

# Chapter 1

## GETTING STARTED

The first step in the Adopt-A-Wetland program is to get to know your wetland and why you should care about its health. Volunteers will become familiar with their wetland through visual assessments and watershed identification. They will work with local partners to foster community and local government involvement with the protection and study of wetlands. Participants commit to adopt their wetland for at least one year, but data collection over several years allows for better analysis of changes.

Level I activities include:

- Identifying a wetland to adopt
- Creating a Who to Call for Problems List
- Registering with Georgia Adopt-A-Wetland
- Conducting a Watershed Survey and Map Assessment
- Assigning the broad classification of the wetland type
- Locating the wetland on a USGS topographic map or the National Wetlands Inventory maps (NWI)
- Assessing the values and functions of your wetland
- Regular visual assessments, gathering general information about the hydrology, vegetation, and soils.

### Identify A Wetland to Adopt

Wetlands are not as common and easy to find as streams and creeks. For this reason, it is advisable to work with a local partner who may own land where a wetland is located or contact a government agency for permission to work on publicly owned land. By purchasing a USGS topographical quadrangle of the area of interest, you may learn if a wetland is present. A better estimation of wetland location will be found on a NWI map (National Wetland Inventory). These quadrangles correlate to the USGS topo maps

and are specifically made to identify and classify wetlands. Both the topographic and NWI maps may be purchased at the State Geological Survey office in the Agriculture Building in downtown Atlanta (404-656-3214). For more details on maps, review our manual, **Getting To Know Your Watershed**.

Some general guidelines to follow for selection of a wetland:

- Select a wetland meaningful to you or your group.
- Select a wetland, which has **easy, safe, and legal** access.
- Select a project that you can have fun with.

## How Do I Know If I Am In A Wetland

There are several wetland **indicators** you may use to determine if your area of interest is a wetland. Wetland professionals look for the presence of **hydrophytes** (water-tolerant plants), **hydric soils** (soils that have been saturated with water for a long period of time), and **hydrology**. Below are a variety of indicators you can use to determine if you have a wetland.

Hydrology:

- Presence of standing water or soggy soils.
- Dark-colored water marks on tree trunks.
- Leaves on the ground are gray or darkly stained.



Hydrophytic Vegetation:

- **Buttressing** of tree trunks, where the base of the tree is enlarged to provide support.
- **Knees** or other adventitious growth that allows support and/or ability to access oxygen from the surface.
- An abrupt change in plant communities often paired with a visual drop in elevation.

The presence of hydrophytic plants may indicate that you are in a wetland. Plant guides and resources can be obtained through our website at [www.riversalive.org/aas.htm](http://www.riversalive.org/aas.htm).

Hydric Soils:

- Soil colors may be gray, greenish, or blue-gray.
- Surface soils may be dark brown or black from decayed organic matter.
- Soils will “ribbon” when squeezed in your hand.
- Soils may be saturated with water, but may not if it is the dry season.

Water does not have to be present at all times for the area to be a wetland. In fact, many wetlands look like dry forests or meadows during the dry season. That is why it is important to look at the plants and soils. If water is present during the growing season,

plants that cannot tolerate water will not grow and plants that can tolerate water may grow. When water saturates soil for several days, the chemistry of the soil will change, causing some of the characteristics listed above. These characteristics remain long after the water is gone, thus leaving a good clue that water has saturated that soil for a long period of time.

The easiest indicator is standing water. Other indications that water has been present include **watermarks** on rocks and tree trunks, and discolored leaves that look partially decomposed.

For those with an eye for plants, a change of plant communities may be seen as the upland transitions to a lower elevation. Plants commonly seen near wet sites, such as red maple or cinnamon fern, may be present. Some plant adaptation may be obvious, such as **buttressed** trees that are characterized by the expansion of the base of the tree. Some plants will put out roots or **knees** that rise above the water level to aid in oxygen exchange during flooded conditions.

When a soil is **saturated** with water for a period of time (hours to days, depending on the conditions), the soil will develop anaerobic conditions (low to no oxygen). These conditions lead to the development of characteristics listed above that allow for their identification.

At this point, it is only important to know if you have a wetland. Through the study of your wetland and the use of this manual, your understanding of wetland soils, vegetation, and hydrology will grow.

## Find Local Partners

Local partners can help make your project a success in many ways. They can offer technical advice, donate equipment, or facilitate access to a wetland. Contact groups in your area which may be interested in hands-on helping with the project or who may be willing to sponsor your group through donated equipment (e.g. rubber boots) or permission to work on their property.

Examples of local partners with wetland access may include:

- Large private landowners such as timber companies who may have wetlands on their property.
- Government agencies like the Department of Natural Resources Wildlife Resources Division, who have large management areas.
- Municipalities who may have wetlands available for your group to adopt.
- Environmental education centers.
- Schools that may have outdoor classrooms located near or in a wetland.
- Small private landowners like farmers.

## Register With Georgia Adopt-A-Wetland

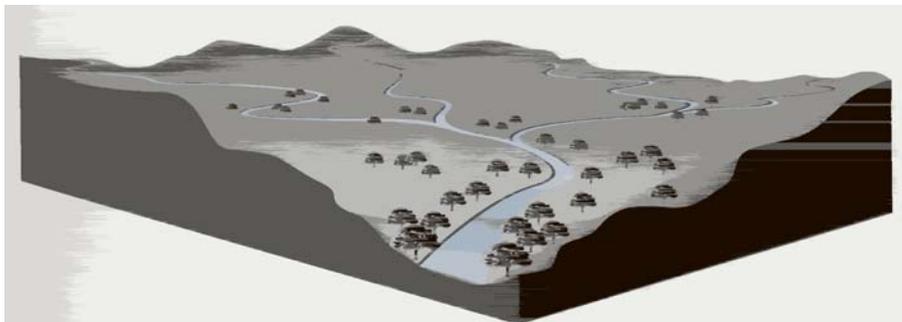
When you have found the wetland area of interest and identified the landowner as a partner, the next step is to obtain the manual, ***Getting To Know Your Watershed***, from Georgia Adopt-A-Stream. This manual will take you through the steps of identifying your wetland, determining the name of your wetland, obtaining maps, determining which watershed you are in, naming your group, setting goals, making a “Who To Call List,” and informing your local government.

***Getting To Know Your Watershed*** also contains the Registration form and information on how to register your wetland with Georgia Adopt-A-Wetland. Registering is important so that your group is officially recognized as part of this program. You will be placed on our mailing list and will receive an official group and site number.

## Conducting The Watershed Survey and Map Assessment

A **watershed** includes the entire land area drained by a certain stream or river. Hills and mountains determine in which direction water flows; a drop of rain falling on one side of a hill may eventually find its way to a stream, river, or groundwater system that creates your wetlands. If the drop of rain falls on the other side of the hill, it will follow a different path to a different stream or river. Looking at a topographical map will help you determine the area that makes up your watershed.

Water draining into your wetland may carry with it soil, fertilizer from lawns and fields, oil and gas from parking lots and roads, or anything which comes in contact with the water. Land activities which may alter hydrology in your wetland’s watershed may also have an effect, e.g. dredging and filling in or near a wetland, road building, draining for agriculture, etc. Waterways drain water from land in the surrounding area, so every activity on the land may have an impact on the stream or groundwater feeding your wetland.



To conduct the Watershed Survey and Map Assessment, you will need a copy of the manual, ***Getting To Know Your Watershed***.

## Determining The Type Of Wetland You Have

Determine if the wetland is an **open system** (exchange of water, sediment, nutrients, pollution, organisms and energy with surrounding areas is easy) or a **closed system** (not as much exchange with the surrounding areas). The majority of Georgia's wetlands are open systems such as coastal marshes and river and stream corridors. If the system is an open wetland, then chances are that the wetland will be affected by land use in the watershed.

Closed system wetlands generally receive their water from precipitation or groundwater, so exchange with the local watershed is limited. However, contamination of groundwater or changes in groundwater levels due to watershed land-disturbing activities may seriously affect the wetland's hydrology (drying it up or flooding it). Neither type of system is immune to filling or dredging, so it's important to note activities around the wetland, which may contribute sediment or drain the site.

## **Classify Your Wetland**

Once the Watershed Survey and Map Assessment has been conducted, use the following chart to classify your wetland. If a wetland is not associated with a body of water (such as the ocean or a river, stream or lake), it is considered to be palustrine.

Wetlands are found on nearly every continent, have many names (bogs, swamps, fens, pocosins, etc.) and many characteristics. They may be shallow, slow-moving water systems, deep riverine systems, or areas which are dry except for a short period of time in the growing season. Open wetland systems have significant flows of energy and material both into and out of them. Substances such as sediment, nutrients, pollution, and organisms (dead and alive) make up material flows. Energy flows refer to sunlight, food energy and moving water. Most of the wetlands in Georgia are open systems that exchange materials with their surrounding environments. Examples of open systems in Georgia include coastal salt marshes and river and stream corridors.

Closed systems, on the other hand, have little or no exchange of materials with their surrounding areas. Precipitation is the main source of water and evaporation is the main loss of water. Nutrients are generally tied up in plants and animals living in the wetland. Closed wetland systems found in Georgia include cypress ponds, granite outcrops communities and Carolina bays.

Georgia has four major groups of wetlands: coastal marshes, bog swamps, and riverine and isolated wetlands (Simkins et al. 1991). The largest and most complex of these systems is the coastal marsh. It may be divided into three functional classes: salt, brackish, and freshwater marshes. The dominant vegetation differs in each class, with *Spartina alterniflora* (saltmarsh cordgrass) making up the majority of a salt marsh, *Juncus roemarianus* (needle rush) dominating brackish areas, and a wide diversity of vegetation found in freshwater marshes.

The second-largest type of wetland in Georgia is the bog swamp. The most famous Georgia bog swamp is the Okefenokee swamp in the southeastern part of the state. It is approximately 427,000 acres in size and receives about 85% of its water from

precipitation!

Riverine wetlands (also referred to as riparian wetlands) are usually associated with floodplains or bottomlands adjacent to rivers. Rivers spilling out of their banks during periods of rain deposit sediment, nutrients, and organic materials in these floodplains. As a result, the soils are rich in nutrients and desirable for agricultural lands. The draining of wetlands for agriculture has accounted for the greatest loss of these areas. Red rivers in the mountains and piedmont region are the most productive riparian wetlands in Georgia. In the coastal plain, the riverine wetland type changes to black rivers, characterized by waters dark from tannic and humic acid inputs.

Major Categories	General Location	Wetland Types
<i>Coastal Wetlands</i>		
Marine (undiluted salt water)	Open Coast	Shrub wetland, salt marsh, mangrove swamp
Estuarine (salt/freshwater mix)	Estuaries (deltas, lagoons)	Brackish marsh, shrub wetland, salt marsh, mangrove swamp
<i>Inland Wetlands</i>		
Riverine (associated with rivers & streams)	River channels & flood plains	Bottomlands, freshwater marsh, delta marsh
Lacustrine (associated with lakes)	Lakes & deltas	Freshwater marsh, shrub and forest wetlands
Palustrine (shallow ponds & freshwater wetlands)	Ponds, peatlands, uplands, groundwater seeps	Ephemeral ponds, tundra peatland, groundwater spring oasis, bogs

**Classification system developed by Cowardin (1979) and used by U.S. Fish and Wildlife Service**

## Wetland Functions and Values

Now that you have determined the broad classification of your adopted wetland, ask yourself, “Just how important is this ecosystem?” Wetlands of any size have values and functions, which are beneficial to human society or are of intrinsic importance.

Wetland **functions** are those processes that occur in a wetland system irrespective of human activity. Depending on the wetland type, functions include floodwater storage, erosion control, water purification, sediment trapping, chemical and organic waste processing, nutrient removal, groundwater discharge and recharge, and animal and plant habitat. These characteristics will continue to occur regardless of man’s presence.

Wetland **values** are those ecosystem processes that are perceived to have a positive impact on people. Values may change over time as the perception of human society changes over time. Wetland values and resources for humans may include food, fuel, timber and fiber harvest, recreation, aesthetics, and education. Of course, wetland functions can and should be “valued” by society, but that is not always the case.

**Check off the Functions and Values of your wetland on the following chart.** You may have to do a little research into local history and uses of your wetland to complete the chart. Use local **County Soil Surveys** to get an idea of land use and soil types. Your local Extension Service Agent or USDA -Natural Resources Conservation Service office can help you with maps and County Soil Surveys. Also, consider how the community generally regards your wetland area. Remember, not all functions are necessarily values and vice versa!

**Rank the characteristics from 1 - 5 (with 5 being the most important) to get an idea of which functions and values are considered more important.** Photocopy the following chart and try to rank the functions and values of your wetland once a year. It will be interesting to see if the values change (due to change in community perception) or if the functions change as the land use within the watershed is altered.

<i><b>Wetland Characteristic</b></i>	<i><b>Wetland Function?</b></i>	<i><b>Value To Your Community?</b></i>
Recreational Values <input type="checkbox"/> hunting permitted? <input type="checkbox"/> fishing for food or sport? <input type="checkbox"/> nature trails or wildlife observation points?		
Fish, Wildlife and Plant Habitat <input type="checkbox"/> wetland in migratory bird pathway? <input type="checkbox"/> nesting of birds in wetland? <input type="checkbox"/> habitat for mammal, birds, fish, amphibians and reptiles?		
Intrinsic <input type="checkbox"/> only “natural” or green area in community? <input type="checkbox"/> site for scientific research? <input type="checkbox"/> habitat for endangered or threatened species?		
Economic <input type="checkbox"/> timber, fish, shellfish production? <input type="checkbox"/> tourist attraction? <input type="checkbox"/> timber or vegetation harvested?		
Educational <input type="checkbox"/> nature preserve or county park? <input type="checkbox"/> nature center or interpretive trail which is easily accessible? <input type="checkbox"/> historical artifacts in or around wetland?		
Flood Storage <input type="checkbox"/> located in headwaters of the watershed? <input type="checkbox"/> downstream in watershed? <input type="checkbox"/> is it a riverine wetland? <input type="checkbox"/> is it large enough to store and diminish flood waters?		
Groundwater Recharge and Discharge <input type="checkbox"/> recharge for community’s drinking water supply? <input type="checkbox"/> does the community rely heavily on groundwater for water supply?		
Erosion Control: Channel and Shoreline <input type="checkbox"/> does a prominent river or stream run through the community? <input type="checkbox"/> wetland associated with river, coast or lake?		
Water Purification: Surface and Groundwater <input type="checkbox"/> filter runoff water and release clean water? <input type="checkbox"/> trap polluted runoff or excess nutrients?		