY PROCESS

To introduce your students to land use principles, provide them with an overview of wetland regulations and indicate who is in charge at the local, state, and federal level. They can write to local and state officials, keep up with their activities through the media, and find out what zoning and planning offices have in store for the future.

### **Wetland Regulations**

Wetland protection regulations are found on the federal, state and local government levels. These laws regulate different types of potentially harmful activities proposed in wetlands. Federal wetland regulations establish a minimum level of protection; however, when developing their own wetland protection programs, states often opt to establish stricter protection measures.

The federal and state protection programs often differ in how they define a wetland (i.e., the areas protected by law), the kinds of activities they regulate, and the exemptions from regulation. Unfortunately, because federal and state wetlands regulations are complex and difficult to interpret, citizens may be discouraged from getting involved in the regulatory process.

On the local level, some communities may establish more stringent measures to protect wetlands, either by including more areas under jurisdiction or by regulating certain activities. Therefore, getting involved in your local wetland regulatory process is usually the most effective way to protect your community's wetlands.

### **Federal Programs**

Several federal programs are involved in wetland protection:

**The Clean Water Act** is a major piece of legislation first passed by Congress in 1970 that protects the nation's waters from excessive pollution. It contains two sections pertaining to wetlands:

**Section 404** — The Section 404 program is administered jointly by the Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA). Section 404 regulates the discharge of dredged or fill material into "waters of the United States," which is defined to include most wetlands. Anyone proposing such a discharge must apply for a §404 permit from the Corps before any work can be performed. Dredge and fill activities are often associated with depositing dirt and sand for buildings, highway, dam, and dike construction.

**Section 401** — Before an applicant can receive §404 permit approval from the Corps, a §401 *water quality certification* must also be granted by the state where the work is being performed. Denying water quality certification enables the state to prohibit an environmentally harmful project that does not meet the state's wetland protection criteria. This regulatory measure is particularly crucial for those states lacking their own wetland protection regulations. A very useful reference on this subject is available free through EPA – *Wetlands & Section 401 Certification: Opportunities and Guidelines for States and Eligible Indian Tribes*.

**Endangered Species Act** — Administered by the U.S. Fish & Wildlife Service, the Act requires federal agencies to protect federally-listed, threatened and endangered species by maintaining existing habitats. This Act is particularly relevant to wetlands since 45% of listed, threatened and endangered animal species and 25% of plant species use wetland habitats during at least a portion of their life cycle.

**National Environmental Policy Act (NEPA)** — NEPA was the first big piece of environmental legislation that Congress adopted in 1970. It requires all federally funded development projects to go through an evaluation of potential environmental impacts. Information required by NEPA often involves the assessment of wetland impacts.

Administered by EPA, NEPA requires the preparation of environmental impact statements for those development projects that pose significant impacts to the environment and involve the use of federal funds. Information required by NEPA from the project applicant often involves the assessment of potential impacts to wetlands.

### **State Protection**

Most states protect wetlands by relying on their involvement with Section 401 of the Clean Water Act or by developing their own

wetland regulations. In developing wetland protection programs, states may adhere to federal standards or develop more strict wetlands regulations.

All coastal states in the U.S. have laws protecting their coastal wetlands; however, only 13 states have established regulations to protect inland wetland resources, even though 95% of all U.S. wetlands are inland wetlands.

Fortunately, all six New England states have wetland protection regulations in place (including both inland and coastal, where applicable). A few of the states, such as Massachusetts, require local municipal boards, known as conservation commissions, to implement regulations at the local level. New Hampshire, on the other hand, relies on specially appointed state boards to oversee activities in wetlands.

In many parts of the country, county government is more prominent than town government, and wetland regulations would be found at this level.

### **Local Protection**

The following is a list of various municipal boards and local officials responsible for land use decisions affecting wetlands. This list is particularly applicable to the six New England states:

**Planning Board** — a group that oversees community growth by developing local plans and regulations to guide the location of primary land-uses (business, agriculture, residential). These regulations protect sensitive natural resources such as water supplies, wetlands, flood plains, open space, and historical sites. Planning boards must also adopt regulations for subdivision plan review, including erosion and sedimentation controls, stormwater management, groundwater protection, and other protective measures.

**Conservation/Wetland Commissions** — a group of community volunteers that works to achieve community conservation goals, including the administration of state and local wetland regulatory programs and protection of natural resources within the community. These commissions are established by state laws dictating their legal functions and roles.

**Board of Health** — oversees many community health issues, including the design, placement, and construction of septic systems which significantly affect the quality of streams, lakes, wetlands, and drinking water supplies. Boards of health can establish health codes that prohibit septic system components (tank, pipes, and leach field) from being placed in a wetland

or require septic systems to be located a specific distance away from wetlands.

**Zoning Board of Appeals** — hears all petitions for zoning variances and may also hear applications for special permits.

**Building Inspector** — responsible for assuring that all local development projects conform to local zoning ordinances or bylaws, including zoning bylaws that protect wetlands and other natural resources.

**Local Water Supply Officials** — are primarily responsible for the development and maintenance of public water supply systems and for ensuring that they meet state and federal drinking water standards.

In addition to wetland regulations, there are other local regulatory options available to help protect wetlands:

**Zoning** — is a regulatory tool that divides a community into various land use districts and allows only certain activities to be conducted in each district (residential, commercial, industrial, or agricultural). A zoning bylaw (town) or ordinance (city) further specifies which activities or structures are allowed within each district. Bylaws and ordinances must be approved by a town meeting or city council vote before they become law.

**Overlay Districts** — protect a community's sensitive natural resources, (e.g., wetlands and groundwater) by limiting or preventing development in all districts where the resource is located.

**Wetland Bylaws** — are often stricter versions of state wetland regulations. They differ from zoning in that they do not contain a clause that enables an individual to obtain a variance. Variances grant an individual permission to

ignore a zoning bylaw in specific circumstances and carry out the proposed activity. These waivers are granted when an individual can demonstrate that the bylaw results in a case of hardship.

Bylaws do not prevent activities in wetlands but control them through building design requirements and buffer zones. Conservation commissions and/or planning boards are responsible for administering and enforcing these bylaws in most New England communities.

**Building Design Requirements** — are specific methods of building or using land so that wetlands and other sensitive resources remain unaltered during and after construction. This is done by controlling or preventing erosion, sediment runoff, hydrology changes, and pollution. Common design requirements include: the use of hay bale dikes and/or silt fabric fences, temporary sedimentation basins, mulching, grease traps, and establishment of buffer zones.

**Buffer Zones** — are specified distances established between a development project and a wetland. A town or city might require a 100 foot *setback*, meaning that the edge of the house, parking lot, etc. could be no closer than 100 feet to the wetland.

## ***For More Information***

*The Federal Wetlands Protection Program in New England: A Guide to Section 404 for Citizens and States*, U.S. EPA Region 1. Available for \$5 through the New England Interstate Training Center (NEIETC), 2 Fort Road, S. Portland, ME 04106. (207) 767-2539.

*A Citizen's Guide to Protecting Wetlands* (Stock No. 79961), National Wildlife Federation, March, 1989. Available for \$10.25 through the National Wildlife Federation, 1400 16th Street, N.W., Washington, DC 20036-2266. (800) 432-6564.

*Wetlands and Water Quality: A Citizen's Handbook for Protecting Wetlands*, Lake Michigan Federation, Chicago, 1990. (312) 939-0838.

*Guiding Growth & Change: A Handbook for the Massachusetts Citizen*, Sarah Peskin. Massachusetts Audubon Society, Lincoln, MA. March 1976.

### **Getting Your Students Involved:**

- Hold a mock town meeting where students take the roles of neighbors, developers, town officials, and environmentalists to discuss the options involved in a proposed development project impacting wetlands. (See Activity 2)
- Develop a *Wetland Protection Directory* of local, state, and federal officials who make land use decisions affecting wetlands (See Activity 3).
- Interview a local official about your community's wetlands. Ask them questions that help the class rate the community's wetland protection capability. (See Activity 4)