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OWL

A YEAR IN THE LIVES OF NORTH AMERICAN OWLS



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Introduction: The Owl's Message

They stir at the magic hour, that otherworldly time when golden light casts long shadows at twilight. As you near the forest or the field, you may hear their haunting calls.

You do not find owls—owls find you. Their camouflage conceals them until you catch a fleeting glimpse of broad, soft wings illuminated by the setting sun or, more likely, the moon. An owl may alarm you in the darkness as it flies inches from your face without a sound. Perhaps you marvel at the way it hovers over a patch of snow, then dives to capture a vole it cannot see. Or you may feel ill at ease at the way it thrives in the dark hours, making its ghost-like calls.

The face startles: its large, golden eyes are wide set in a disk-shaped face above its hooked bill. Perched on a low fir branch, the owl slowly turns its oversized head more than two hundred degrees to explore its surroundings, then stops, giving you an ambivalent stare.

But we do not share that ambivalence. Since the beginning of recorded time, people throughout the world have held owls in great, although not always positive, esteem. Owls have been associated with wisdom and protection as well as considered bad omens and messengers of death. They have been immortalized in art from the earliest cave paintings to the folklore of every place where people have encountered owls, including Greece, Rome, Egypt, India, Australia, Arabia, Africa, China, and Japan, and among

Iñupiat, Inuit, Hopi, Inca, and other native peoples of the Americas. Part of the owl's mystique comes from its association with the dark and all that the unseen represents for us. Are owls, in some way, portentous signs? Do they have a powerful message to share?

Every encounter I have had with an owl has been memorable. As a boy, I constantly scoured the woods, fields, and ponds for wildlife, tantalized by the thought of what animals I might find. Owls were beyond my expectations, since I imagined them roaming far wilder, inaccessible places while I was asleep. When our paths finally crossed, it was momentous.

The Snowy Owl that perched atop a telephone pole near my boyhood home as I arrived home from school one foggy afternoon felt like a singular gift. Several years later, my younger brother and I came upon a lifeless Great Horned Owl, which entranced us with its huge, sharp talons and long ear tufts. I noticed flashes of owls illuminated by headlights at night. These unexpected encounters with these striking creatures made owls seem even more mysterious.

My experience as a naturalist grew, and I became compelled to learn about all nineteen North American owl species to be found in the United States and Canada. (Although Mexico is technically part of North America, this book focuses on only those species to be found in the United States and Canada.) I discovered that many were

While the Great Gray Owl's appearance is mysterious and compelling, its distinctive facial disk is strictly practical: It funnels sound to the owl's offset ears, allowing the owl to more precisely locate prey using hearing alone.



GAINING INDEPENDENCE

Young owls must learn to fly, hunt, and become independent before winter, but they must first leave the protection of the nest. Each owl's habitat at this vulnerable juncture must enable them to leave without injury, remain hidden, and move out of the reach of predators as they build their strength and survival skills.

As nestlings grow, the begging calls and the scent of decaying food and waste make the nest more obvious and vulnerable, which can attract the attention of predators. There is a tenuous trade-off between the risks of the owls staying in the nest too long, and therefore being discovered by predators, versus leaving too early, before they can survive on their own. Owls that nest in woodpecker cavities or other natural cavities on the faces of tree trunks and cacti are most secure, and they often leave at about four weeks old, when they can, or are very close to being able to, fly. Owls that nest on the ground leave the earliest, between two and three weeks old. Platform nesters are often high off the ground, but they are often visible from the air and sometimes from the ground, so they normally leave at three to five weeks, when they can glide or at least have some buoyancy to their fall. Quite simply put, young owls leave at the time that is generally safest.

I refer to this step in the process of gaining independence as “leaving the nest” rather than “fledging.” Fledging is considered by many to be the moment when the young bird gains flight,

A juvenile Long-eared Owl spreads its wings in order to look more formidable to potential predators.



{ left } A Northern Hawk Owl nestling makes a bold, flapping leap from the top of a thirty-foot snag to the forest floor below.

{ right } Six days after leaving the nest, a Northern Pygmy-Owl fledgling hangs from a Douglas fir branch that has tipped under the bird's weight.



NORTHERN SPOTTED OWLS AND THE PACIFIC NORTHWEST COASTAL FORESTS

The coastal forests of the Pacific Northwest are wet forests found along the Pacific Coast from the coastal redwoods of northern California north through the conifer forests of cedar, hemlock, and spruce west of the Cascade crest to Southeast Alaska.

The majority of Northern Spotted Owl nests in Oregon and Washington are in mature, closed-canopy forests that are between eighty and eight hundred years old, with most of the nest trees being at least one hundred forty years old and some up to 260 feet tall and 10 feet in diameter. These forests typically have plenty of large trees with natural cavities, snags, and coarse woody debris on the ground that provides cover for prey species.

Whereas Northern Spotted Owls prefer older forests, their success in these stands is related more to the structure of the forest, the prey base, and the absence of Barred Owls than it is to the age of the trees. Important structural components include giant tree snags for nesting and a multilayered canopy, which the owls use to regulate their body temperature. They may roost very low when it is warm to take advantage of the cooler air lower in the canopy; conversely, when it is colder, they roost higher in order to get out of that same cold air.

Washington and Oregon populations of Northern Spotted Owls west of the Cascades feed primarily on flying squirrels, whereas those in California and east of the

Cascades consume more woodrats. Studies show that owls require larger territories when they focus on flying squirrels as prey. Tree voles, red-backed voles, pocket gophers, snowshoe hares, mice, and brush rabbits are also important prey.

Northern Spotted Owl populations are precariously low. After experiencing a loss of anywhere from 80 to 90 percent of suitable habitat in the preceding hundred years, Northern Spotted Owls experienced a range-wide decline of 3.8 percent per year between 1985 and 2013. According to the most recent study (December 2015) Northern Spotted Owls showed significant declines in all three states (Washington, Oregon, California) and all study areas, with Washington experiencing the most significant declines (55 to 77 percent), and Oregon and California showing declines of between 31 and 60 percent, depending on the location. The only study areas that showed an increase in Northern Spotted Owls were the ones where Barred Owls were removed.

The primary reasons for this predicament are changes to quality habitat and the dramatic incursions from Barred Owls in their territories. Timber harvest has dramatically reduced the number of suitable nest sites and fragmented remaining suitable territories.

Barred Owls, the Northern Spotted Owl's larger and more aggressive eastern relatives, have greatly expanded their range, arriving in Northern Spotted Owl habitat in the 1970s. Since then, they have been increasingly replacing Spotted Owls in the best territories and on the best nest sites. Being more of a generalist, Barred Owl populations are denser, and some research shows that when they call, Spotted Owls fall silent, making it more challenging for them to bond with mates and breed. Meanwhile Barred Owls produce many more young and have a higher survival rate than Spotted Owls. Finally, the two species sometimes interbreed, creating "Sparred Owls," further diluting the gene pool.

Saving the Northern Spotted Owl requires protecting and connecting the remaining western old-growth forests. Barred Owls are being removed or eliminated in Northern Spotted Owl territory in a controversial experiment currently being conducted by the US Fish and Wildlife Service.

Protecting Northern Spotted Owl habitat will benefit other wildlife including the Marbled Murrelet, red tree

voles, Pacific fisher, the torrent and Pacific giant salamanders, and an entire ecosystem that also relies on the health of Pacific Northwest old-growth forests. The removal of Barred Owls will also benefit coastal Northwest populations of Northern Pygmy-Owls and especially Western Screech-Owls, whose populations appear to be taking a big hit from predation by Barred Owls in some areas.

Northern Spotted Owls were listed as "threatened" under the provisions of the US Endangered Species Act, and in 2015, the US Fish and Wildlife Service announced that it was considering reclassifying them as "endangered." The species is currently listed as "endangered" in Canada. Northern Spotted Owls west of the Cascades and in the Coast Range help assess the health of complex, structured old-growth forests.



A Northern Spotted Owl flies from a lightning-created scar in an ancient redwood.

[opposite] Northern Spotted Owls require mature conifer forests with abundant snags and complex structures. Clear-cuts and other over-harvesting still threaten their survival.

CONSERVATION STATUS: Considered sensitive in the United States, where five states assign special conservation status; and considered vulnerable in Canada where it is designated as a species of “special concern.”

GREAT GRAY OWL (*Strix nebulosa*)



DESCRIPTION: A large gray owl with a distinctive facial disk, and small yellow eyes; 25 to 33 inches long, with a wingspan of 54 to 60 inches.

SIMILAR SPECIES: Larger and grayer than the Barred Owl or Spotted Owl, with yellow rather than black eyes.

INTERESTING FACT: The longest owl in North America.

NORTH AMERICAN DISTRIBUTION AND HABITAT: A year-round resident of boreal forests of Canada, Alaska, and conifer and mixed-conifer forests of the western mountains. Boreal Great Gray Owls periodically irrupt south, east, or less commonly north in some winters, while some western birds move downslope.

NESTING: A platform-nesting owl that nests on broken-topped trees, mistletoe brooms, and stick nests of Northern Goshawks and other hawks; lays 1 to 5 eggs.

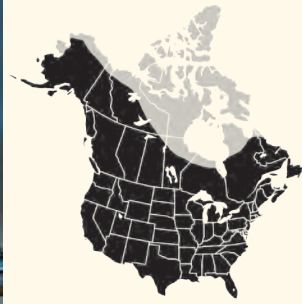
VOCALIZATION: Series of low *hoo* calls.

CONSERVATION STATUS: Sensitive in the United States, at the edge of its range, where Minnesota, Idaho, Wyoming, and New Mexico afford it special conservation status.

GREAT HORNED OWL (*Bubo virginianus*)

DESCRIPTION: A large, usually brown owl with distinctive ear tufts; 18 to 26 inches long, with a wingspan of 49 to 62 inches.

SIMILAR SPECIES: At rest, might be confused with the much smaller and thinner Long-eared Owl; whitish Arctic forms might be confused with heavily barred juvenile Snowy Owls.



INTERESTING FACT: Most widespread owl in North America, with significant regional color variation.

NORTH AMERICAN DISTRIBUTION AND HABITAT: Year-round resident throughout most of the United States and Canada south of the tundra.

NESTING: A cavity-nesting and platform-nesting owl that nests inside various natural and manmade cavities like cliffside lava tubes, caves, animal burrows, hollow or broken-topped trees and snags, abandoned buildings, and on nest platforms and stick nests of other birds; lays 1 to 5 eggs.

VOCALIZATION: Deep, foghorn-like *wbo-hoo-ho-ooo*, with variations.

CONSERVATION STATUS: Mostly secure and widespread, with some evidence of declines of specific US populations.

LONG-EARED OWL (*Asio otus*)

DESCRIPTION: A medium-size, long-winged, light-brown, owl with prominent ear tufts; 14 to 16 inches long, with a wingspan of 35 to 40 inches.

SIMILAR SPECIES: At rest with ear tufts up, it might be mistaken for the much larger Great Horned Owl. In flight with lowered ear tufts, it can be confused with the longer-winged and lighter-colored Short-eared Owl.



INTERESTING FACT: Roosts communally during the nonbreeding season with up to two hundred others, and sometimes with Short-eared Owls.

NORTH AMERICAN DISTRIBUTION AND HABITAT: Nests in stands of trees and hunts in adjacent farmlands, meadows, grasslands, and steppe of Canada, the interior West, the Southwest, Great Plains, parts of California, and parts of the eastern states. Winters south and east of these areas.

NESTING: A platform nester; uses the stick nests of magpies and other corvids and hawks; lays 2 to 10 eggs.

VOCALIZATION: A series of soft, low *hooo* notes, separated by a couple of seconds. Several to more than one hundred notes can be heard in a row.

CONSERVATION STATUS: Carries conservation designations such as “endangered,” “threatened,” “imperiled,” or “special concern” in fourteen states but is not listed at the provincial or federal level in Canada.

NORTHERN HAWK OWL (*Surnia ulula*)



DESCRIPTION: A medium-size brown owl, with a long tail; 13.5 to 17.5 inches long, with a wingspan of 30 to 35 inches.

SIMILAR SPECIES: Not likely to be confused with any other owl.

INTERESTING FACT: Hunts in the open, in the daylight, from exposed perches where it can spot prey from almost half a mile away.

NORTH AMERICAN DISTRIBUTION AND HABITAT: A resident of the boreal forest up to the tree line, with rare breeding occurrences in northern parts of Minnesota, Washington, Idaho, and Montana, particularly in mature, uncut, burned forest. Periodically irrupts south into the northern US states.

NESTING: A cavity- and platform-nesting owl that nests in large natural or woodpecker-created cavities, or

platforms created on broken tops of trees or snags, or on mistletoe brooms; lays 3 to 13 eggs.

VOCALIZATION: Rapid, high-pitched trill.

CONSERVATION STATUS: Uncommon and uncertain status in Canada and Alaska boreal forests; “vulnerable” at the southern edge of their breeding range in Montana, Washington, Idaho, and Minnesota.

NORTHERN PYGMY-OWL (*Glaucidium gnoma*)



DESCRIPTION: A small grayish-brown or reddish-brown owl, with a long tail; 6.5 to 7.3 inches long, with a wingspan of 15 inches.

SIMILAR SPECIES: In general, browner than the Ferruginous Pygmy-Owl, with tail bars of white rather than reddish; crown is spotted in contrast to a streaked crown.

INTERESTING FACT: Like the Ferruginous Pygmy-Owl, the Northern Pygmy-Owl has false eyes on the back of the head thought to confuse and ward off potential predators. An aggressive hunter, often indifferent to human presence.

NORTH AMERICAN DISTRIBUTION AND HABITAT: A resident owl in mixed forests of the West, from southeast Alaska to Arizona and New Mexico.

NESTING: A cavity-nesting owl that utilizes woodpecker-created or natural cavities in trees or snags; lays 2 to 7 eggs.

VOCALIZATION: Makes a single pair of *toot* calls with a second or two between each.

CONSERVATION STATUS: Likely declining in several parts of North America where Barred Owls are advancing and where timber harvests are changing the structure of forests.

NORTHERN SAW-WHET OWL

(*Aegolius acadicus*)

DESCRIPTION: A small brown owl with a distinctive facial disk; 8 to 8.5 inches long, with a wingspan of 16 to 18 inches.

SIMILAR SPECIES: Very similar in appearance to the larger Boreal Owl, but smaller, lighter colored, and with more distinctive white eyebrows.



INTERESTING FACT: Can locate prey through hearing alone.

NORTH AMERICAN DISTRIBUTION AND HABITAT: A year-round resident of southern boreal, western, and northeastern forests, with wintering birds occasionally found throughout all but the most southern extremes of the United States.

NESTING: A cavity nester that utilizes woodpecker-created cavities, natural cavities, and nest boxes; lays 4 to 7 eggs.

VOCALIZATION: A series of whistles of a single tone, with two seconds between each.

CONSERVATION STATUS: Special conservation designations in ten states, primarily at the southern part of its breeding range. Canada considers the Queen Charlotte Islands (off the British Columbia coast) subspecies “threatened.”

SHORT-EARED OWL (*Asio flammeus*)

DESCRIPTION: A medium-size, long-winged, light-brown owl; 14.5 to 15 inches long, with a wingspan of 36 to 39 inches.

SIMILAR SPECIES: At rest, with or without small ear tufts displayed, it is distinctive; in flight, it can be confused with the darker Long-eared Owl.

INTERESTING FACT: Short-eared Owl’s “sky-dancing” is perhaps the most impressive courtship display among owls.

NORTH AMERICAN DISTRIBUTION AND HABITAT: Breeds in open landscapes throughout much of the Arctic and subarctic, boreal interior, Intermountain West, Great Plains, and the Central Valley and eastern parts of California. It is rare in parts of the US Northeast and Midwest and in Southeastern Canada. Winters in open areas from southern Canada throughout the US contiguous

states although rarely in the Southwest and Southeast. A Caribbean subspecies occasionally shows up in southern parts of Florida during the spring and summer.

NESTING: A ground-nesting owl that may occasionally scrape out a bowl shape; may also line the nest with grass or feathers; lays 1 to 11 eggs.

VOCALIZATION: Silent except during mating season, when a low but forceful *voo-poo-poopoo* is uttered over a few seconds from the ground or in flight.



CONSERVATION STATUS: An “endangered” or “imperiled” species in a dozen states and listed as a “species of concern” in more than a dozen others. At the federal level in Canada, it is listed as a “special concern” and holds conservation designations “threatened,” “vulnerable,” or “special concern” in six provinces.

SNOWY OWL (*Bubo scandiacus*)

DESCRIPTION: A large, long-winged white owl; approximately 23.5 inches long, with a wingspan of 56 to 61 inches.

SIMILAR SPECIES: Heavily barred juveniles might be confused with whitish-colored Arctic forms of the Great Horned Owl.

