

Wetlands Poster

Bog. Marsh. Playa. Swamp. Pothole. Fen. Pocosin. Depending on where you live, you may have used one of these terms to describe a wetland. There are different types of wetlands characterized by their unique traits. Wetlands are defined as the transitional areas between aquatic and upland ecosystems. They are covered by water at least periodically and have a specific aquatic plant species and soil types.

Wetland ecosystems are valuable to wildlife and humans. Biological diversity is high in these areas. Over half of the wildlife species currently listed as endangered or threatened depend on wetlands for part of their life cycle. Wetlands filter out impurities in water, recharge ground water supplies, provide trace elements and act as sponges to prevent flooding. Coastal wetlands are important to commercial fisheries. Cranberries and wild rice are food crops grown and harvested exclusively from wetlands. Wetlands provide recreational opportunities and an aesthetic link to natural resources and cultural heritage for many people.

Despite their value, wetlands have historically been considered wastelands. It is estimated that more than 50 percent of our original wetlands have been lost since European colonization. Approximately 500,000 acres of wetlands are lost each year and may never be restored. Wetlands of the Great Plains are lost to industrial, residential, and agricultural use. Additional loss is due to pollution and the invasion of nonnative plant species.

Studying the ecology of wetlands has allowed better management of these unique habitats for humans and wildlife. Wetlands go through natural periods of drought and flooding and are not always wet. Wetland managers attempt to copy this natural cycle by draining and flooding these areas. Knowledge of different habitat needs for wildlife using wetlands allows for manipulation during critical periods of migration or breeding. With a better understanding of the importance of wetlands, many individuals and organizations are working to save existing wetlands and even create new ones.

Many plants and animals are specially adapted to wetlands. Inhabitants of these areas in the Great Plains come in all shapes, sizes and colors. Take the opportunity to explore your local wetlands and experience firsthand the ***Faces of the Great Plains – Wildlife of the Wetlands.***

Species Profiles

1. **MARbled GODWIT** (*Limosa fedoa*) – This large, brown shorebird uses its long, upturned, bicolored bill to probe the mud for small invertebrates and aquatic plant tubers. Marbled godwits are monogamous and both parents incubate and care for their young. They may defend their young and nests from large predators. Godwits are relatively long-lived shorebirds and several have survived more than 20 years. Compared to many species of shorebirds, marbled godwits are short distance migrants. They nest in grasslands of the northern Great Plains and winter along the coastal United States and Central America. During the late 1800s many were killed by market shooters. Recent population counts are still lower than historical number. Possible explanations include changes in land use practices, pesticide use, lead poisoning and habitat degradation.
2. **YELLOW-HEADED BLACKBIRD** (*Xanthocephalus xanthocephalus*) – Its scientific name means “yellow head.” The characteristic bright yellow head of the males is striking

and makes identification easy. Their raspy, buzzing call can be heard as they defend their territories. Polygynous males attempt to attract one or more females to build a nest over water in the cattails. During the breeding season yellow-headed blackbirds feed on aquatic insects. Post-breeding birds gather in large flocks in upland areas to feed on grain and return to marshes to roost at night. Most wintering flocks are sex specific with males remaining farther north than females. Eggs and young are preyed upon by a variety of avian and reptilian predators. Adult yellow-headed blackbirds may be captured by owls, northern harriers and mammalian predators such as mink.

3. **EGRETS AND HERONS** – Egrets are white herons. Thus, all egrets are herons but not all herons are egrets. The millinery trade in the 1800s threatened many populations of egrets. Aegrettes, the breeding plumes of the egrets, were prized to adorn ladies' hats. Feathers were collected from rookeries, often by killing the adults and leaving young birds unprotected. Dramatic population declines caused several laws to be passed to protect these and other species. In this photograph look for snowy egrets, great egrets, little blue herons and one white pelican.
4. **PAINTED TURTLE** (*Chrysemys picta*) – While the upper shell may be grey, brown or green, the plastron is “painted” with red and orange markings. Painted turtles may be spotted swimming or basking on partially submerged logs or muskrat lodges. They are active in ambient air temperatures about 50°F. Unique among reptiles, hatchlings produce a natural antifreeze which protects their cells from damage during winter. Painted turtles are diurnal, spending the day basking and feeding. Like sliders, they are omnivores and eat both dead and living plants and animals. Predators of the eggs and young turtles include muskrats, bullfrogs, birds and snakes. Collection by humans for pets and pesticide runoff can severely affect their populations.
5. **NORTHERN HARRIER** (*Circus cyaneus*) – Formerly called marsh hawks, northern harriers depend on their sense of hearing to find prey. The feathers on the face form a facial disk, similar to owls, which functions to funnel sounds to the ears. It is one of only a few raptors which exhibit sexual color dimorphism. Males are gray above with black wing-tips and lighter bellies. Females are brown above with a streaked, buff-colored belly. Females nest on the ground where their coloration assists in camouflage. Harriers hunt while flying over wet meadows and fields searching for small mammals, birds, reptiles and frogs. Loss of wetland habitat used for breeding and wintering and the conversion of native grassland to farming has led to harrier population declines.
6. **EARED GREBE** (*Podiceps nigricollis*) – These highly social birds breed in shallow, alkaline wetlands. Loose breeding colonies may number into the thousands. Eared grebes perform elaborate breeding displays and mated pairs build floating nest platforms of plant material anchored to emergent vegetation. Chicks are hatched asynchronously. Parents take turns carrying the young birds around on their backs while the other forages. Immediately after the breeding season birds move to hypersaline lakes where they molt and double their weight. During this time, the birds are flightless until they are ready to migrate to their wintering areas.

7. **AMERICAN BITTERN** (*Botaurus lentiginosus*) – The “thunder pumper” has a distinct call, *pump-er-lunk*. The low-frequency pitch can be heard for over a mile in their dense marsh habitat. Bitterns often conceal themselves in cattails and reeds by pointing their bill skyward and standing still or slightly swaying with wind-blown vegetation. Bitterns are most active at dusk and dawn and feed on insects, fish, snakes, frogs and small rodents. Females are responsible for nest building, incubation and raising the young. Their entire life cycle depends on wetlands and the availability of good habitat determines their fate.
8. **SLIDER** (*Trachemys scripta*) – The red stripe on the side of the turtle’s head behind its eye identifies this “red-eared” slider. Unlike the painted turtle, the plastron of the sliders is yellow or brown with large brown or black spots. It is also diurnal and sleeps during the night, floating on the water surface or resting on the bottom. They burrow into the mud of wetlands during the winter. Courtship by the smaller male includes stroking the female on her neck and head with the back of his long claws. Eggs are buried on land. Aquatic turtles, when compared to terrestrial turtles, show a flatter, more streamlined shape and webbed toes.
9. **WILSON’S PHALAROPE** (*Phalaropus tricolor*) – The reversed sex-role mating system of this shorebird finds the more brightly colored females competing for males. Females may take one male after another as mate. Male phalaropes incubate the eggs and care for the young. Phalaropes stage in large flocks on hypersaline and alkaline lakes during the fall. They winter on saline lakes in the highlands of the Andes in Bolivia, Peru, Chile and Argentina. Phalaropes often spin in the water when feeding, stirring invertebrates in the water column to the surface.
10. **MUSKRAT** (*Ondatra zibethicus*) – Highly adapted to its aquatic lifestyle, this rodent has large, partially webbed toes and a laterally flattened tail which serves as a rudder. Lips that close behind their front teeth allow muskrats to hold food in their mouths while underwater. Their fur is waterproof. Muskrats construct houses from sticks and cattails or live in dens burrowed into banks. They feed on the roots, stems, bulbs and leaves of aquatic plants such as cattails and bulrushes. They also eat crayfish, snails, fish and frogs. Muskrats can remain submerged for up to 15 minutes. During the winter they are social and several will share a den or lodge. Feeding platforms and grooves in the mud, or swimming channels, indicate their presence. In parts of their range, muskrats may produce up to six litters per year with up to seven young per litter. Predators include mink, raccoons, coyotes and northern harriers.
11. **VIRGINIA RAIL** (*Rallus limicola*) – Like the bittern, this species is more often seen than heard. Rails feed by probing mudflats and shallow freshwater marshes for invertebrates, small fish and seeds. Their laterally compressed body shape (“thin as a rail”), long toes and flexible vertebrae allow them to move in and out of thick wetland vegetation. Rails prefer a mixture of emergent vegetation, such as cattails and bulrushes, and open, flooded areas with abundant invertebrates. Although they usually escape by running, rails also dive and swim. They form territories during the breeding season and can be lured out by mimicking an intruding rail. Both parents care for the precocial young. Unlike many precocial species, rails may return to their nest platform to roost for several

days after the young hatch. Fish, snakes, muskrats, raptors, wrens, blackbirds, frogs, egrets, cranes and mink all eat rails eggs, young and adults.

- 12. SNOWY PLOVER** (*Charadrius alexandrinus*) – Snowy plovers depend on alkali wetlands and drying alkali flats during the breeding season in the Great Plains. Like other plovers, they feed by sight or by probing the substrate for invertebrates. Females mate with one male, then abandon the area soon after the chicks hatch to find another area and a new mate. She may help raise the second brood. Triple broods may occur in areas with a long breeding season. Despite their productivity, numbers of snowy plovers are low. They nest on open ground and are extremely vulnerable to predation and disturbance.
- 13. COMMON GARTER SNAKE** (*Thamnophis sirtalis*) – This harmless snake is found in a variety of habitats but prefers moderately moist vegetation. Frogs and earthworms are their main food source, but they also eat mice and small snakes. Their predators include raptors, large snakes and mammals. Humans kill them by accident when mowing or on purpose. Garter snakes are active when temperatures rise above 55°F. Females give birth to an average of 20 live young in late summer or fall. This “red-sided” subspecies has a striking pattern of red, black and yellow making it one of the most colorful snakes found around wetlands.
- 14. PLAINS LEOPARD FROG** (*Rana blairi*) – Plains leopard frogs are found around permanent and temporary wetlands. They will wander away from the water, especially after summer rains and may perish if water is not located. Leopard frogs begin breeding as early as February. They feed primarily on terrestrial insects. Small mammals, birds, birds, snakes and bullfrogs are common predators.
- 15. COMMON SNIPE** (*Gallinago gallinago*) - This is one of the most abundant and widespread North American shorebirds. However, because of their elusive behavior, cryptic coloration and solitary habits, they are seldom seen by the casual observer. Spectacular flight displays in their breeding territories include “winnowing”, a sound produced by their feathers. A snipe’s long beak has a sensory pit near the tip, which helps it detect prey while probing the mud. Their eyes are located far back on their head and are helpful to spot predators while feeding. Unlike most shorebirds, snipe construct relatively elaborate nests. Beginning with a scrape near water in sedges or other vegetation, the female weaves coarse grass into a nest and lines it with a finer grass. Three to four eggs are laid. Precocial young hatch about 20 days into incubation. Each parent takes two of the young and raises them separately. Chicks fledge and are on their own by three weeks of age.
- 16. MINK** (*Mustela vison*) – This solitary, nocturnal mammal is a member of the weasel family. Males are polygynous, mating with several females. A mink’s diet consists of crayfish, small mammals, frogs, fish, small birds and muskrats in some areas. Red foxes, bobcats and owls will kill mink. Mink bound across land and are agile swimmers. Webbing between their toes acts like paddles. Their water-repellant pelage is brown with white markings on the chin, throat or chest. Long, stiff guard hairs cover a thick underfur. Like their close relative the skunk, they can emit a powerful odor when

threatened. Wild mink were trapped for their fur. Today, the fur industry depends on mink ranches for higher quality fur.

- 17. FAMILIAR BLUET** (*Enallagma civile*) – These delicate damselflies are found around wetlands across the Great Plains. Like dragonflies, they are strictly predatory. Adults consume midges and mosquitoes as they fly in and around wetland vegetation. Bluets are often seen flying in tandem during mating and egg laying. The male holds the female just behind her head with an organ at the tip of his tail. Eggs are laid on plants. The nymph lives in the water for at least a year undergoing as many as 15 molts as it grows. Eventually, the nymph crawls out of the water and undergoes a final molt to an adult.
- 18. BLUE-WINGED TEAL** (*Anas discors*) – This small duck is found only in the New World and is quite common on wetlands across the Great Plains. It is an early migrant to its wintering grounds but returns later than many other duck species. Blue-winged teal are social, with rapid, wheeling flight patterns. Males bow and bob their heads at the females during courtship rituals. The majority of blue-winged teal winter in South America and more than 95 percent spend the winter south of the United States-Mexico border. Blue-wing teal, like many other migratory species, illustrate the importance of international conservation measures. Breeding areas, migration and wintering areas must all be protected.
- 19. BULLFROG** (*Rana catesbeiana*) – This is the largest frog found in the Great Plains. It is generally a green, olive or brown frog with dark, banded hind legs. The large ear membrane is located behind the eye and is larger in males. Bullfrogs grow to about 6 inches in length. They burrow in mud under water during the winter. Large bullfrogs prey on smaller bullfrogs and leopard frogs, as well as anything else they can swallow. Birds, bats, small turtles, crayfish, fish, salamanders and a variety of invertebrates are also eaten. Males are territorial and will kick, bump and bite intruders. Choruses of males can be heard from late April to mid-July. Females lay up to 48,000 eggs which hatch in about four days. Tadpoles spend the next three to 14 months in the water before they metamorphose into adults. Bullfrogs are legally harvested for their legs. Other predators include opossums, raccoons and skunks. Captive specimens have lived for over 7 years.
- 20. AMERICAN AVOCET** (*Recurvirostra americana*) – This shorebird can be found in many western wetlands in the spring. Bright breeding feathers give way to a gray plumage in late summer. Their long legs, neck and bill allow them to feed in deeper water than most shorebirds. Female avocets lay four eggs in a scrape on the ground and the male and the female incubate the eggs. The young are precocial and the entire family leaves the nesting area within a few hours of hatching. Predators of adults, young and eggs include raptors, fox, mink, skunk, raccoon and snakes. Concentrations of contaminants such as selenium in wintering and breeding areas can cause mortality and birth defects. Selenium enters wetlands from agricultural and industrial runoff and is taken up by invertebrates, a major food source of avocets. Avocets are a visible indicator of a wetland's health.

Glossary

Alkali – water or soil with a pH of more than 7.4

Altricial – young hatchling birds which are relatively helpless and must be fed and cared for by parents for several days or weeks before leaving the nest

Asynchronous – eggs hatch at different times, determined by the order they were laid

Crepuscular – most active at dawn and dusk

Ecosystem – the living community and its nonliving environment

Emergent plants – plants rooted in water with vegetation extending above the water surface

Habitat – the area where a plant or animal lives

Hydric soil – soil characterized by, and showing the effects of, the presence of water

Hypersaline – water which gets very salty because of salts found in surrounding soils

Metamorphosis – transformation through stages from an immature to an adult

Monogamous – males and females only take one mate

Peat – partially decayed plant matter

Pelage – fur of a mammal

Plastron – bottom shell of turtles

Polyandrous – females take more than one mate

Polygynous – males take more than one mate

Precocial – young hatchling birds covered with down, capable of feeding themselves and ready to leave the nest soon after hatching

Stage – gathering of animals where they feed and/or molt before continuing their northern or southern migration