

Chapter V Find A Wetland to Study & Adopt

In the preceding chapters you've learned about what wetlands are, why they're valuable and what activities are threatening them. Now it's time to turn your attention to the wetlands located within your town, city, or surrounding communities. Your goal may simply be a one-time visit, or you may want to study a particular wetland in depth with long-term protection in mind. In either case, you have to locate them first. The following suggestions should help you in your search:

- 1) Poll the class to find wetlands they're familiar with, or have teams of students use their knowledge of wetland characteristics to search for possible sites;
- 2) Rely on the expertise of state and local resources professionals to assist you in your search;
- 3) Rely on your own powers of observation; or
- 4) Consult topographic or natural resource maps.

Student-Based Research

Have the students brainstorm wetland areas they already know. This will connect their daily activities to the study. Perhaps they drive by a wetland on their way to school. They may collect bait or other live specimens from a nearby marsh. Maybe they know local tales and legends of an area. Wetlands in urban areas are sometimes crossed by bridges and roadways, or they may be part of a local park.

If students think they know of a possible site, give them a checklist of the wetland hydrology and soil indicators listed below. They can explore their site with these guidelines and bring the results back to class. The whole class might decide on a wetland site by discussing the findings of students or by looking at a map.

Searching For Evidence

Observing the hydrology of wetlands that are **seasonally** saturated or inundated with water may be difficult during the drier periods of the year. If the wetland you visit appears dry, look for the following *hydrologic indicators* to provide evidence for the seasonal presence of water:



- *waterlogged soils*: dig a shallow hole (18 inches) and see if the soil is damp or wet;
- *depressions or low spots* with dark, water-stained leaves;
- *water stains or lines on trees* indicate that water periodically covers the area to at least the depth shown on the objects;
- *thin layers of sediment* deposited by flowing water on leaves or other objects lying on the ground; and
- *water-transported debris* lodged in trees and plants or collected around their bases.

Use this list of indicators to help you distinguish upland and wetland soils:

- *Organic soils*: Look on the soil surface for a thick layer of decomposed organic matter which can be black (muck) to dark brown (peat). Mucks contain plants that have decomposed beyond recognition and peats show very little plant decomposition (many of the plants can be recognized).
- Rub the organic material between your fingers – it should leave a dark stain.
- *Mineral soils*: look for a thick, dark, surface layer; gray subsurface colors; and the presence of reddish-brown, orange, or yellow mottles (iron) near the surface.
- May smell of rotten eggs (hydrogen sulfide) in the wettest soils.
- Beware: if you find soils that appear uniformly tan with a sandy or grainy texture in an area adjacent to your wetland, you may have discovered *fill dirt* that could have been placed there for development purposes.



Contact Local Officials & Others

In some New England states, local conservation commissions are responsible for protecting your community's wetlands. Because these officials are familiar with your town's natural resources, they should be consulted before taking a trip. Commission members can be indispensable sources of local wetlands knowledge – their location, ownership information, development threats, and those best-suited for educational purposes. They may also be interested in the results of any wetland stewardship or study projects the class undertakes.

Other organizations can provide you with assistance in locating wetlands. These include state natural resource or fish & game agencies, environmental groups, watershed associations, state university natural resource departments, state cooperative extension services, and hunting clubs. All of these groups are involved to some extent in wetland research, education, natural resource management, or protection. See the *Appendix* for the addresses of the state and federal natural resource agencies.

If your goal is to take your students on a onetime field trip, consider visiting a state park, wildlife refuge, or conservation land that has *boardwalks* weaving through wet areas. Many of these trails give visitors the opportunity to observe a wetland up close without having to wade through water or damp soils. A list of wetland sites to visit throughout New England is found in the *Appendix*.

Look Around You

Rely on your own powers of observation. Keep your eyes open for the presence of water as you travel through town. Where do you remember seeing flooded conditions after a heavy rainstorm? Have you noticed any land that appears soggy or flooded along the side of roads? Are there any wetlands that might border rivers or streams? What about low-lying areas or depressions in the landscape – do these locations appear to collect and hold water for extended periods of time? As you become more aware of what wetlands are, you may find yourself noticing them more often.

Finally, take a good look around your school property. You may have a wetland to study that is adjacent to the school. Many schools have been sited near wetlands, as towns have tended to keep for public purposes otherwise undevelopable land. You may literally find yourself adopting a wetland in your school's backyard!



Use Maps

The world is full of different two-dimensional representations of the earth's surface. The following maps will be useful in trying to locate wetlands:

U.S.G.S. Topographic (Topo) Maps include contours of the land's surface, providing a three-dimensional perspective of the landscape. Topo maps also contain a great deal of other information, such as waterways, transportation features (bridges, roads), and large wetland areas. The typical scale of a topo map is 1:24,000. The U.S.G.S. has divided each state into a series of *quadrangles*; you need to find out in what quadrangle your town is located. (Note: Your town may be part of several adjacent quadrangles, in which case you may require a few different topo maps.) You can purchase these maps at many book stores and pharmacies.

State Wetland Maps. Many state natural resource agencies have wetland maps that are usually more accurate and detailed than topo maps. They may depict wetlands too small to appear on a topo map.

Community Base Maps are enlarged maps of towns and cities showing rivers, roads, and zones for commercial, industrial, and residential use. These maps also distinguish public from private lands. Check with your conservation commission, town clerk, or city manager for copies.

National Wetland Inventory (NWI) Maps correspond to U.S.G.S. 1:24,000 scale topographic maps. These maps are prepared by the U.S. Fish & Wildlife Service. Available through the U.S. Geological Survey by calling 1-800-USA-MAPS or sending your check to U.S.G.S., EFIC, 507 National Center, Reston, VA 22092. They cost \$3.50 for paper or \$5.25 for mylar.

Soil Survey Maps The Soil Conservation Service (SCS) has been surveying the nation's soil types for the past 50 years. Developed on a county-by-county basis, soil surveys contain an enormous amount of detail about the geology, hydrology, and land use characteristics of the area. Use what you've learned about wetland soils to locate wetlands on these maps; areas marked as *poorly drained* or *very poorly drained* soils are probably good bets.

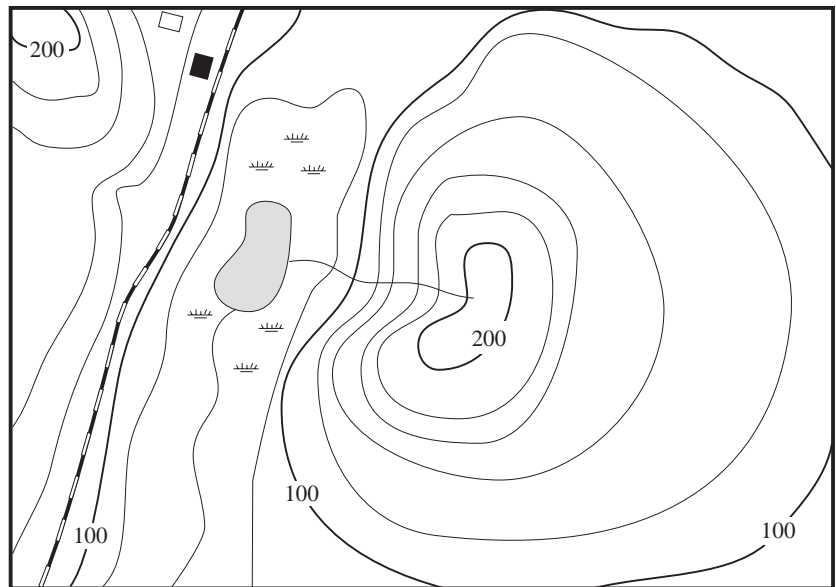
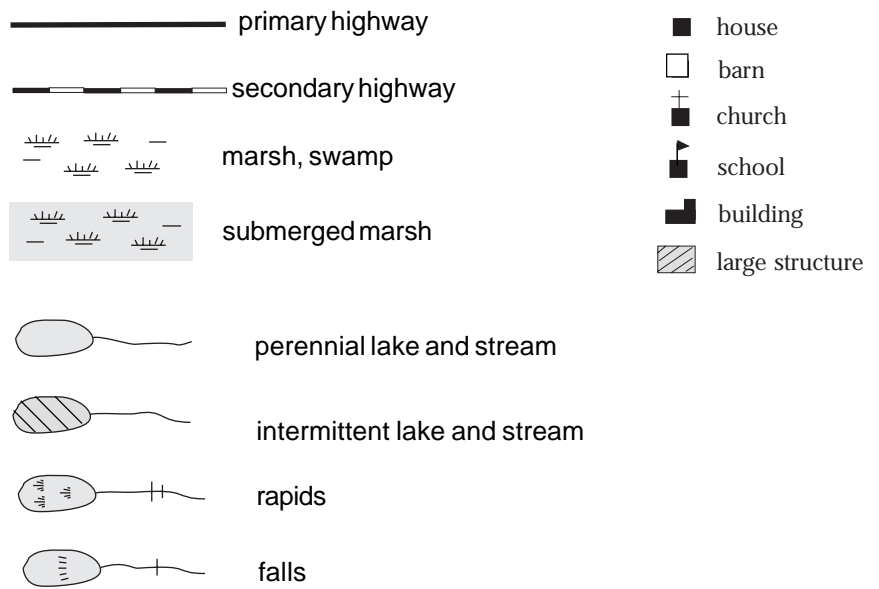
Learning to Use Maps

Maps provide many opportunities for learning, whether it's to scope out your community's wetlands or learn about topography in general (See activities 1-4 on mapping.) Examine a topographic or base map of your community to find the larger, more obvious wetland systems. Look for the wetland symbols (≡≡≡) close to roadways in order to find wetlands that are most accessible for you and the students. The following *map reading basics* will help you get started:

Scale — Map scale is the size relationship between the features shown on the map and the same features on the earth's surface. This is usually expressed as a ratio (e.g., 1:24,000, where '1' unit on the map equals 24,000 units on the ground in feet, miles, etc.). Maps are available in different scales, which means they show different levels of detail. For instance, a map with a scale of 1:24,000 will show more detail than one with a scale of 1:250,000.

Contours — Some maps may be replete with squiggly concentric lines called contours. Contour lines represent areas of equal elevation in the landscape – ridges, hills, and valleys. As drawn on the map, each contour line represents points of equal elevation; moving from one line to another represents a gain or loss in elevation. Contour lines drawn closely together indicate more rapid elevation change or steepness; lines that are spaced widely apart indicate an area that is gently sloping. Every fifth contour line is darkly marked and labeled with a number representing its elevation above sea level. For example, if the contour interval is 20 feet, every fifth line is 100 feet.

Maps contain many other informative symbols for “reading” the landscape:



☞ Also refer to the sample USGS topographic map on page 87.