AN EDUCATIONAL GUIDE TO THE *Southern Illinois Wetlands* Poster

Suggested Activities

Without wetlands, the plants and animals discussed here cannot survive. The wetlands are their homes. When their homes are damaged or destroyed, they must find a new place to live, or they will die. Plants cannot move, and many animals cannot cross land barriers, such as roads, to find a new home. These plants and animals die.

Animals such as birds can look for a different place to nest and eat, but these new homes become harder and harder to find as more wetlands are destroyed. Imagine what it would be like tearing down one home in your neighborhood each week until they are all gone. The families in the first few homes would be able to find new homes by moving in with neighbors. As more homes are lost there soon would be no place for anyone to live.

Wetlands are important. They store flood water, improve water quality and provide homes for many unique plants and animals, such as the ones depicted on this poster. In spite of their importance, few wetlands remain. Students can learn more about wetlands by completing the following projects.

1. Have students research wetlands and what happens when the seasons change or changes occur due to development.
2. Have students predict how the species inhabiting wetlands would survive if there were no wetlands. Which could survive? Which could not survive? Have the students develop a plan that could help wetland-dependent species to survive. Identify people who could be important in the effort.
3. Discuss with students the composition of wetlands. Ask them to respond to the question "Can people create artificial wetlands?" Have them further explain what would have to be included in a plan for an artificial wetland development. Instruct each student to develop a plan for an artificial wetland, then let another student critique it.

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Wetlands are diverse and valuable natural resources that occur throughout Illinois. Wetlands include marshes, fens, swamps, bogs and certain riparian areas (stream corridors). Although there are many types of wetlands, they typically have three things in common: hydric soils (soils that have developed under water); hydrophytic vegetation (plants adapted to growing in water); and hydrology (presence of water at least a portion of the year).

Wetlands provide a wide range of valuable functions that are often overlooked. For example, wetlands adjacent to rivers convey flood waters from upstream areas to downstream points. Wetlands also store flood waters, slowly releasing them to downstream areas, serving to reduce damage from floods. They also contribute to improving water quality by removing excess nutrients and many chemical contaminants. They are sometimes used by communities in the treatment of waste water.

Wetlands are vitally important to wildlife. Wetlands are among the most productive places on earth. In Illinois, they provide food and shelter to more than half of the state's threatened or endangered species and serve as spawning grounds for many fishes and shellfish. As breeding, feeding and resting areas for ducks and geese, they provide a critical link for these migratory birds. They also serve as important sites for recreational activities such as fishing, hunting and observing wildlife.

Besides serving as homes to wildlife, wetlands contribute to our state's economy. For example, fishing provides $1.6 billion per year in revenue for the state. Also, millions of dollars are spent to control flooding on wetlands converted to other uses. In Du Page County, up to $1 million a year is spent to alleviate flooding problems.

Unfortunately, most of the state's wetlands have been lost. Prior to European settlement, Illinois had an estimated 8.2 million acres of wetlands. According to the Illinois portion of the National Wetland Inventory, only 920,000 acres remain. This total represents an 89 percent loss in wetland acres.

The *Southern Illinois Wetlands* poster shows an example of just one wetland type that exists in Illinois. This type of wetland is found only in extreme southern Illinois. Another poster and educational guide available from the Illinois Department of Natural Resources depicts *Northern Illinois Wetlands*.

Interpreting Features of the *Southern Illinois Wetlands* Poster

Southern Illinois wetlands are ecosystems or natural communities of plants and animals sharing the same physical environment: shallow water; fine-textured soils; and a climate of abundant rainfall, hot summers and mild winters. Each number in parentheses refers to the numbered key on the poster.

Plants

Many plants are adapted to different niches, or habitats, in the wetland ecosystem. Some, such as coontail (22) and bladderwort (23), grow submerged in water. Duckweeds (19) float on the water's surface. Tupelo gum (2) grows in shallow water, water horehound (16) grows on floating logs, and lizard's tail (11) grows in wet soil at the edge of the water. Each plant has its own life requirements which are provided by the wetland ecosystem.

Water is the most basic characteristic of a wetland ecosystem. Although water is critical to life in a wetland, it does present certain problems because it restricts the oxygen available to plant roots. Lack of oxygen is why most trees cannot grow in water. Bald cypress trees (1) solve this problem by sending up "knees" from their roots which reach above the water, as pictured just in front of the wood duck (30). Swamp red maple (3) cannot grow in permanent standing water but sometimes occurs in the swamp by growing out of an old stump.

Some plants, like common bladderwort (23), grow submerged in water. To obtain additional nutrients, this plant has little traps (bladders) that catch and digest very small animals. The bladders are depicted on the long narrow leaves.

Other plants are adapted to floating on the surface of the water. Sponge plant (18) has air pockets in its leaves to keep it afloat, and featherfoil (20) has inflated stems (like little long balloons) for the same purpose.

Epiphytes are plants that grow on other plants rather than in soil. Virginia willow (10) and false nettle (15), which grow on bald cypress trunks (1), are two examples shown on the poster.

The range of some plants, like the Virginia willow (10), is determined by climate. In exceptionally cold winters, this shrub is killed back to its roots. This inability to withstand cold temperatures limits it to the southern tip of Illinois and wetlands further south.

The plants of southern Illinois wetlands are a mixture of southern plants, like the tupelo gum (2) and spider lily (12), and plants like the cardinal flower (13) and swamp rose (9), which are found throughout Illinois.

Animals

Wetland animals also occupy different niches, or habitats. The yellow-throated warbler (25) nests high in the trees while the prothonotary warbler (26) makes its home in the shrub zone near the water. This "habitat partitioning" also exists in fish populations. The mosquitofish (40) lives at the surface of the water, the slough darter (41) lives on the bottom, and the flier (38) lives in the middle of the water column.

Some animals that live near the swamp as adults must return to water to reproduce. The bird-voiced treefrog (35) and swamp darner dragonfly (43) during immature stages live in the swamp's waters. As adults, they live near the water but not in it. Therefore, they depend on different parts of the habitat at different stages of their life.

Some animals can change their environment. As an example, the beaver (32) often creates wetlands or raises or stabilizes the water level in wetlands with its dams. It also alters the nearby vegetation by cutting trees. The beaver feeds on the bark of the trees it cuts and also uses them to construct its dams and lodges. It finds safety in the waters created by its dams.

Many animals depend on fishes of the swamp for their food. The great blue heron (27), the cottonmouth (34) and the stinkpot (37) all eat fishes.

Other animals, such as the wood duck (30) and swamp rabbit (33), get most of their food from plants.

Old, hollow cypress trees provided some of the original natural nesting and roosting habitat for the chimney swift (29). While they can still be found living in these wetlands, they are now much more common in towns where they live in chimneys.

The brown creeper (31) is known to nest in Illinois only in wetland forests. Why all of their nesting requirements are met here and not in adjacent forests remains one of nature's mysteries.