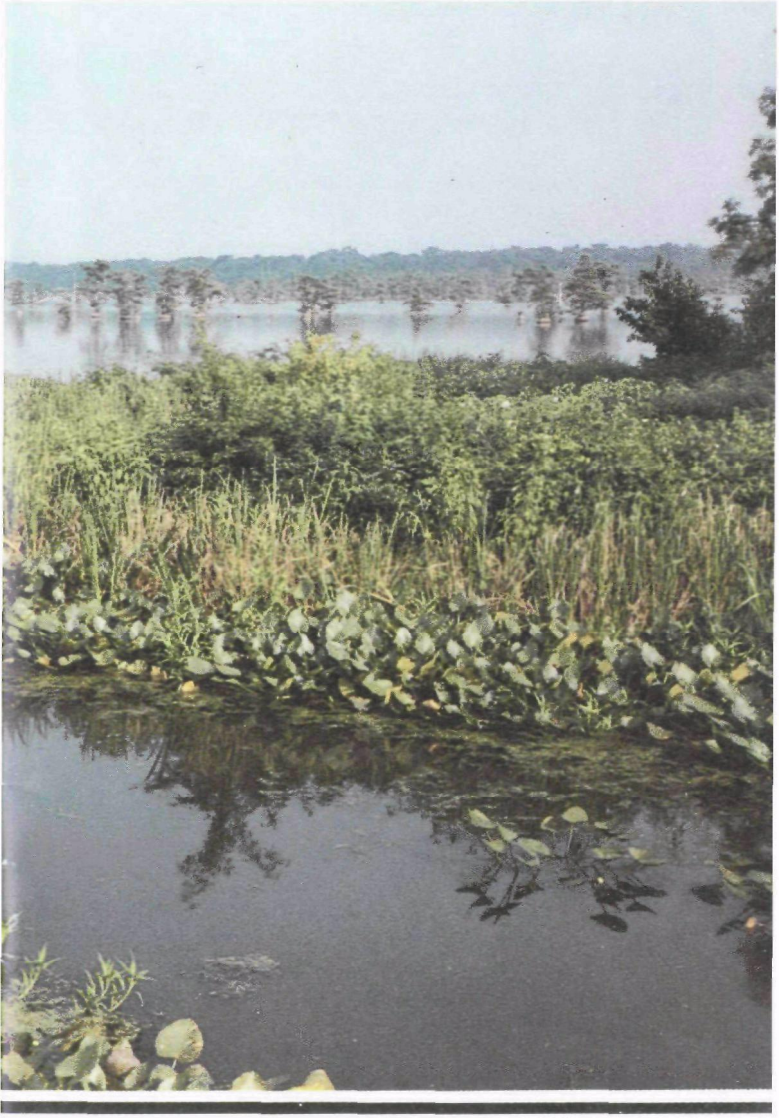
US Army Corps
of Engineers

Recognizing Wetlands



This brochure describes, in nontechnical terms, ways an individual can determine whether an area may be a wetland for purposes of the Corps of Engineers permit program. It also tells who to contact if you think an area to be filled is a wetland.

What Is A Wetland?

The US Army Corps of Engineers and the US Environmental Protection Agency (EPA) jointly define wetlands as follows:

> *Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.*

Wetlands are areas covered by water or that have waterlogged soils for long periods during the growing season. Plants growing in wetlands are capable of living in soils lacking oxygen for at least part of the growing season. Wetlands such as swamps and marshes are often obvious, but some wetlands are not easily recognized, often because they are dry during part of the year or "they just don't look very wet" from the roadside. Some of these wetland types include, but are not limited to, many bottomland forests, swamps, pocosins, pine savannahs, bogs, marshes, wet meadows, potholes, and wet tundra. The information presented here usually will enable you to determine whether you might have a wetland. If you intend to place dredged or fill material in a wetland or in an area that might be a wetland, contact the local Corps of Engineers District Office identified on the back cover for assistance in determining if a permit is required.

Why Is It Necessary to Consider Whether An Area Is A Wetland?

Section 404 of the Clean Water Act requires that anyone interested in depositing dredged or fill material into "waters of the United States, *including wetlands,*" must apply for and receive a permit for such activities. The Corps of Engineers has been assigned responsibility for administering the Section 404 permitting process. Activities in wetlands for which permits may be required include, but are not limited to:

- Placement of fill material.
- Ditching activities when the excavated material is sidecast.
- Levee and dike construction.
- Landclearing involving relocation of soil material.
- Landleveling.
- Most road construction.
- Dam construction.

The final determination of whether an area is a wetland and whether the activity requires a permit must be made by the appropriate Corps District Office.

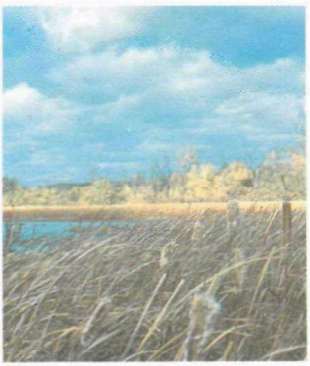
How Can Wetlands Be Recognized?

The Corps of Engineers uses three characteristics of wetlands when making wetland determinations - vegetation, soil, and hydrology. Unless an area has been altered or is a very rare natural situation, wetland indicators of all three characteristics must be present for an area to be a wetland. Each characteristic is discussed below. However, there are some general situations in which an area has a strong

probability of being a wetland. If any of the following situations occurs, you should ask the local Corps office to determine whether the area is a wetland:

- Area occurs in a floodplain or otherwise has low spots in which water stands at or above the soil surface for more than 7 consecutive days during the growing season. *Caution: Most wetlands lack both standing water and waterlogged soils during at least part of the growing season.*
- Area has plant communities that commonly occur in areas having standing water for part of the growing season (e.g., cypress-gum swamps, cordgrass marshes, cattail marshes, bulrush and tule marshes, and sphagnum bogs).
- Area has soils that are called peats or mucks.
- Area is periodically flooded by tides, even if only by strong, wind-driven, or spring tides.

Many wetlands may be readily identified by the above general situations, but there are numerous wetlands in which it is unclear whether the above occur. In such cases, it is necessary to carefully examine the area for wetland indicators of the three major characteristics of wetlands - vegetation, soil, and hydrology. The following are wetland indicators of these characteristics.



Vegetation Indicators

Nearly 5,000 plant types in the United States may occur in wetlands. A list of the types that occur in your area can be obtained from the local Corps office, the US Army Engineer Waterways Experiment Station (WES), ATTN: CEWES-EP-D, PO Box 631, Vicksburg, MS 39180-0631, or from the US Fish and Wildlife Service, National Wetlands Inventory, 9720 Executive Center Drive, Suite 101, Monroe Bldg., St. Petersburg, FL 33702. You can usually determine if wetland vegetation is present by knowing a relatively few plant types that commonly occur in your area. For example, cattails, bulrushes, cordgrass, sphagnum moss, bald cypress, willows, mangroves, sedges, rushes, arrowheads, and water plantains usually occur in wetlands. Other indicators of wetland plants can exist as trees having shallow root systems, swollen trunks (e.g., bald cypress, tupelo gum), or roots found growing from the plant stem or trunk above the soil surface. Several Corps offices have published pictorial guides of representative wetland plant types. If you cannot determine whether the plant types in your area are those that commonly occur in wetlands, ask the local Corps office or a local botanist for assistance.

Soil Indicators

There are approximately 2,000 named soils in the United States that occur in wetlands. Such soils, called *hydric soils*, have characteristics that indicate they were developed in conditions where soil oxygen is limited by the presence of saturated soil for long periods of the growing season. The US Soil Conservation Service (SCS) has published a list of hydric soils. This list is available from the local SCS office, WES, or the local Corps office. If the soil in your area is listed as hydric, the area might be a wetland.

If the name of the soil in your area is not known, there are several indicators of hydric soils that may be determined by examining the soil, including:

- Soil consists predominantly of decomposed plant material (peats or mucks).
- Soil has a thick layer (8 inches or more) of decomposing plant material on the surface.
- Soil has a bluish gray or gray color at 10 to 12 inches below the surface, or the major color of the soil at this depth is dark (brownish black or black) and dull.
- Soil has the odor of rotten eggs.

- Soil is sandy and has a layer of 3 inches or more of decomposing plant material at the soil surface.
- Soil is sandy and has dark stains or dark streaks of organic material in the upper layer 3 to 12 inches below the soil surface. These streaks are decomposed plant material attached to the soil particles. When soil from these streaks is rubbed between the fingers, a dark stain is left on the fingers.

Hydrology Indicators

Wetland hydrology refers to the presence of water either above the soil surface or within the soil for a sufficient period of the year to significantly influence the plant types and soils that occur in the area. The most reliable evidence of wetland hydrology is provided by gaging station or ground water well data. However, such information is limited for most areas and, when available, requires analysis by trained individuals. Thus, most hydrologic indicators are those that can be observed during field inspection. Most do not reveal either the frequency, timing, or duration of flooding or the soil saturation. However, the following indicators provide evidence of the periodic presence of flooding or soil saturation:

- Standing or flowing water is observed on the area for 7 or more consecutive days during the growing season.
- Soil is water-logged. This can be determined by digging a hole to a depth of 12 inches and examining the soil. If water stands in the hole, if the soil glistens with water at any depth to 12 inches, or if water can be squeezed from the soil, the soil is waterlogged.

- Water marks are present on trees or other erect objects. Such marks indicate that water periodically covers the area to the depth shown on the objects.
- Drift lines, which are small piles of debris oriented in the direction of water movement through an area, are present. These often occur along contours and represent the approximate extent of flooding in an area.
- Debris is lodged in trees or piled against other objects by water.
- Thin layers of sediments are deposited on leaves or other objects. Sometimes, these become consolidated with small plant parts to form discernible crusts on the soil surface.

Wetland Determination

One or more indicators of wetland vegetation, hydric soil, *and* wetland hydrology must be present for an area to be a wetland. If you observe definite indicators of one or two, but not all three characteristics, you should seek assistance from either the local Corps District Office or someone who is an expert at making wetland determinations.

What To Do If Your Area Has Wetlands That You Propose to Fill

Contact the Corps District Office that has responsibility for the Section 404 permitting process in your area. The address and telephone number of this office are provided on the back of the brochure. This office will accurately define the boundary of any wetlands on your property, and will provide instructions for applying for a dredge and fill permit, if necessary.