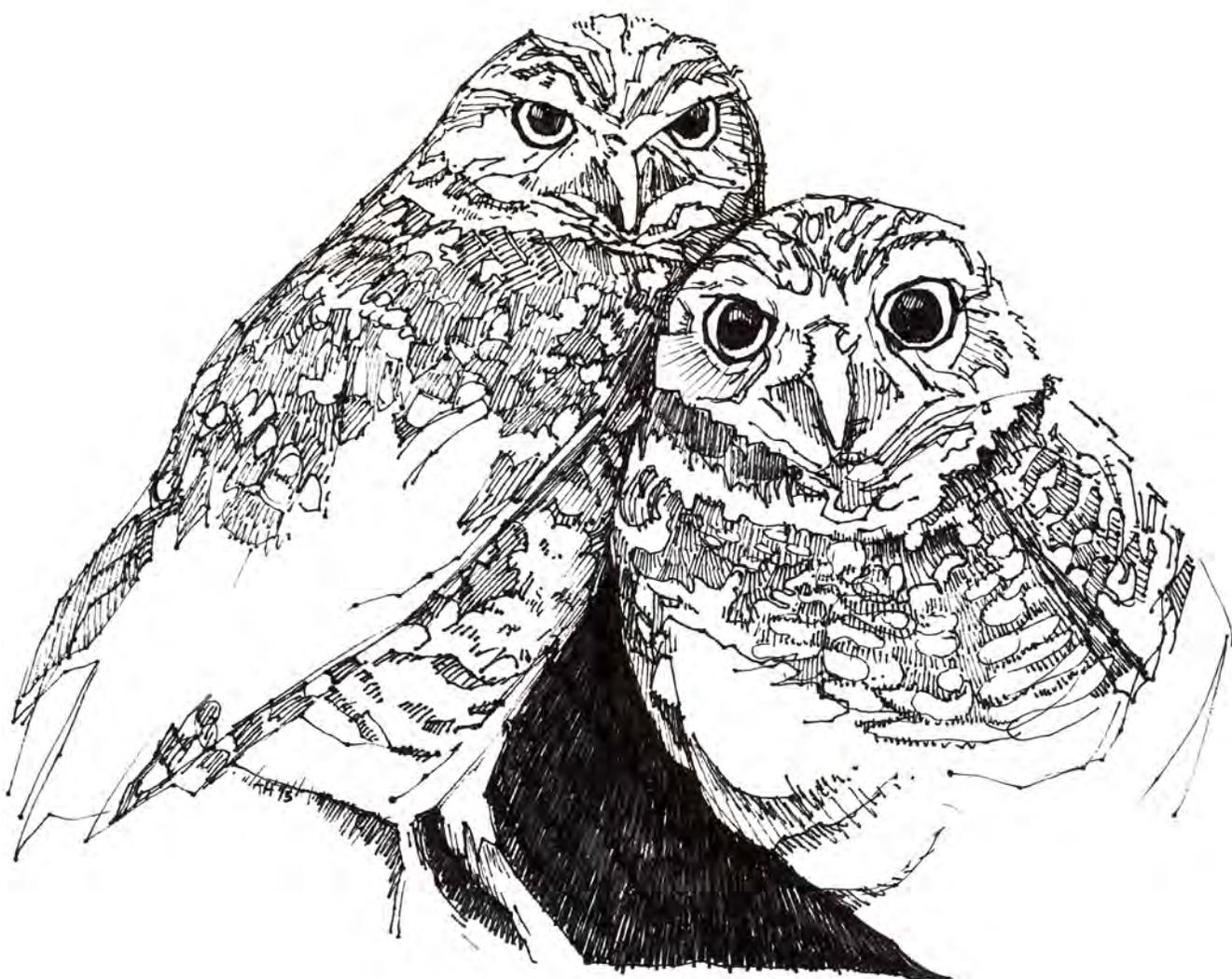


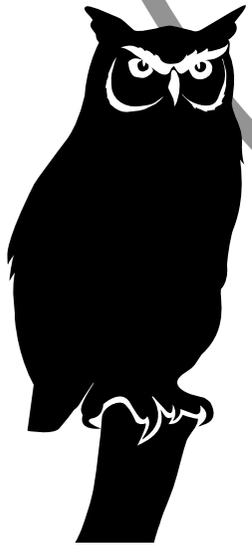
OWLS

of the Morley Nelson

Snake River Birds of Prey National Conservation Area

A Coloring Book





Owls of the Morley Nelson Snake River Birds of Prey National Conservation Area

A Coloring Book

This coloring book describes the seven species of owls that live in the Morley Nelson Snake River Birds of Prey National Conservation Area (NCA) - either part of the year or year round. We hope you have fun coloring and learning about these birds which are also called raptors or birds of prey.

This book will help you learn: (1) what owls look like when perched, (2) where owls like to live, (3) what owls like to eat, (4) what time of year you are likely to see them in the NCA, and (5) how their populations are doing. The glossary will help you understand some of the words that might be new to you. Once you learn about owls, try to spot as many of them as you can!



Burrowing Owl

Great Horned Owl on Cliff Face



The Morley Nelson Snake River Birds of Prey National Conservation Area

The Morley Nelson Snake River Birds of Prey National Conservation Area (NCA) was established in 1993 to protect a unique environment that supports one of the world's densest concentrations of nesting birds of prey, also called raptors. Falcons, eagles, hawks, owls and vultures occur here in unique abundance and variety.

Located along 81 miles of the Snake River in southwest Idaho, the NCA encompasses 485,000 acres of public land. Here the river lies within a deep canyon that is surrounded by a vast plateau. Cliffs towering up to 700 feet above the river provide countless ledges, cracks and crevices used as nesting sites by falcons, golden eagles, hawks, vultures, and great horned owls and barn owls. The trees and shrubs in the riparian areas along the river provide nesting sites for raptors such as long-eared owls, northern saw-whet owls, western screech owls, osprey, and northern harriers. Short-eared owls, burrowing owls and other raptors find nesting sites on the plateau. These habitats (cliff, riparian area, plateau) also support high numbers of prey animals.

The combination of ideal nesting habitat and the extraordinarily high numbers of prey make the NCA a place like no other for birds of prey. The area is actually a giant natural raptor nursery. Sixteen species nest here each spring; seven of these are owls. Eight other species of diurnal (day-time) raptors use the area during winter or pass through during fall and spring migrations.

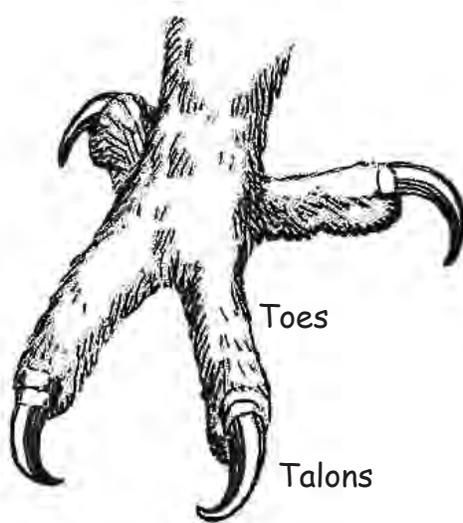
To learn more about the NCA and raptors, visit our website at www.blm.gov/id/st/en/prog/blm_special_areas/birds_of_preynca.html

What are Raptors?

All of the birds in this coloring book are nocturnal raptors - birds of prey that hunt at night - called owls. All raptors, both diurnal and nocturnal, are predators meaning they hunt, capture, kill and eat other animals for food. Although the diet varies from species to species, all raptors are meat eaters. They are strictly carnivores. There are many other carnivorous and predatory birds, but not all of them belong to the group we call raptors. We distinguish raptors from other birds because they have:

1. **Strong, powerful feet with sharp curved talons.** Raptors' feet are perfectly designed to catch and kill prey, and to defend themselves.

The length and size of a raptors' toes, and the curvature and thickness of its talons are related to the type of prey it hunts. Most birds of prey have three toes pointing forward and one pointing backward. Owls and osprey can move their outer front toe to the back giving them a two front and two back toe arrangement.



owl foot

2. **Sharp, hooked beaks.** All raptors have beaks curved at the tip with sharp cutting edges to rip and tear apart their prey. Their beaks are also strong enough to break the bones of their prey.



Great Horned Owl

3. **Keen eyesight.** Raptors can focus on objects that are far away from them. With large forward facing eyes, raptors have a large area of binocular vision - like humans. This gives raptors very accurate depth perception which in turn aids them in catching moving objects (prey).

Nocturnal raptors (owls) have an added advantage of remarkable night vision. They can see in very low light conditions.



Short-eared Owl

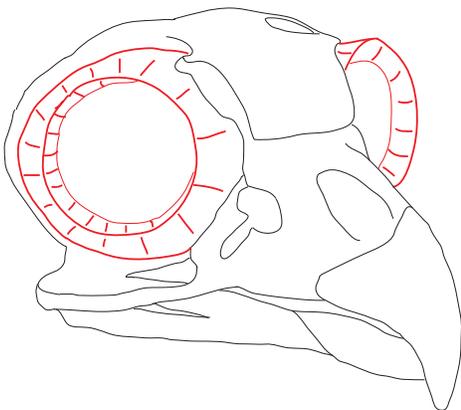
What Are Owls?

Owls are raptors that are adapted to hunting at night. Some owls are completely nocturnal, meaning they start hunting a half-hour after the sun sets and stop hunting a half-hour before the sun rises. Other owls are crepuscular, meaning they hunt mainly at dusk and at dawn. Owls also can be seen hunting during the day. This is particularly true during the breeding season when there are lots of young owlets to feed.

Owls have three special adaptations for nocturnal hunting:

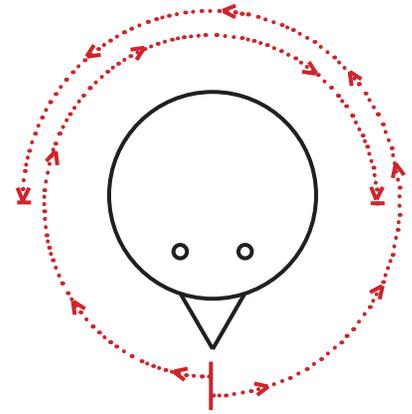
1. Remarkable Night Vision. While owls can see perfectly fine during the day, it is their night vision that makes them unique. With eyes jam packed with light sensitive, rod-shaped cells, owls can see every leaf and twig on even the darkest night. Most owls have limited color vision as these "rods" do not react well to color. Owls primarily see in shades of gray.

An owl's eye is quite large compared to the size of its head due to the large number of rods. Their eyes are actually the same size as human eyes and take up about 30% of the space in their skull. If our eyes were on the same scale to our bodies, our eyes would be as large as tennis balls!

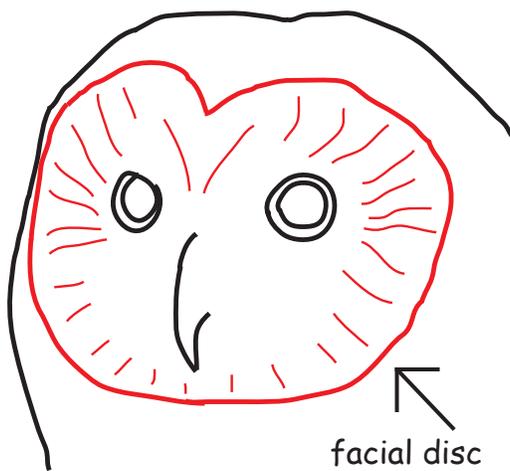


Because of the large eye size, there is no room for eye muscles in an owl's skull and its eyes are held in place by bony structures call sclerotic rings (shown in red). Due to these bony rings, an owl cannot move its eyes - it can only look straight ahead!

To compensate for this lack of eye movement, owls have the adaptation of turning their head instead. They can turn their head 3/4 of the way around their body or 270 degrees - both ways - in order to see around them.



2. Exceptional Hearing. Owls have extraordinary hearing. In fact, an owl can hear the squeak of a mouse one-half mile away. Like all birds, owls' ears are located on the side of the head with the ear openings covered by feathers. In owls, these ear openings can differ in shape and size depending on the species.



Like other birds, owls lack the fleshy outer ear that humans have, which catches sounds so we can hear better. Owls make up for the lack of an outer ear by having a "facial disc" on the front of their face. This collection of relatively flat, forward facing feathers helps direct sound to the owl's ears. The owl can adjusted these feathers to allow it

to focus at different distances and to locate prey by sound alone - under snow, under grass, under plants.

An owl is able to tell the direction a sound is coming from (left or right) because of the very small time difference in which the sound is heard in the left and right ear. The owl then turns it's head so the sound arrives at both ears at the same time - then it knows the prey is right in front of it!

Some owl species have asymmetrical ear openings (one ear is higher on the head than the ear on the other side). An owl with asymmetrical ears can also tell if the sound is higher or lower than itself - again because of the very small time difference in which the sound is heard in each ear.

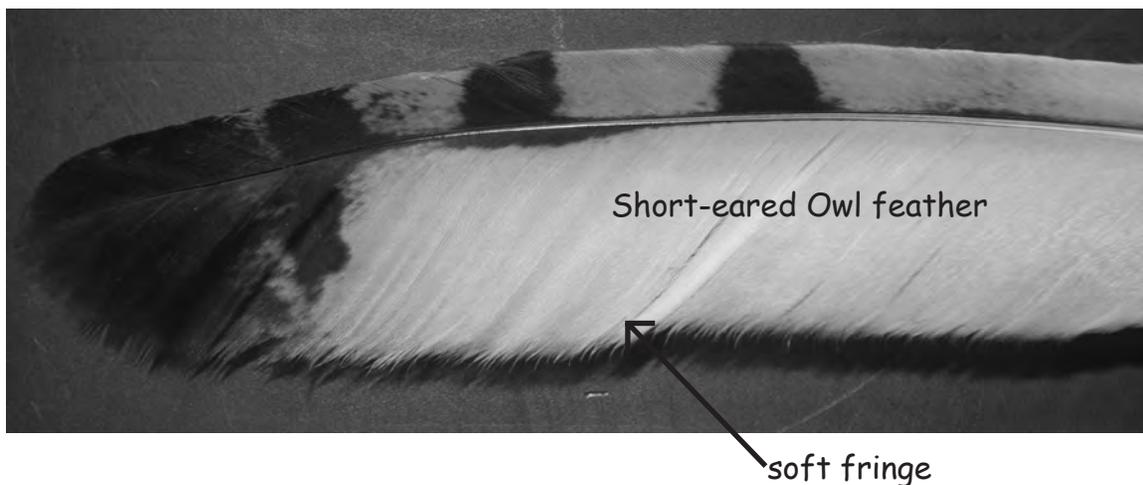
Once an owl has determined the direction of its prey, it will fly toward it, keeping its head in line with the direction of the last sound the prey made. If the prey moves, the owl is able to make corrections mid flight.

3. Silent Feathers. Owls are known for their ability to fly very very quietly. There are several features of their feathers that allow them to do this.

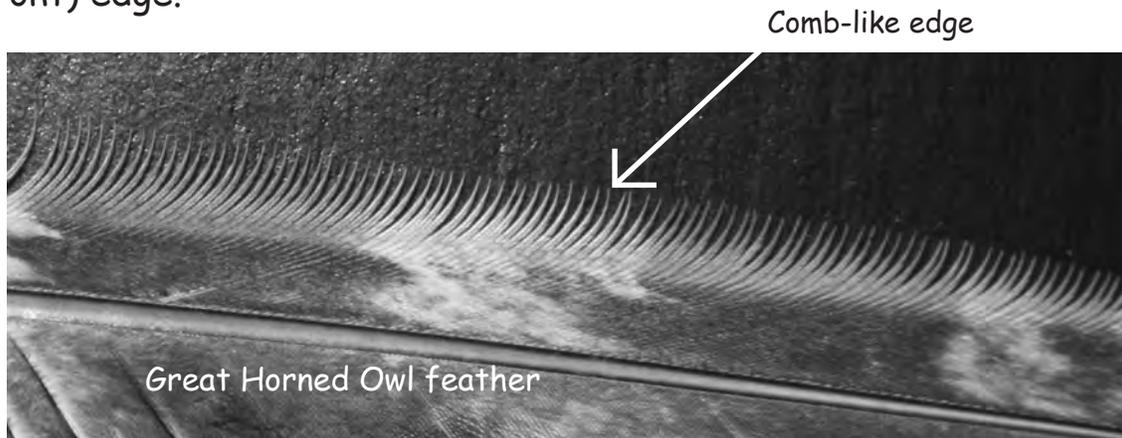


An owl's flight feathers (tail and wing feathers) have a dense, soft, and velvety upper surface. This downy surface absorbs a lot of the sound the wing makes in flapping.

In addition, these feathers have a soft fringe on the trailing (back) edge,



and a few of the feathers at the very end of the wing have a comb-like leading (front) edge.



Normally in flight, air rushes over the surface of a bird's wing, churning as it flows off the trailing edge of the wing. This makes noise! But with an owl's wing, the comb-like leading edge and the soft fringe on the trailing edge break the churning caused by each wingbeat into hundreds of smaller churns. This muffles the sound of the air rushing over the wing surface and allows the owl to fly silently.

Silent flight lets an owl sneak up on its prey. With quiet wings, the owl can use its sensitive hearing to locate prey and ... the prey doesn't hear the owl coming!

Conservation Status of Raptors

All birds of prey, including owls, are protected by the Migratory Bird Treaty Act. The Act "makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter or offer for sale, purchase, or barter, any migratory bird, or the parts" (feathers, wings, etc), "nests, or eggs of such a bird except under terms of a valid permit issued pursuant to Federal regulations." The Act further defines "take" to mean "pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such behavior."

However, even with this Act, humans, indirectly and directly, remain the greatest threat to owls primarily through:

Habitat loss due to agricultural development, livestock grazing, and urbanization. This is primarily a loss of nesting sites ("shelter"), reduction of prey populations ("food"), and enough "space" to fulfill these needs.

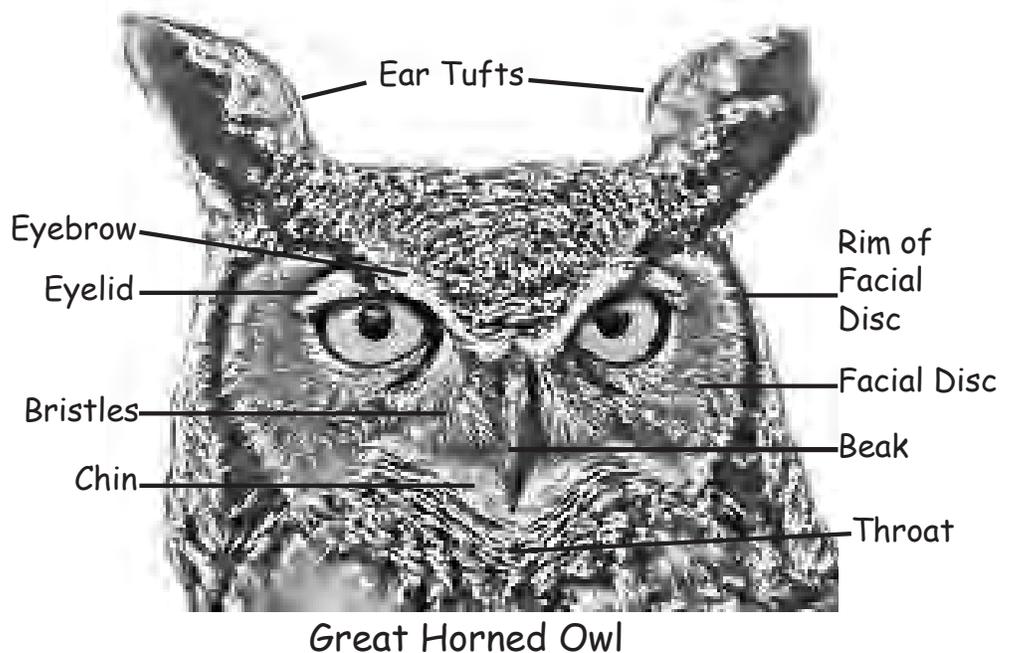
Habitat alteration due to wildfire.

Collisions with vehicles.

Predation by domestic animals such as cats and dogs.

Owl Parts

In this coloring book, the field marks of each owl are describe. You can use the following "maps" to locate these field marks if you are unsure.



I am an adult **Barn Owl**.

My scientific name is *Tyto alba*

Field Marks

I am a medium sized owl. My back and wings are gold to beige; heavily marked with white, black and gray. My chest and belly are white with spotting. My heart-shaped facial disc is white with orange brown borders. My beak is off white. My eyes are relatively small for an owl and are dark brown to black. I lack ear tufts. My toes are pale gray; my talons are dark gray.

Habitat

I am one of the most widespread of all the owls. I am found in North, Central and South America; Europe, Africa, India, SE Asia and Australia. I prefer open habitats with some trees. I nest in natural cavities in trees, cliffs or caves, or in man-made structures such as nest boxes, barns, and chimneys.

Food

I like to eat small mammals such as mice, kangaroo rats and the young of larger mammals - rats, gophers, rabbits. I occasionally eat birds. I hunt mostly at night, from one hour after sunset to one hour before sunrise, but I hunt in daylight too. My ability to locate prey by sound is the most accurate of any animal tested. I can capture prey hidden by vegetation or snow.

When you'll see me in the NCA

I am seen in the NCA year-round. You may see me peering from cavities in cliffs, openings in haystacks, roosting in thick groves of trees, or in barns and abandoned buildings. If you are out at night you may hear me hiss or scream. I do not hoot.

Conservation Status

My population is declining in North America and Europe. Though not on the U.S. Endangered Species list, a number of states list me as endangered, threatened, or a species of special concern. Habitat loss and collisions with vehicles are the biggest causes of my decline.

Barn Owl



Owls

Nocturnal raptors of various sizes.



Barn Owl



Great Horned Owl



Burrowing Owl



Long-eared Owl



Northern Saw-whet Owl



Short-eared Owl



Western Screech Owl

I am an adult **Burrowing Owl**

My scientific name is *Athene cunicularia*

Field Marks

I am a small owl with no ear tufts. My back, wings and head are spotted pale and creamy brown. I have an oval facial disc, framed by bold white eyebrows, and a prominent white chin stripe. My chest and upper belly are creamy white with broad brown bars/spots. My lower belly is white. My eyes are bright yellow. My beak is creamy. My eyelids are grayish. I have bristle-like feathers on my legs and feet.

Habitat

I am found in North, Central and South America. I prefer open well drained grasslands, deserts, and prairies. I also use golf courses, vacant lots and other open areas within cities. I nest underground in the abandoned burrows of other animals like the badger and often line the nest with dried cow pies. I also use artificial burrows that people have placed in the ground for me.

Food

I like to eat insects, small mammals and birds but will also eat reptiles and amphibians. I am crepuscular - hunting mainly at dusk and at dawn - but will hunt any time. I tend to hunt insects during the day and small mammals at night.

When you'll see me in the NCA

I am seen in the NCA from March through August. Look for me on the ground or on fence posts during the day. I like open areas where I can see across open country. You may hear me calling in the spring "koo-coo" repeated several times. I imitate a rattlesnake sound to scare off unwanted visitors to my burrow.

Conservation Status

My population is declining. In the U.S., I am listed as endangered, threatened, or a species of special concern in most states where I live. The BLM considers me a Watch List species in Idaho. Habitat loss, declining prey populations, predation and collisions with vehicles are the biggest causes of my decline.

Burrowing Owl



I am an adult **Great Horned Owl**

My scientific name is *Bubo virginianus*

Field Marks

I am the most widespread, one of the most powerful and the only large owl with prominent ear tufts in North America. My color varies from whitish to dark brown, but my markings remain the same. My underside has thin brown bars that become blotchy on my chest. My throat has a bold white patch. I have a white mustache and white to tan along the sides of my bill into my eyebrows. My back is darkly mottled with dark bars on my wings and tail. My facial disc is bordered with black. My large eyes are lemon yellow. My beak is black but hidden by bristly feathers. My feet are feathered to the end of my toes. My talons are black.

Habitat

I am found over most of North and Central America and some of South America. I live from sea level to 11,000 feet. I'm equally at home in desert, grassland, suburban, agricultural and forest habitats. I do not build my own nest but use nests of other birds such as hawks, crows, and herons. I also nest in tree hollows, cliffs, caves, abandoned buildings or artificial platforms.

Food

I eat a wide variety of animals but small to medium sized mammals and birds make up most of my diet. I prefer rabbits and hares. I'm one of the few animals that will kill and eat skunks. I hunt primarily at dusk and at night.

When you'll see me in the NCA

I am seen in the NCA year-round. During the day look for me roosting in trees, and on cliffs. You may hear me at night making a deep Hoo Hoo HooHoo.

Conservation Status

I appear to be widespread but thinly distributed over my range. My only natural enemies are other Great Horned Owls and Golden Eagles.

Great Horned Owl



I am an adult **Long-eared Owl**

My scientific name is *Asio otus*

Field Marks

I am a medium sized owl with long ear tufts. My back and wings are dark brown mixed with white, black, orange, beige and gray. My undersides are gray and beige with dark brown streaking and barring. My facial disc is light rust circled with black that often has a white border. There is a dark vertical stripe through each eye. I have white eyebrows and a white chin patch. My bill is black. My eyes are bright yellow. My eyelids are black. My legs are feathered to the end of my toes. My talons are black.

Habitat

I am found in open and sparsely forested habitats in North America, Europe, Asia, and northern Africa. I nest in wooded or brushy areas but I hunt in adjacent open areas such as grasslands, farms, and shrub steppe deserts. I do not build my own nest but use the abandoned stick nests of other birds. I sometimes nest in natural cavities in trees or cliffs, or on the ground.

Food

I like to eat small mammals and some songbirds. Mice and voles are my favorite though I also eat squirrels, bats, and cottontail rabbits. Sometimes I'll eat insects, frogs and snakes. I hunt from dusk to just before dawn. I can catch prey in complete darkness.

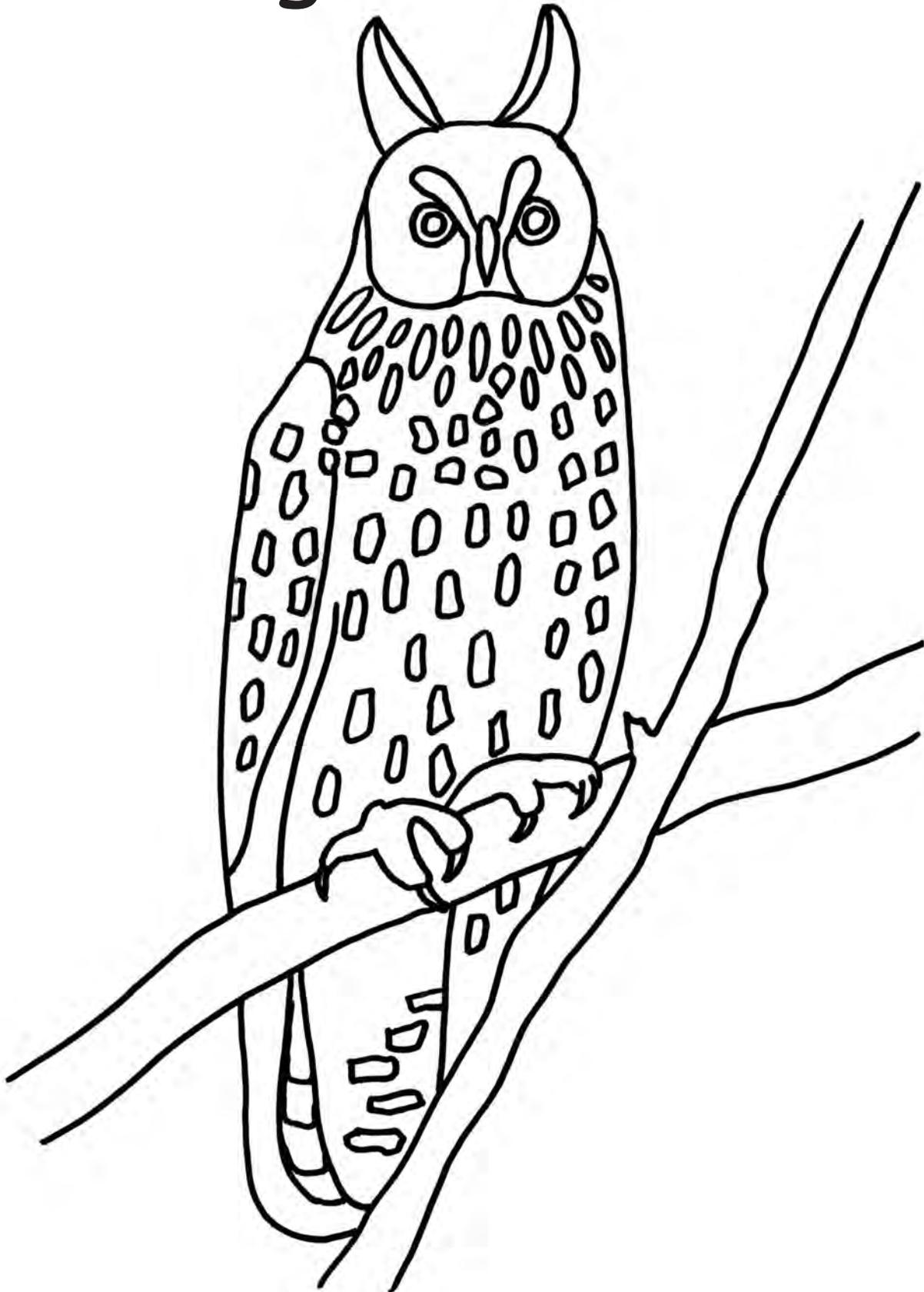
When you'll see me in the NCA

I am seen in the NCA from November through June. Look for me in thick groves of trees and shrubs along the Snake River. My call in late winter/early spring is a single hoot followed by a pause. This can be repeated for a long time - hoot - pause - hoot - pause - hoot - pause

Conservation Status

My population appears to be stable but in some areas of North America my population has declined because of habitat loss. In the U.S. I am listed as endangered, threatened, or a species of special concern in numerous states.

Long-eared Owl



I am an adult **Northern Saw-whet Owl**

My scientific name is *Aegolius acadicus*

Field Marks

I am one of the smallest owls - about 7-8 inches long. My large, round head lacks ear tufts. My facial disc is round. There is white above, below and between my yellow eyes. My back, wings and tail are brown with white spots. Underneath I'm white, broadly striped with brown. My legs are feathered to my talons. My beak and talons are black. When I was younger I looked much different. In fact you'd think I was a totally different species. My facial disk was dark brown with a conspicuous Y-shaped white marking between my olive green eyes. I only had white markings on my wings and tail, and my unmarked breast was brown and my belly was creamy brown.

Habitat

I am found in North America - from Alaska to the central highlands of Mexico. I prefer to live in coniferous forests but I can also be found in deciduous woodlands, especially along rivers. I nest in tree cavities and in nest boxes put up by people.

Food

I like to eat small rodents such as mice, voles, shrews, and the young of gophers, chipmunks and squirrels. I will also eat small birds and some insects. I hunt at night, from about 30 minutes after sunset to about 30 minutes before sunrise.

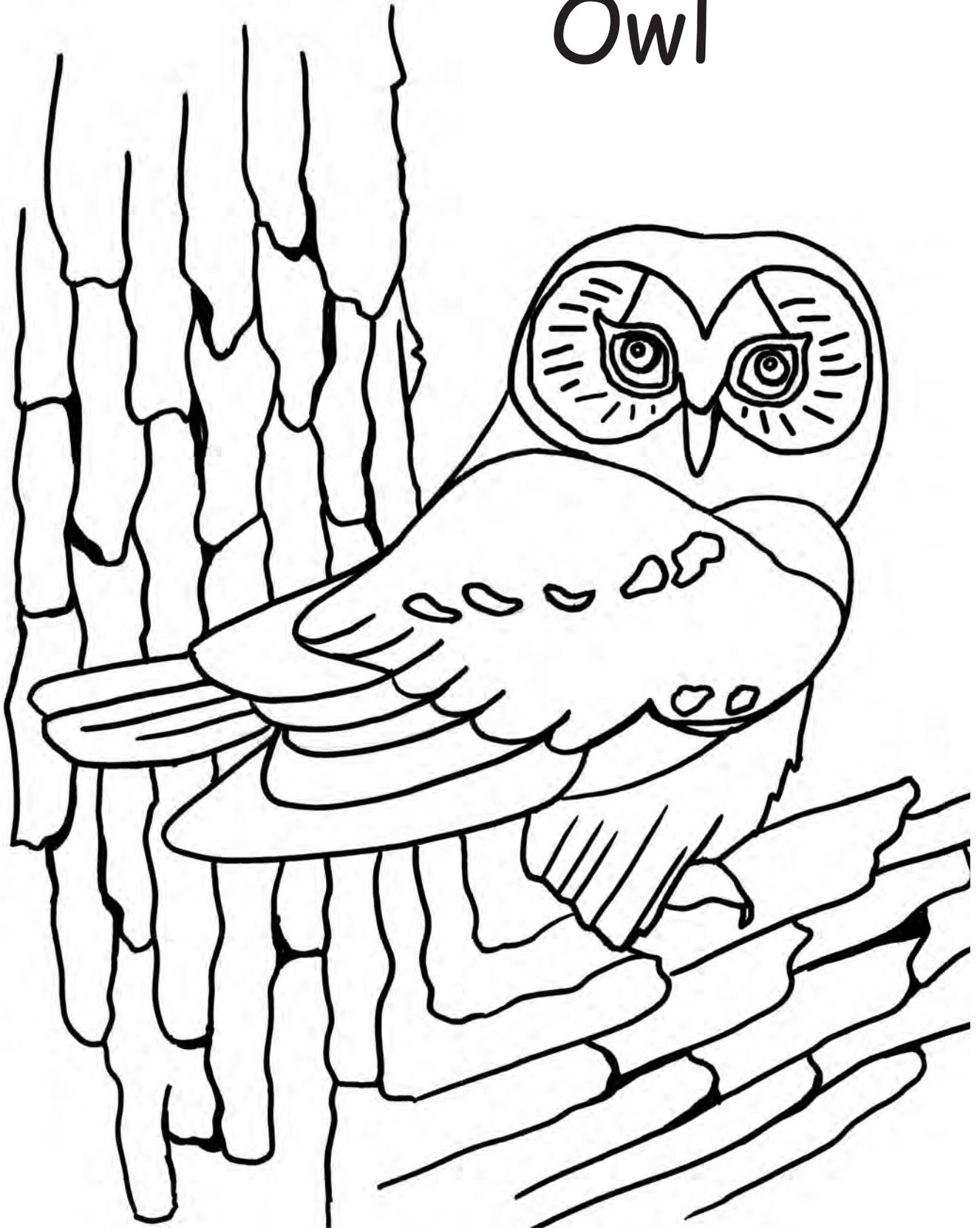
When you'll see me in the NCA

I am seen in the NCA from February through May. Look for me in riparian areas along the Snake River. I like to hide in the very thickest habitat especially in evergreen trees. You may hear me calling in the spring with a single "toot" repeated over and over for long periods of time.

Conservation Status

Humans do not have a good handle on the status of my population but it is probably declining slowly due to habitat loss.

Northern Saw-whet Owl



I am an adult **Short-eared Owl**

My scientific name is *Asio flammeus*

Field Marks

I am a medium sized owl with a round head and short small ear tufts that sometimes lay back against my head and are not seen. My facial disc is whitish with a brown rim. Around my lemon yellow eyes, the feathers are dark brown. My eyelids are black. I have white bristly feathers over my nose. My chin is white. My upper parts are spotted - brown with tan mottling. Underneath, I am white to light tan with brown vertical streaking. My legs are feathered to my toes. My feet are yellow. My beak and talons are black.

Habitat

I am found on every continent except Australia and Antarctica. I prefer open habitats such as tundra, prairies, grasslands, agricultural areas and shrub steppe deserts. I nest on the ground - typically a scraped out depression lined with grass and feathers.

Food

I like to eat small mammals (mice, voles, moles and rabbits) and birds (meadowlarks, blackbirds, shorebirds and small gulls). I will also eat insects. I am crepuscular - hunting at dusk and at dawn, although you'll sometimes see me during the day.

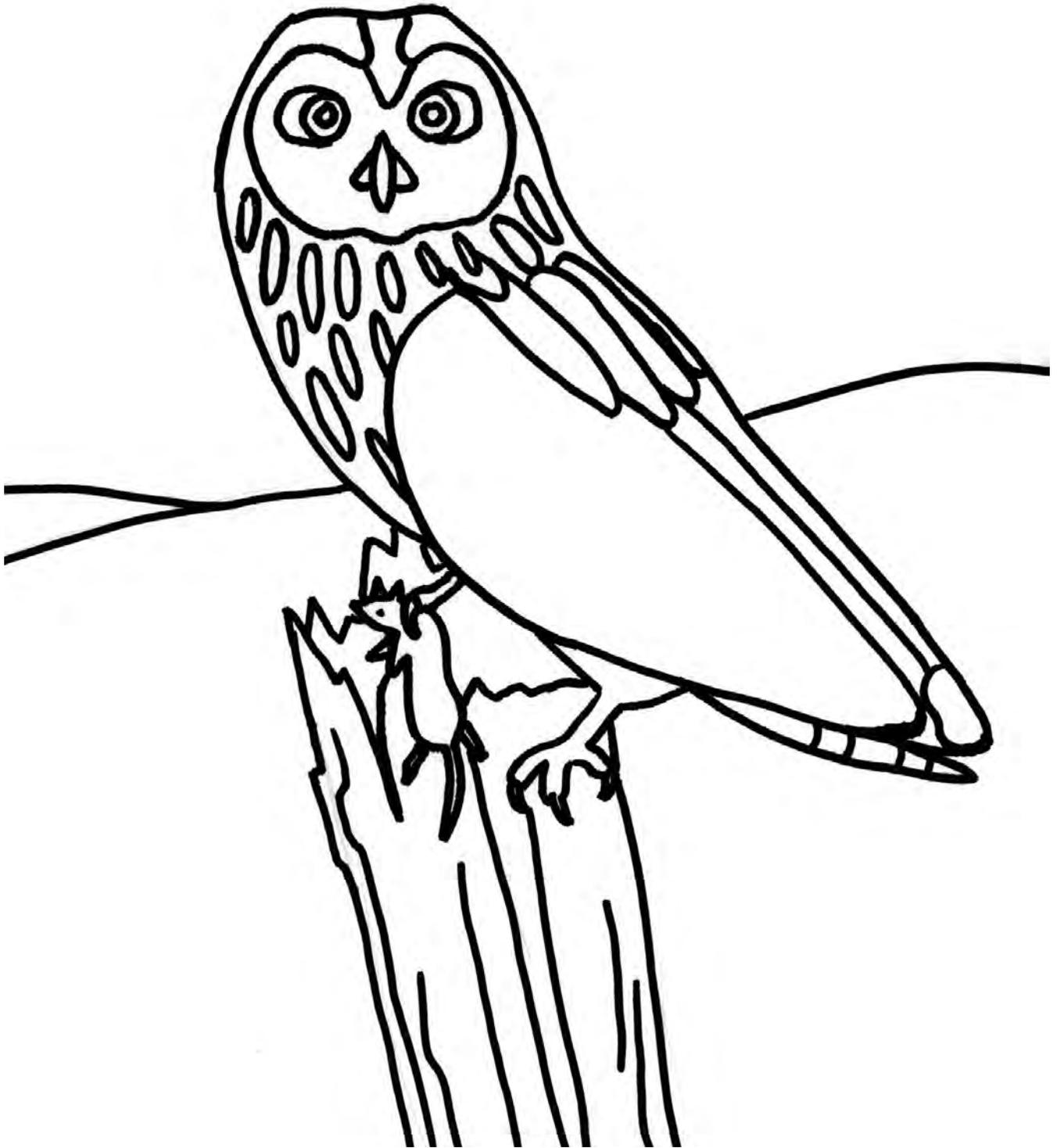
When you'll see me in the NCA

I am seen in the NCA year-round. I like to roost on the ground in overgrown fields and marshes. You probably will hear my hunting call which is a soft scream. In the spring you may hear me make a soft hoo-hoo-hoo-hoo call.

Conservation Status

My population has declined in many areas of North America. In the U.S. I'm listed as endangered or a species of special concern in a number of states. In Idaho, the BLM considers me to be a Watch List species. Habitat loss is a key factor in my decline.

Short-eared Owl



I am an adult **Western Screech Owl**

My scientific name is *Megascops kennicottii*

Field Marks

I'm a small owl with ear tufts that may not be visible. My colors vary but most often I'm gray to brownish. My back and wings are gray or brownish with dark streaks and fine white horizontal bars. My chest and belly are whitish with heavy dark vertical streaks. My facial disc is grayish with thick black borders on the sides. My eyes are lemon yellow. My beak is gray to black. My feet and toes are feathered. My talons are black.

Habitat

I am found in western North America from SE Alaska to western Texas and NW Mexico. I like riparian deciduous forests but am also found in semi-open country with scattered bushes and trees. I nest in cavities of trees, and man-made nest boxes.

Food

I like to eat a wide variety of small animals: rodents, birds, amphibians, reptiles, fish, insects, slugs, snails, and worms. What I eat depends on the time of year and what is readily available. I am nocturnal - I begin to hunt about 30 minutes after sunset and stop about 30 minutes before sunrise.

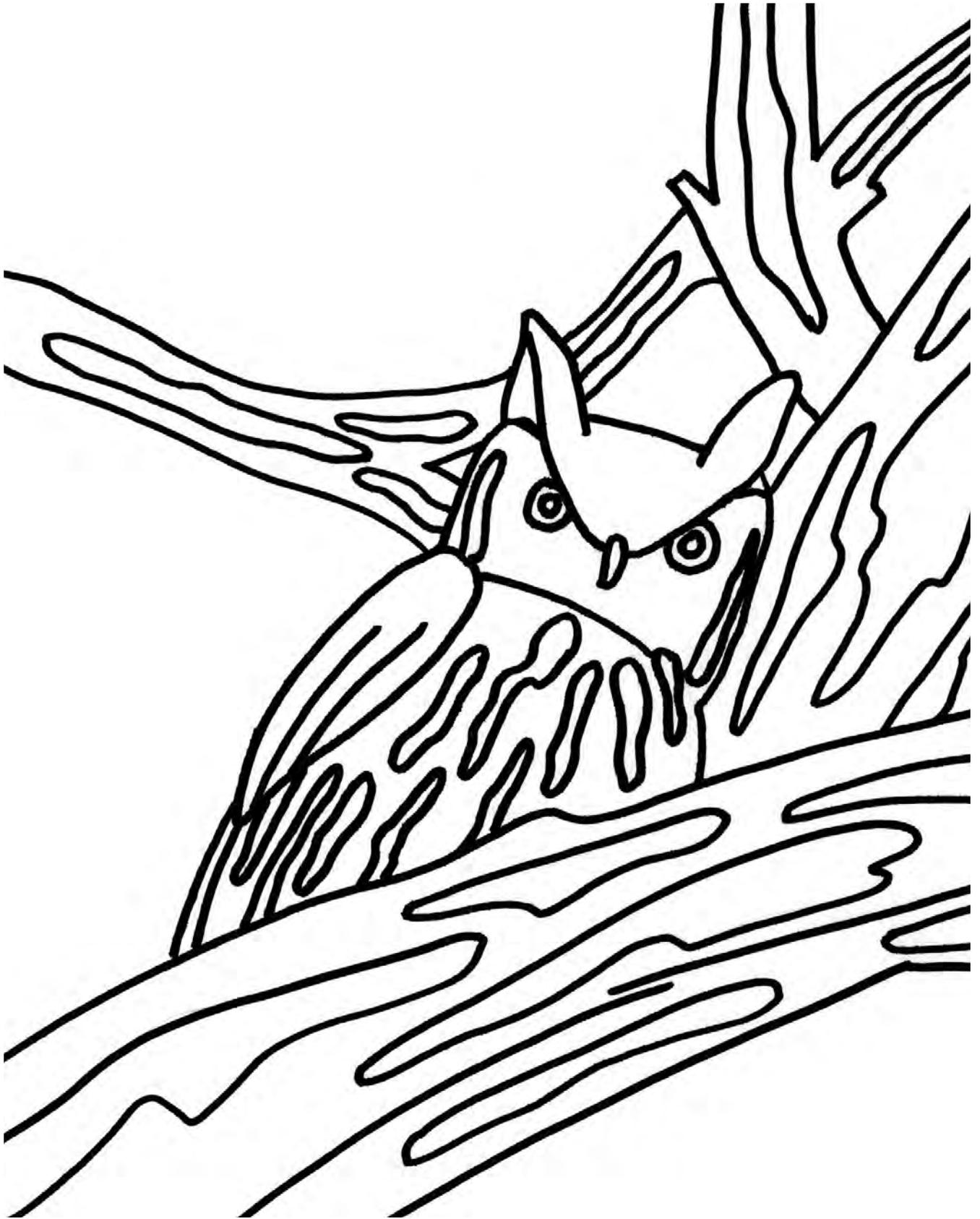
When you'll see me in the NCA

I am seen in the NCA year-round. I like to roost in tree groves or tall shrub thickets along the Snake River. My call is a series of hoots that get faster and closer together toward the end - just like a bouncing ball.

Conservation Status

My population is generally thought to be stable but habitat loss is having a negative impact. In Canada, one subspecies is listed as endangered, and another subspecies is listed as a species of concern. Removal of riparian forests in drier regions like SW Idaho is a concern.

Western Screech Owl



Glossary

Bureau of Land Management (BLM) - an agency of the United States Department of Interior. The BLM manages public lands for a variety of uses such as energy development, livestock grazing, recreation, and wildlife habitat, while protecting a wide array of natural, cultural, and historical resources.

Carnivore - an animal that eats mostly meat.

Coniferous Forests - a forest with conifer trees. These trees have thin needle-like leaves and cones. Pine and fir are examples of conifer trees.

Crepuscular - describes animals including birds that are active at dusk and dawn, when the light level is low.

Diurnal - describes animals including birds that are active during the day.

Ear Tufts - Many owls have tufts of feathers on the tops of their heads which are often referred to as "horns" or "ears." It is thought that these tufts may play a role in non-vocal communication and in camouflaging the bird.

Endangered Species List - The Endangered Species Act is a law to protect and recover imperiled species and the ecosystems upon which they depend. Under the Act, species may be listed as either endangered or threatened. "Endangered" means a species is in danger of extinction throughout all or a significant portion of its range. "Threatened" means a species is likely to become endangered within the foreseeable future.

Facial Disc - a collection of relatively flat, forward facing feathers on the face of some birds - most notably owls - that helps direct sound to the bird's ears for exceptional hearing. The ears are located at the sides of the head, behind the eyes, and are covered by the feathers of the facial disc. The bird can control these feathers to focus sound, allowing them to fine-tune the location of prey.

Flight Feathers - the long feathers of the wing and tail.

Habitat - the environment in which a plant or animal lives, such as a forest.

Imperiled Species - a species experiencing significant declines in population or habitat and in danger of regional or local extinctions in the foreseeable future if factors contributing to its decline continue.

Leading Edge - The front edge of a bird's wing.

National Conservation Area - National Conservation Areas (NCAs) are designated by Congress to protect areas which feature exceptional scientific, cultural, ecological, historical, and recreational values. These areas are managed by the Bureau of Land Management.

Nocturnal - describes animals including birds that are active at night.

Owl - a raptor with excellent eye sight, extraordinary hearing, and silent flight that hunts other animals usually at night.

Perennial Plants - plants that live for more than two growing seasons

Primary Feathers - the feathers on the outside half of the wing.

Range - the geographic area in which a species normally lives.

Raptor - a bird of prey with powerful feet, talons, and sharp hooked beak.

Riparian Areas/Forests - the dense stands of trees and shrubs that grow along rivers and streams.

Sclerotic Rings - bony rings around an owl's eyes which hold them in place.

Sensitive Species - native species whose population numbers are in decline putting the continued viability of the species at risk across its range.

Shrub Steppe Desert - a grassland which has sufficient rainfall/snow to support a cover of perennial grasses and/or shrubs. The habitat of the NCA is this type of desert.

Species of Special Concern - a native species that is either low in number, limited in distribution, or has suffered significant habitat loss.

Subspecies - A subdivision of a species consisting of an interbreeding, usually geographically isolated population of organisms.

Trailing Edge - The back edge of a bird's wing.

Watch List Species - A species whose current population or habitat information suggests that it may warrant sensitive species status in the future.

Raptor Websites

Here are some websites to help you explore owls and other raptors in more detail.

www.owling.com/

Information on North and Central American owls with both biology and multimedia sections.

www.owlpages.com/

Information on species, photos, sounds, and other information about owls.

www.blm.gov/id/st/en/prog/blm_special_areas/birds_of_preynca.html

The website for the Morley Nelson Snake River Birds of Prey National Conservation Area. Learn more about raptors and the best time of year to visit the area.

www.peregrinefund.org/

The Peregrine Fund is a non-profit organization based in Boise ID which is dedicated to saving birds of prey from extinction. View their "Explore Raptors" section to learn more about birds of prey or visit the Velma Morrison Interpretive Center in Boise.

<http://ibo.boisestate.edu/>

Intermountain Bird Observatory is on top of Lucky Peak approximately 20 miles from downtown Boise. Songbird and owl banding, and raptor watching occur here from mid-July to late October. Visitors are welcome.

www.allaboutbirds.org/

This website by The Cornell Lab of Ornithology covers all types of birds.