Wetlands

Physical description

Wetlands can be described as the zone between deep water and upland areas. They are characterized by various amounts of open water and vegetation with soil that is often wet or covered with shallow water. There are many types of wetlands, including beaver ponds, potholes, playas, ephemeral (temporary) ponds, small lakes, marshes, rivers, streams, swamps, and others. They are found in all of the ecoregions described in this manual.

Dominant vegetation

Aquatic vegetation can survive in the water or on lands flooded or saturated with water for extended periods. Upland vegetation cannot tolerate saturation for long periods. The vegetation found in association with wetlands varies with permanence of the water, depth of water, salinity, and substrate (bottom). Wetlands with deep, permanent water typically have less emergent (above the water surface) vegetation and more floating or submerged (below the water surface) aquatic vegetation. As the water depth decreases, emergent aquatic vegetation becomes more prevalent. Less vegetation is found on rock and gravel bottoms than on bottoms with more silt, clay, and organic material (dead plants and animals that are decomposed). Emergent aquatic vegetation may include trees, shrubs, grasses, forbs, sedges, and rushes.

Examples of trees often found in wetlands include willows, cottonwood, various oaks, tupelo gum, tamarack, cypress, mangroves, red bay, black spruce, Atlantic white cedar, and pond pine. Shrubs commonly found in and adjacent to wetlands include willows, alders, bog birch, bog laurel, Labrador tea, coastal sweetbells, inkberry, sea myrtle, and marsh elder. Emergent grasses and grass-like vegetation commonly found in wetlands include cattails, bulrushes, saltgrass, cordgrass, saw grass, sedges, arrow grass, shoal grass, eel grass, and wild rice. Water lilies, pondweeds, wild celery, water milfoil, duckweeds, and coontails are examples of floating and submerged aquatic vegetation. Typical invasive plants found in wetlands include purple loosestrife, hydrilla, Eurasian watermilfoil, reed canarygrass, water hyacinth, alligatorweed, and phragmites.

The amount of open water and vegetation is important in determining how suitable the wetland is for different wildlife species. For example, young ducks need open water and emergent vegetation for hiding. Floating and submerged vegetation supports large amounts of food high in protein, such as snails, mollusks, and

crustaceans, which young ducks need for fast growth. Emergent vegetation may supply nesting areas, such as trees for wood ducks, grass for mallards, and cattails for red-winged blackbirds and muskrats. Exposed mudflats are another critical habitat component for some wildlife species, especially shorebirds, which rely on these areas to search for invertebrates in the mud.

Wetlands with stable, nonflowing water levels go through succession similar to the process in uplands. Open-water areas fill with silt and dead vegetation, which allows emergent aquatic vegetation to become dominant. As the wetland continues to fill, it becomes drier, allowing upland vegetation to become dominant.

Plant succession

Wetland succession typically proceeds in the following stages:

Stage 1: deep water with little vegetation
Stage 2: shallow water dominated by submerged and floating aquatic vegetation
Stage 3: very shallow water or wet ground dominated by any variety of emergent aquatic vegetation
Stage 4: ground becomes drier and upland vegetation similar to the surrounding area becomes dominant.

Succession proceeds slowly in wetlands with large amounts of deep water or a rocky bottom. Fluctuations in water levels can cause the final stage of succession to regress to an earlier stage. For example, if a wetland in Stage 3 succession is flooded with deep water for a period of time, the aquatic emergent vegetation may die, reverting a wetland to an earlier successional stage. The extent of this regression depends on the length of time the wetland is flooded with deep water, how much the water level changes, and the extent (length of time) the present vegetation can survive in the changed water level.

Management of water levels is an important tool in managing wetlands for wildlife. The succession process described above is often not applicable to wetlands with constantly moving water, such as rivers, streams, and tidal areas.

Stage 1 wetland—characterized by open water and limited vegetation.

Stage 2 wetland—this beaver-influenced wetland provides a mosaic of open water with submerged vegetation, as well as floating islands of debris and emergent vegetation.

Over time, Stage 2 wetlands dominated by floating and submerged aquatic vegetation succeed into Stage 3 wetlands with more emergent vegetation, including sedges, rushes, grasses, and shrubs.

Stage 3 wetland—this natural emergent freshwater marsh is covered with several species of native grasses and sedges. Over time, these freshwater wetlands become more similar to the adjacent uplands as they slowly fill in.

Stage 3 wetland – Forested bottomland swamps, such as this cypress swamp in the Lowcountry of South Carolina, often are relatively stable wetlands because of their proximity to major river systems.

Dwayne Elmore

Stage 4 wetland — these wetlands are rarely flooded. Here, a riparian area along the Missouri River has recently flooded and sediment is deposited along the river. However, most of the time, this area is dry.

Wildlife associated with Wetlands

American bittern
Canada goose
mallard
northern pintail
redhead
spotted sandpiper
Virginia rail
Wilson's snipe
American beaver
common muskrat
mink
raccoon
river otter
eastern snapping turtle
American bullfrog
crawfish frog
tiger salamander
bluegill
largemouth bass