

# Woodlands

The term “woodlands” conjures up images of forests where tall, straight trees tower toward the sky and block the sun from the forest floor. The coniferous forests of the American west or the pine forests of the southeastern United States would be examples familiar to some. The deciduous hardwood forests along the coast are well known for their colorful display of fall leaves and the many tourists they annually attract. While trees are an important part of the Great Plains, many people have never explored these woodlands or viewed the wildlife found there.

**Riparian Woodlands** - Trees are often found along meandering streams and rivers near adequate water for their roots. Riparian woodland corridors provide important habitat in the Great Plains, forming natural highways along which animals can travel and live. Riparian corridors often contain willows, dogwoods, sycamores, box elders, mulberries, walnuts, oaks, elms, hackberries and cottonwoods.

**Shelterbelts** - Early settlers on the windswept, seemingly barren grasslands were encouraged to plant rows of trees called shelterbelts or hedgerows. Seeds and trees were often transplanted from the east. These natural barricades provide protection from wind, habitat for a variety of wildlife species and mark property boundaries.

**Successional Woodlands** – The eastern edge of the prairie is in constant battle with adjacent woodlands. Prairies not burned or mowed will gradually turn into forests, as trees and shrubs grow unchecked. This process, known as succession, occurs as part of the natural cycle.

Many species of wildlife are adapted to life in the forest; the habitat the animals on this poster call home. Meet the ***Faces of the Great Plains - Wildlife of the Woodlands***.

## ***Species Profiles***

**EASTERN SCREECH-OWL** (*Megascops asio*) - This small owl can be found in woodland areas across the Great Plains and east to the Atlantic coast. It often habituates to people and will use nest boxes as well as natural tree cavities. Females lay up to six, creamy white, round to oval-shaped eggs and are responsible for their incubation and care after they hatch. Males bring food to the young. Screech owls eat a variety of animals, including small rodents, passerines, insects, earthworms and aquatic invertebrates such as crayfish. Their song is described as a descending trill, or whinny with hoots, clacking and barking sounds. There are two color phases, a grey and a brownish-red, which add to their camouflage depending on the species of the trees utilize. Young owls are often found on the ground as they learn to fly and hunt on their own. Even on the ground, they can use their sharp claws and bills to return to their parents and siblings.

**RACCOON** (*Procyon lotor*) - The raccoon is found throughout most of North America in wooded areas. Their name comes from a Native American word roughly translated as, “he who scratches with his hands” due to their habit of manipulating items with their front feet. They make a den in an old squirrel nest, a hollow log or tree, or occasionally underground. An opportunist, the raccoon feeds on both animals and plant matter. Most young are born in late spring and cared for exclusively by the female. The density of raccoons can be high in areas where there is a lot of food, cover and little disease. However, their average life span is only 2 or 3 years.

**EASTERN FOX SQUIRREL** (*Sciurus niger*) - Fox squirrels prefer open habitats with scattered trees and an open understory. The eastern fox squirrel is expanding its range into the Great Plains as lack of fire and urbanization increase the number of trees. They use both hollow tree dens and leaf nests. Squirrels feed on seeds, the cambium layer of tree bark, leaves and nuts, but will also eat insects and occasionally carrion, bird eggs and nestlings. Mating occurs twice a year in both early spring and mid-summer. Bobcats, raptors and black rat snakes are all predators of squirrels and most wild squirrels live a year or less.

**EASTERN KINGBIRD** (*Tyrannus tyrannus*) - As their scientific name implies, these flycatchers are tyrants

when defending mates and nests. They are commonly seen swooping on flying insects in open areas across its extensive breeding range in North America. Within the Great Plains populations have increased in response to increased tree density and availability of fence lines used for perches. Kingbirds overwinter entirely within South America and usually appear on the prairies by April. They breed in fields with scattered trees and shrubs and along woodland edges. Females are solely responsible for building the sturdy, elliptical nest, incubation of the eggs and most of the nestlings' care. Brown-headed cowbirds are known to lay their eggs in eastern kingbird nests but the eggs are usually detected and removed.

**BOBCAT** (*Lynx rufus*) – The bobcat is one of the most widely distributed native cats found in North America. It is seldom seen due to its secretive habits and camouflaged coat. Although bobcats will use almost any type of habitat, shaded riparian corridors of the Great Plains allow them to hunt and find shelter relatively undetected. Bobcats may reach 30 pounds and are formidable hunters. Rabbits and other small mammals are their usual prey, but they also feed on carrion, insects, birds and other animals. Litters of kittens are usually born during the spring and cared for by the female. They are weaned by the time they are 2 months old and spend the next several months following their mother around, learning to hunt. Owls, foxes and domestic dogs prey upon bobcat kittens. Adults may be killed by coyotes but can also die due to disease, starvation or injuries received while hunting.

**POLYPHEMUS MOTH** (*Antheraea polyphemus*) - Named after the Greek Cyclops, a mythical beast with one round eye, this species of moth has an eyespot on each posterior wing. They are the second largest species of North American moth with a wingspan up to 6 inches. They are found near wooded areas across the Great Plains. Pheromones, chemical compounds released by females during specific “calling times,” signal males they are ready to mate. Using their large, feathery antennae, the males detect the chemical compounds from miles away. Eggs are laid on a host plant, usually willows and oaks. The thumb-sized, bright, translucent green caterpillar with yellowish-red tubercles that develops is startling to behold. The pupae overwinter in the leaf litter on the forest floor, wrapped in a tough silk cocoon about 2 inches long and incorporating a leaf from its food plant. When it emerges in the spring, it is a beautiful grey to reddish-brown, distinctively marked, silkworm moth.

**RED BAT** (*Lasiurus borealis*) - This beautiful red haired bat is commonly found in the Great Plains wherever there are trees on the prairie. They roost during the day in trees and shrubs. This bat forages one to two hours after sunset, later than most other bat species. They feed primarily on moths but also eat other insects such as beetles and cicadas. Females have one to five young which cling to their mother when she is roosting, but she leaves them to feed. The young learn to fly as early as 3 weeks old and by the time they are 6 weeks they are weaned. Red bats are usually solitary. Depending on where they are found, they either migrate south during the winter or hibernate.

**NORTHERN FLICKER** (*Colaptes auratus*) - This well-known woodpecker is found throughout wooded areas across North America, often conspicuous because of its undulating flight pattern and white rump patch. There are five subspecies distinguishable by differences in size and plumage. In the Great Plains both the yellow-shafted and red-shafted subspecies exist and hybridize. Ornithologists and evolutionary biologists have long been interested in the differences among the subspecies and speculate that the contrasting plumages are a result of sexual selection. Northern flickers are unusual for woodpeckers in that they are often seen hopping along the ground, hammering the soil with their strong bills and using their specially adapted tongues to find ants and ground beetles. Seeds and fruit are also consumed. A highly ritualized “dance” between two birds is used to defend breeding territories. Nests are excavated by using their bills as a chisel to chip away portions of dead or diseased tree trunks and large branches. The highly specialized tail feathers are used as a brace as the flicker clings to the tree. An important species of open woodlands, grasslands and forest edges, flickers play a critical role in woodland ecology. Its nest cavities are used by other hole-nesting species. Recent declining trends in populations may disrupt the nesting ability of other species. Competition with European starlings for nesting cavities and loss of habitat are responsible for these declines.

**WHITE-BREASTED NUTHATCH** (*Sitta carolinensis*) - They can be found throughout the Great Plains in the more open woodland edges, nesting in abandoned woodpecker holes or natural cavities in large, old trees. This bird is often noticed as it walks upside down along tree trunks and branches probing crevices for seeds

and insects. Like the woodpeckers, their bill is adapted to probe and pound trees for food. First wedging larger seeds and nuts in the crevices, it uses its bill to hammer them open. During the winter nuthatches will hoard large amounts of food in caches scattered throughout their territories, covering them with moss, lichens or rotted wood. This is another species attracted to an urban bird feeder. All young disperse from their natal area. Once paired, adults live year-round in permanent territories. Occasionally, irruptive movements occur, although little is known about the survival of these individuals after they leave.

**INDIGO BUNTING** (*Passerina cyanea*): These are colorful additions to the bird life along the edges of wooded areas and near the edges of cultivated lands. Males are bright blue and the females are brown. Breeding females may be fertilized by a male who is not their social mate and males may have more than one mate. Females do all of the nest building, incubation, brooding and most of the feeding of the young. Birds may return to breed close to where they were hatched but are usually several territories away. Only male buntings sing. They have a complex, highly-ordered sequence of several notes they sing to advertise their territory. Social interactions with other buntings during a young male's first breeding season, rather than during the nestling and fledgling stages, are very important to the song he learns to sing. Although individuals have lived up to 9 years, the species has a low survival rate. Their numbers decrease locally with urbanization, intensive agriculture, frequent mowing along farms and roadsides and the succession of old fields to forests.

**COOPER'S HAWK** (*Accipiter cooperii*) - This crow-sized raptor can be found in most woodlands across North America. Female hawks are larger than males and this size difference is more pronounced in this species than in any other raptor. Feeding on medium-sized mammals and birds, its short rounded wings and long tail make this hawk especially maneuverable and quick within the dense cover of woodlands. Raccoons may take young and eggs and grown birds are often killed by great horned owls. The female does most of the incubating of the eggs and brooding of the young, while the male brings food for her and the young. Effects of DDT on reproduction, along with shooting and trapping, have all decreased over the past 40 years allowing Cooper's hawks to have healthy populations across most of their former range.

**EASTERN WOODRAT** (*Neotoma floridana*) - Found in the southern Great Plains, this rodent builds knee-high stick houses. Their houses are usually next to a tree, but are sometimes in rock crevices or abandoned buildings. Within the house there are usually two or more spherical nests constructed of plant fibers where the solitary woodrat spends daylight hours. They do not hibernate but store food in the house for winter. Woodrats store many nonfood items, earning their common name of "packrat." Several generations will add sticks, bones, leaves, trash and other materials to the house. They eat a wide variety of plants and nuts and may live up to 3 years. Owls, snakes, skunks and weasels are all known to prey upon woodrats. Young are born in litters of about four young throughout the warmer months. They disperse at about 3 months of age and find a vacant den to stash a hoard of food to get through the coming winter.

**DOG DAYS CICADA** (*Tibicen pruinosa*) - One of the most common species of cicadas found among the riparian woodlands in the southern Great Plains is the dog days cicada. It is more often heard than seen during the summer months. The dog days cicada, almost 2 inches long, blends in well with the foliage of the trees where it clings. Its mouthparts are adapted for piercing and sucking fluids from plants. The wings of the adult are membranous and prominently veined. Males have highly developed sound producing organs called tymbals. Females lay their eggs on tree limbs. When the eggs hatch, the nymphs fall to the ground and develop in the soil, feeding on the roots of the host plant. When fully grown the nymphs emerge and change into adults. Look for their molted skins, or exuviae, on the trunks of trees and the sides of buildings.

**COTTONWOOD BORER** (*Plectrodera scalator*) – These insects belong to a group of beetles commonly known as "longhorns" because of their long antennae. Adult cottonwood borers can be found eating the fresh growth of leaves and tree limbs. Females lay their eggs singly at the base of cottonwood trees. The larva hatches and burrows into the root tissue of the tree. They may take up to 2 years to mature to the adult stage. Large infestations of cottonwood borers may weaken the roots, limbs and trunks causing the cottonwood to break during high winds.

**BLACK AND YELLOW GARDEN SPIDER** (*Argiope aurantia*) – This is the largest of the orbweaver spiders found on the Great Plains. Females may have a body length of just over an inch. They build their large webs

along forest edges and in tallgrass prairie. They often build around homes as well, giving homeowners a chance to observe their interesting behavior. These spiders can kill insects as large as cicadas. They are large enough to bite people, but their venom is not considered dangerous. Their web always has a bold, zigzag of white silk, called a stabilimentum, vertically through the center. This is thought to prevent birds and other large animals from blundering into the web and destroying it. Another characteristic construction of this species is the brown, paper-like egg sac. It is about the size of a large grape and suspended in a net of silk strands somewhere near the female's web. The adults die as winter approaches, but the eggs survive until spring.

**BLACK RAT SNAKE** (*Elaphe obsoleta obsoleta*) - This subspecies of rat snake is found in the eastern portion of the Great Plains. Black rat snakes can grow rather large, often reaching lengths of 6 feet. They are active during a temperature range from 60 to 90 degrees and may switch from diurnal to nocturnal activity patterns depending on temperature. They have a home range of 25 to 30 acres and spend their time searching for food. They climb trees to get to birds and squirrels and their nestlings. They also eat small rodents, rabbits, frogs and other reptiles. They constrict their prey by squeezing and then swallow them whole. Raptors, other snakes and large mammals will prey upon black rat snakes. Six to 44 eggs are laid beneath logs, in moist soil or under rocks in early summer which hatch in 1 to 2 months. The young are patterned but grow darker and lose the patterning as they age.

**YELLOW-BILLED CUCKOO** (*Coccyzus americanus*) - Also called the raincrow because of an apparent tendency to call more frequently on cloudy days, this species inhabits open woodlands with low, dense scrubby vegetation, clearings and watercourses. Breeding is initiated when there is an abundant local food supply. Once it starts, only 17 days pass between the time eggs are laid and the young leave the nest. Young become fully feathered within 2 hours of hatching. Females may lay eggs in nests of other species. In some parts of its range it may breed cooperatively, with three or more adults tending a single nest. Cuckoos eat large insects such as caterpillars, grasshoppers and cicadas, and also bird eggs, nestlings and small frogs and lizards. Pesticides and other contaminants, collisions with towers and buildings during migration and habitat loss are all responsible for the decline of this species. Currently, the western population is a candidate for listing as a threatened species.

**BULLOCK'S ORIOLE** (*Icterus bullockii*) - In the past, Baltimore and Bullock's orioles have been considered one species, the northern oriole, due to their frequent hybridization within the Great Plains where they both occur. The vibrant orange and black plumage of older males and the duller orange females add a colorful dash to green cottonwoods woodlands. Orioles are found along woodland edges and riparian corridors. The female usually builds elaborately woven hanging nests in tall trees over a period of one to two weeks. Grasses, vines, bark and milkweed stems are used to form the outer part while horsehair, wool, feathers, cottonwood and willow down and plumes from milkweed seeds are used to line the inner bowl. Although new nests are built each year, other species may use an old oriole nest and orioles may recycle materials from established nests. The nest is kept extremely clean with parents removing eggshells and fecal sacs throughout the nestling period. Although brown-headed cowbirds are known to lay their eggs in oriole nests, adults usually eject these and very few cowbirds are raised in oriole nests. Squirrels, jays and owls may eat eggs and nestlings. Birds are often killed when they collide with towers and lighted buildings during migration or by domestic and feral cats. Use of pesticides can greatly diminish prey sources and poison the birds as well. During the breeding season, orioles eat caterpillars, grasshoppers, other insects, fruits and nectar. They can often be lured to feeding stations, which offer fruit or nectar feeders.

**WOOD DUCK** (*Aix sponsa*) - Deforestation, loss of wetlands and unlimited harvest at one time caused concern for the continued existence of this striking waterfowl species. Conservation measures and the adaptability of the species have encouraged its comeback. The wood duck is one of seven species in North America to regularly nest in natural tree cavities (it does not excavate its own nest). Its slim body allows it to use cavities made by pileated woodpeckers and its large eyes assist in flying through the tree canopy. Optimal habitat includes creeks, rivers, marshy areas with abundant vegetative cover and a large plant and invertebrate food base. Wood ducks have a series of calls used for a variety of purposes as well as a whistling sound made by their wings when they fly. Wood ducks face predators throughout their life. Eggs, young and adults are subject to predation by snakes, owls and other birds, and many different mammals including mink, raccoon and fox squirrel. It is the only species of North American waterfowl that regularly

produces two broods of young a year.

**NORTHERN CARDINAL** (*Cardinalis cardinalis*) - This eastern species has expanded its range west and north and has been introduced into California, Hawaii and Bermuda. Shrubby areas, hedgerows and forest edges are typical habitat. There are records of northern cardinals appearances across the Great Plains which suggest they followed the increase in riparian woodlands across the prairies. They are year-round residents. Nesting begins early and the first young may appear as early as April. Nest success is low and birds may re-nest several times and produce young through September. Highly territorial, cardinals often attack their reflection in windows and other reflective surfaces, trying to drive away "intruders" during the breeding season. Common visitors to bird feeders, cardinals eat seeds, fruits and insects.

**RED-BELLIED WOODPECKER** (*Melanerpes carolinus*) - This colorful woodpecker shows a variety of adaptations to its way of life. Woodpeckers have a long, cylindrical, highly maneuverable tongue, which is pointed and has barbs on the tip. This allows them to extend their tongues into crevices to search for and collect prey. Enlarged mucous glands make both the tongue stickier (to aid in prey collection) and keeps the nasal passages clear of dust and wood chips. Bone structure modifications in the head enable woodpeckers to use their bill for pecking, chiseling and drumming. This species has been expanding its range in recent history, probably following the expanding riparian corridors. This generalist and opportunistic feeder will eat invertebrates, mast, fruit, seeds, sap and occasionally nestlings and eggs of other bird species. Their predators include Cooper's hawks, black rat snakes and domestic and feral cats. Snakes, other woodpecker species and starlings often take their young and eggs. Nests are made in cavities in dead trees or limbs. Although the same cavity is seldom used every year for a nest, red-bellied woodpeckers will make successive cavities under or near a previous year's nest site. Red-bellied woodpeckers are colorful additions to an urban setting and can be enticed to a backyard bird feeder with suet and seeds. Because they usually do not migrate, they may stay year-round.