# An Introduction to the Animals of the Rogue Valley

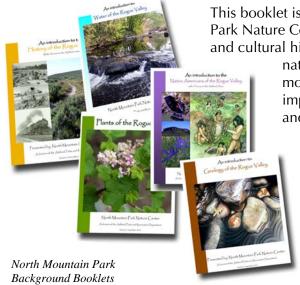


North Mountain Park Nature Center

A division of the Ashland Parks and Recreation Department

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## About this booklet



This booklet is one piece of the North Mountain Park Nature Center's interpretation of local natural and cultural history. In it, we explore the region's

native wildlife, the habitats they are most adapted to, the human-caused impacts and changes to these habitats, and the resulting effect on the wildlife

living there.

The term "local" refers to the Rogue Valley of southwest Oregon, with an emphasis on the Ashland area.

This booklet is meant to be used by educators and others seeking an introduction to the topic

of local wildlife. It is hoped that readers of this booklet will be inspired to seek out ways of observing local wildlife and to help make decisions that will enhance the livability of the Rogue Valley for its people *and its wildlife*, now and into the future. Please see our *Plants of the Rogue Valley* background booklet for more information regarding the plant communities described herein.

We invite any and all comments to this document, which will be updated periodically, in an effort to reflect the most accurate information available.

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## Introduction

The Bear Creek Watershed of southwest Oregon, commonly referred to as the Rogue Valley, has a great variety of habitat types. These habitats, from the highest peak of the Siskiyou Mountains at 7500 feet above sea level to the confluence of Bear Creek and the Rogue River at 1500 feet, have formed as a result of ancient geological processes. The animals living therein have been greatly influenced by these processes but perhaps more significant, and certainly more rapid, have been the influences of people, especially the people who have come to inhabit the Valley during the past 150 years.



Today, the Rogue Valley is a very different place, both in terms of its environments and its animal populations, from that of 200 million years ago. During the Paleozoic Era, the entire region of what is now southern Oregon was covered by an ocean and the only animals living here were marine organisms, including mollusks, nautilids, and primitive sharks. During the Mesozoic Era, the ocean began to recede as the action of tectonic plates began to form the base

of today's Klamath Mountains. Having this land base allowed for the emigration of a variety of animals from the existing continent, including dinosaurs and primitive mammals. Activity during the Cenozoic Era, which involved earthquakes, volcanic eruptions and further plate movement, resulted in the formation of the Cascade Mountain Range with a resulting new assortment of amphibians, reptiles, birds,

and mammals. Ultimately, the erosive power of water travelling down these two mountain ranges resulted in the configuration of the valley as seen today.



Throughout this long and varied geologic history, the animals of the region have evolved and adapted to the environments around them.

Early mammal

For thousands of years, animals of the Rogue Valley have also been influenced by the people living here. Since time immemorial, indigenous tribes followed a pattern of existence predicated on moving around the valley seasonally in order to obtain

resources when they were most abundant. In doing so, they also managed these resources in a variety of ways, most significantly, with the use of fire. After thousands of years, however, the balance that had been established between the indigenous people, the land that was their home, and the animals living there, was suddenly and permanently altered. Lured by the discovery of gold and the offer of free land, in less than a decade, Euro-American settlers established dominance in the valley and forced the resident populations to seek refuge on far-away reservations. The impact of this new



Much of the habitat of the foothills and valley floor has been converted to agricultural and urban development. Karin Onkka

order and mindset on the valley's wild animal populations was significant and mostly detrimental, as creeks were torn up in search of gold; domestic animals and crops took over former oak-savanna, grassland and riparian habitats, periodic low-level fires were curtailed, flooding was discouraged and waterways were over allocated and polluted. Additional influences came about through the action of logging, road building, wetland altercation, and development. As a result, with a population of over 100,000 humans living in the Rogue Valley, today's animal populations reflect a complicated mix of remnant native wildlife, emigrant wildlife, and domesticated species. Despite all of the changes that have taken place, however, there also exists an awareness of the need to protect the amazing array of wildlife that now exist in the old, and new, habitats of the Rogue Valley.

# Animal Habitats of the Rogue Valley

Through the processes of evolution and adaptation, each species of animal has developed a unique combination of physical features and behavioral characteristics that allows it to succeed best in one or more optimal habitats. If these optimal habitats become unavailable, animals are forced to re-locate to suboptimal habitats, where their chances of survival can be greatly reduced.

In the Rogue Valley, although many of the natural habitats have been altered or converted to agricultural or urban lands, hundreds of species of mammals, birds, reptiles, amphibians, and fish are still able to acquire the food, water, shelter, and reproductive areas necessary for their continued existence.

## Animals of the Sub-Alpine

Rogue Valley is found at the highest elevation of the Siskiyou Mountains. This zone, which tops out at the peak of Mt. Ashland 7500 feet above sea level, is characterized by rugged terrain with partially forested species of fir, hemlock, and pine interspersed with open areas of

> Talus slopes and boulder fields, also characteristic of the sub-alpine, provide critical cover and nest sites for a variety of animals.

The sub-alpine zone of the grasses and shrubs.

Clockwise from top: Mt. Ashland, courtesy of Patrick Alexander; goldenmantled ground squirrel; raven; snowshoe hare



Wildlife adapted to living in this challenging ecosystem successfully cope with extended cold temperatures, high winds, and air with a very low moisture content. Snow is a significant

feature of this habitat, lasting up to nine months on the upper reaches of Mt. Ashland, with accumulations up to 25 feet.

Although conditions of the sub-alpine can be very harsh, this ecosystem supports a variety of associated wildlife. Golden-mantled ground squirrels, for example, have adapted to this bitter climate by hibernating. Before doing so, these chipmunk-like squirrels gorge themselves on seeds to build up their body fat and help sustain them throughout their long winter nap. Yellowpine chipmunks, which also hibernate, bear their young in underground burrows.

Snowshoe hares, another resident of the sub-alpine, have the unique ability to change their coat color from tawny brown in the summer



Yellow-pine chipmunk

to white in the winter. Snowshoe hares, as their name implies, also have large, furry feet that help them to move atop snow and to escape from predators, including the American marten. Martens, which are related to the weasel, do well hunting throughout high-elevation forests.

During the snowy winter season, martens tunnel under snow to search for mice and other prey. Another tunnel builder is the western pocket gopher, which builds a series of underground chambers to store



American marten, Alaska USFS

food, pile waste, and create nesting areas. There is also a wide variety of birds adapted to the cold sub-alpine zone, including the very conspicuous common raven. This gregarious, intelligent bird is adapted to mid- and upper-elevation forest habitats, where it survives on a diet of seeds, fruit, eggs, nestlings, and carrion. In the spring, as hoards of insects migrate from lower elevations up into the sub-alpine, ravens take advantage of this ready food source.

**Above:** Rufous Hummingbird **Right:** Lupine, Nancy Wylie

The Mountain Bluebird and the Mountain Chickadee also enjoy the spring harvest of insects. Another insect eater, the Red-breasted Nuthatch, inhabits the sub-alpine zone in the summer, oftentimes creeping headfirst down tree trunks to search for insects left behind by the Brown Creeper, which move in the opposite direction as they

work their way up the tree looking for lunch.

Summer is also a time when a plethora
of wildflowers bloom in the sub-alpine,
providing nectar for the Rufous Hummingbird
and numerous bees and other insects. These
insects in turn provide a critical source of food
for many other birds, including Tree Swallows.

Fall is a time when many animals, including black-tailed deer, begin to migrate down to lower elevations, leaving the betteradapted species on their own to persevere in the coldest and harshest climate of the Rogue Valley.

## Animals of the Mixed Conifer Hardwood



Starting just below the sub-alpine zone, the mixed-conifer habitat is comprised of Douglas fir, ponderosa pine, grand fir, white fir, sugar pine, and incense cedar,

with a spattering of hardwood species and an understory that is sparse and shrubby.

Clockwise from top: Conifers, Kerry Metlen, The Nature Conservancy in OR; northern flying

squirrel, WDFWS; Northern Spotted Owl, John and Karen Hollingsworth, USFWS

An associated complex community of animals inhabits the mixedconifer zones of both the Cascade and Siskiyou Mountains.

Within this habitat live a number of animals adapted to the majestic old-growth components of the forest, including the Northern flying squir-

rel, the silver-haired bat, and the Northern Spotted Owl.

This medium-sized owl became the "poster child" of environmentalists during the

1980's as its dependence on large older trees came to symbolize the need to halt the logging of old-growth forests in the Pacific Northwest.

Numerous birds inhabit the mixed-conifer habitat, some as year-round residents, and others as migratory visitors.

The Golden-crowned Kinglet utilizes this habitat as it gleans leaves and branches in search of small insects and their eggs, while the Hermit Thrush works underneath trees and shrubs, scraping the leaf litter on the forest floor to find





Golden Crowned Kinglet, Greg Gillson, ODFWS

beetles, caterpillars, ants, and other insects.

There are several species of resident woodpeckers that utilize the mixed-conifer forests, including the Pileated Woodpecker, which can be heard throughout the forest as it excavates large, rectangular holes in search of ants.

Another forest woodpecker is the colorful Northern Flicker, which gleans insects from the forest duff and while doing so may roll in the dust to remove oil and bacteria. As a bonus to this grooming behavior, flickers often pick up ants, which they later consume as a tasty snack.

Pileated Woodpecker, NPS

Another woodpecker of this habitat is the smaller Hairy Woodpecker, which prefers to work the tree trunks looking for all manner of insects and spiders.

Amphibians of the conifer forest inhabit areas where water is accessible.

The western toad and the rough skinned newt, for example, live in the moist understory that is also near open bodies of water that they need for breeding.

A lungless salamander, the ensatina can only survive living in the moist surroundings of the forest floor because it breathes through its skin, which must remain moist to allow passage of air.

Ensatinas forage during rainy nights, crawling among logs and leaf litter in search of crickets, sow bugs, centipedes, and snails.



Clockwise from left: ensatina; roughskinned newt; western toad, Walter Siegmund

The Rogue Valley is the only region in Oregon where black salamanders can be found. Predominantly a ground dweller, the black salamander can be found in a few isolated regions of SW Oregon, where it uses its prehensile tail to climb trees in search of food. Among the more common reptiles of the conifer forest are the Northern alligator lizard, the ring-necked snake, and the common king snake, which finds refuge under rock outcrops and rotting logs.



Ring-necked snake

An adept climber of the trees of the conifer forest is the Siskiyou chipmunk. The wary Siskiyou spends much of its time in underground burrows, which it excavates beneath bushes, rocks, and logs. Another rodent that enjoys the cover of the forests is the mountain beaver. Unrelated to the more common American beaver of streams and wetlands, the mountain beaver is a primitive rodent that inhabits moist, brushy areas, usually near a water source which it needs in order to, consume up to 2/3 its weight in water daily.



Clockwise from above: Mountain beaver; porcupine, NPS; fisher, John Jacobson, WDFWS.

Herbivores and predators co-exist throughout the mixed-conifer habitat, both showing special adaptations for survival. As an example, the slow-moving porcupine is an adept climber, which gives it access to leaves, twigs, and bark. While the porcupine's modified hairs, or quills, offer

protection from most predators, the fisher, a member of the weasel family, has mastered the "frontal approach" to attack a porcupine 's unprotected head and face. The mountain lion, or cougar, is another seasoned predator of the mixed-conifer forest, preying mainly on black-tailed deer. These mostly nocturnal cats are wary of humans but occasionally develop home ranges in the forest interface where family pets may substitute for wild animals.

More omnivorous than carnivorous, black bears roam the forest in search of berries, nuts, tubers, insects, small mammals, bird eggs, and sometimes carrion. Another omnivore of the mountain forests is the reclusive ringtail. This nocturnal relative of the raccoon prefers rocky, talus slopes, which it climbs with the aid of its extensive ringed tail as it searches for mice, rabbits and other rodents.

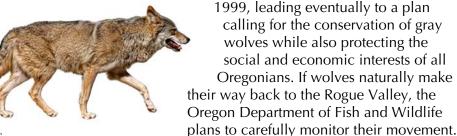
One of the top predators no longer roaming the forests of southwest Oregon is the grizzly bear. These large bears were once common in the Rogue Valley, preying on deer and elk. With the introduction of livestock to the valley in the mid-1800s, grizzlies and gray wolves became a threat to ranchers' livelihood as both species adapted to a diet of sheep and cattle. These key species were no match for steel traps and shotguns, however, as ranchers launched a successful all-out attack against them.

The last grizzly bear to roam the valley is thought to have been shot and killed just before the turn of the 19<sup>th</sup> century, and wolves shortly thereafter. Following an absence of more than 60 years, one lone wolf entered Oregon from Idaho in





From top: Mountain lion; ringtail, Robertbody@wikimedia.en; grizzly bear.



Gray wolf

## Animals of the Chaparral

The chaparral habitat is found at mid to lower elevations of both the Siskiyou and Cascade mountains. The main feature of chaparral is the abundance of multi-stemmed shrubs, including ceanothus and manzanita, which grow interspersed with herbaceous plants amidst a scattering of hardwoods and conifers. On the Cascade side of the valley, this habitat is influenced by its sunny, southern exposure.

Over 40 species of birds regularly breed within the chaparral habitat, with many more species utilizing this shrubby environment for feeding. Ground-foraging birds and those that glean seeds and insects from lower branches dominate this habitat and, in summer, include the Lesser Goldfinch, Spotted Towhee, and the brilliant Lazuli Bunting.



woodrat, © 2013 Roger Hall www.inkart.net



Clockwise from top: Chaparral; black-tailed jackrabbit, ODFWS; Lesser Goldfinch, Gary Shaffer; Lazuli Bunting,

Over 30 species of mammals also utilize the chaparral of southwest Oregon. One of the more interesting is the dusky-footed woodrat. Deserving of the nickname "packrat," this new-world rat has the habit of incorporating all manner of objects, including bits of wire, glass, shreds of clothing,

feathers, bullet shells, and even entire forks, into its stick den. These dens, which can grow to six feet, are re-used over a period of years and even decades.

The black-tailed jackrabbit, which is not a rabbit but is actually a type of hare, is well adapted to the chaparral. Feeding on grasses and forbs in the spring and

summer and shrubs in the fall and winter, jackrabbits use their powerful legs to escape predation and their large ears to help regulate their temperature.

A true rabbit, and one that burrows into the ground for protection, is the brush rabbit. A smaller version of the cottontail, the brush rabbit survives among the thick, brushy edges of the chaparral, rarely venturing more than three feet from its burrow.

Hares, rabbits, and other small mammals provide an important source of protein for carnivores of the chaparral, including the bobcat. This medium-sized cat utilizes rocky outcrops, brush piles, and hollow logs for rest sites and dens.

The chaparral is also home to a variety of snakes including the gopher snake

Clockwise from top: Woodrat den; bobcat with rabbit; western fence

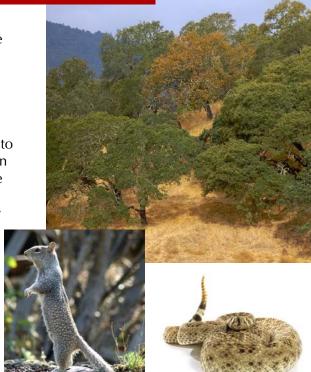
lizard; gopher snake; rabbit tracks.

which will both climb and burrow in search of prey. The Western fence lizard and the Southern alligator lizard utilize rocky outcrops of the chaparral for basking areas and for protection from aerial predators.

## Animals of the Oak Savanna/Grassland

Providing a border between the chaparral and the valley floor, the oak savanna of the Rogue Valley is made up of widely scattered trees, mainly white oak, with an understory of native grasses and small shrubs and a scattering of ponderosa pine trees. In addition to the many animals that travel down into this habitat to feed during the cold winter months, many more have adapted to this zone as their primary area of residence.

One of the signature species of the oak-savanna is the California ground squirrel. True to their name, ground squirrels spend much of their time underground in a series of elaborate burrows they excavate for protection. When not in their burrow, ground squirrels will scale rocks and



Clockwise from top: Oak Savanna; Western rattlesnake; California ground squirrel, Robert Mumby.

stumps to get a better view of the landscape in search of predators, among them the Western rattlesnake. This pit viper uses efficient and deadly venom to subdue its prey, which it begins to digest prior to swallowing.

Using a different strategy the slim racer snake coils around its prey, including the California vole, before eating it. To avoid predation

from snakes and birds of prey, the California kangaroo rat hides in its burrow during the day, emerging



Left: California kangaroo rat. Above: Oregon white oak.



Western skink, Gary Nafis, NPS

only at night to forage for seeds, berries, and fresh leaves.

Another reptile of the oak-savanna is the western skink. Recognized by its bright blue tail, the skink has the adaptive ability to detach its tail when threatened. When this occurs, the muscles of the tail continue to contract, creating a blue, wiggly target that can fool predators long enough for the skink to reach safety.

One of the more conspicuous birds of the oak-savannah is the Acorn Woodpecker. True to its name, this medium-sized woodpecker gleans insects in the spring and summer but caches,

or stores, acorns in the fall for later use. Somewhat dependent upon woodpeckers of the oak-savannah is the Western Bluebird. This bright-blue songbird is a cavity nester that readily takes over tree cavities abandoned by woodpeckers.

Another signature species, the Western Meadowlark (Oregon's state bird) is a vociferous addition to the grassland of the oak-savannah. Meadowlarks feed on grass and weed seeds during the winter and spring but probe the soil for beetles, crickets, ants, and sow bugs during the summer. Nest construction, which is accomplished solely by the female meadowlark, begins with a scraped-out depression in the ground. This excavation is often camouflaged by covering it with a roof of woven grass or stems.

Like other ground nesters of the oak-savannah, including the uncommon Vesper Sparrow, Meadowlark numbers are decreasing due to increased human use of nesting habitat.

From top: Acorn Woodpecker, Jeffrey McFarland; Western Meadlowlark,
Gary Shaffer; Western Bluebird; Vesper Sparrow.



One of the top predators of the oak-savannah is the adaptable coyote. Although it has been relentlessly hunted, trapped, and poisoned, the wily coyote has been able to adapt and survive in several habitats of the Rogue Valley. This omnivorous mammal travels far and wide, cloaked in its tawny coat. It stalks and kills a variety of rodents but will also eat fruit, insects, snakes, lizards, and cats.

**Above:** Burrowing owl.

**Right:** *American badger.* 

Rarely seen in today's oak-savanna, the Burrowing owl utilizes abandoned ground squirrel and badger burrows. Burrowing owls

become most active during dawn and dusk, walking, hopping, and even running along the ground in search of insects and small mam-

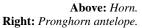
mals. Like the owl that uses its burrow, the American badger today is also a rare resident of this habitat. Due mainly to the action of early farmers and ranchers who hunted, trapped, and poisoned this "nuisance" animal, badgers no longer

Covote

play a significant role in the oak-savannah ecosystem of the Rogue Valley.

Another victim of settlement, pronghorn antelopes used to roam the grasslands of

the Rogue Valley, moving in small herds to graze on shrubs and native bunchgrass. More displaced than targeted, pronghorns are now found only on the east side of the Cascade Mountains in southern Oregon.





## Animals of Streams and Riparian Areas

Riparian areas occur along watercourses and water bodies. In the Rogue Valley, these areas exist along Bear Creek and its tributary streams, and also along a number of mostly man-made water bodies such as Emigrant Lake.

Riparian areas are unique because of their influence on the nearby water and vise-versa. In terms of wildlife value, riparian areas provide the richest combination of food, shelter, water, and nesting sites of any habitat found in Oregon.

In healthy riparian habitats of the Rogue Valley, the vegetation is a mix of mature hardwood trees, including cottonwood, alder, and maple, and an understory of native shrubs, including willow.

One of the biggest influences of riparian trees on the associated stream is the shade that they provide.



top: Riparian scene; Western Pond Turtle, Jeffrey McFarland; Ospreys, Robert Mumby.

In the lower-elevation streams of the Rogue valley, shade is a critical component for salmon and trout, which are considered cold-water fish.

Although their populations have been greatly reduced, both coho and Chinook salmon still spawn in the Bear Creek watershed.

Above: Coho salmon.
Right: Chinook salmon

Steelhead and Pacific lampreys, two other species of anadromous fish, are also adversely affected by warm water. Lampreys can be found in several tributaries of the Rogue River, including Bear Creek. These eel-like fish begin life as filter feeders, surviving on a diet of mostly algae and diatoms. After about seven years in fresh water, lampreys travel to the Pacific Ocean, where they begin to use their circular mouth to attach to, and parasitize, other fish. After one to three years in



the ocean, mature lamprey swim back to fresh water to spawn and die.

Pacific lamprey, US Bureau of Reclamation.

Along with their role in cooling the stream, riparian trees play a critical role in the food chain of the region's streams, providing food in the form of fallen leaves, twigs, needles, and bark. This detritus supports a myriad of aquatic insects that are in turn eaten not only by fish, but also by crayfish, Pacific tree frogs, and the unique American Dipper.

Clockwise from **left:** Riparian tree; American

Dipper, Irene Brady; Belted Kingfisher; Pacific tree frog.

The Dipper is the only songbird that gets its food, made up of aquatic insects, entirely from the water of a

stream or lake.

To be as close as possible to this food source, the Dipper builds its nest close to the water's edge or even in midstream on rocks or clumps of debris. The stream nutrient

cycle comes full circle as the critical nutrients provided by riparian vegetation returns to the stream ecosystem when salmon, and other anadromous fish, return to spawn and die.

Another signature bird of riparian areas is the raucous Belted Kingfisher, which spends much of its time perched above the stream on the lookout for small fish, which it dives in and grabs with its pointed beak.

a stream also providing sites for numero Yellow Warblers, for the shrub layer of the riparian area, often in willows, where they line their cuplike nest with feathers, deer hair, and fibers from the fluffy cottonwood tree seeds.

Another riparian nester is the colorful Bullocks Oriole, which makes a hanging nest lined with all manner of fibrous material, including grass, yarn, string, and even tinsel from discarded Christmas trees.

The trees and shrubs growing alongside a stream also provide nesting and roosting sites for numerous species of birds. Yellow Warblers, for example, nest in

Left: Bullock's Oriole and nest, Irene Brady. Above: Yellow Warbler.

Downed trees and snags provide another vital habitat component for the rearing of young. The American mink, a

Right: American mink.
Below: Wood Duck

nestlings, Mike Lentz

good swimmer and diver, uses hollowedout logs as den areas, while Wood Ducks make their nest in cavities of living and standing dead trees. This species of duck has the interesting habit of pushing its fledglings out of the nest so that they drop directly into a wetland or creek.

Along with fish, a number of mammals utilize streams for movement, food, and

protection. The American mink can travel for hours at a stretch, swimming in and among the stream corridor in search of food.

Another mammal of the stream and riparian area is the river otter. This playful

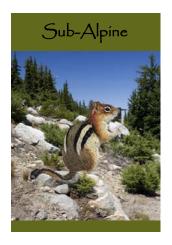
member of the weasel family can out-swim a salmon as it travels in the water. Out of the water, however, these adept swimmers become easy prey for bobcats, black bears, and other land predators.

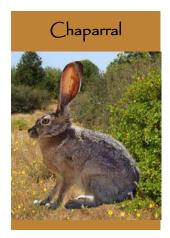


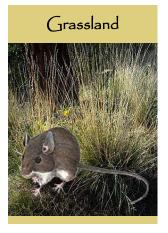
River otter

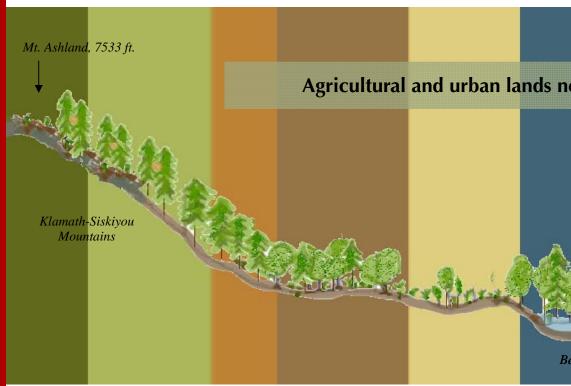
# Animal Habitats of the Rogue Valley

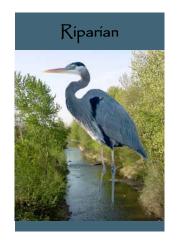
The Rogue Valley watershed supports a variety of different eco-regions defined by a mosaic of unique animal habitats.

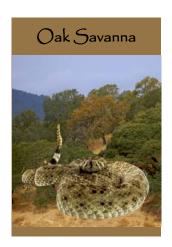


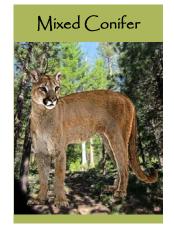


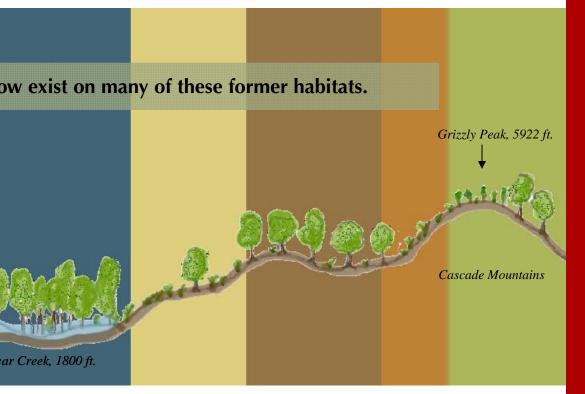














Clockwise

from top:

Beaver dam;

beaver: muskrat.

impale fish.

A critical component of the stream ecosystem, wetlands used to be formed from the action of beaver, which would make dams in the side channels of Bear Creek. These dams would transform sections of the stream from fast-moving water to slow-moving ponds, providing food and shelter for a myriad of species.

Inundation of the floodplains during seasonal rain events would also create a number of important wetland areas for numerous species of wildlife, including a number of amphibians, such as

the yellow-legged frog, Western toad, long-toed salamander, and the rough-skinned newt. Unfortunately, many of the former wetland areas of the Rogue Valley have been compromised or lost altogether by stream channelization, road-building, development, infill, and the trapping of beaver during the early 1800's.

Sometimes mistaken for the beaver, muskrats are dependent upon the remaining wetland areas. A member of the rodent family, muskrats are well-adapted to living in an aquatic environment, where they feed on cattails, willow, crayfish, frogs, snakes, and fish. The wetland areas that remain in the Bear Creek watershed also provide critical foraging and nesting areas for waterfowl and shorebirds. One of the more regal-looking wetland birds, the Great Blue Heron, quietly stalks shallow

wetlands, waiting to use its dagger-like bill to

Great Blue Heron.



Three are a number of amphibians that are dependent upon the habitat provided by the cool, clean water of the upper tributaries. Pacific giant salamanders begin life breathing through gills in these streams and then as adults, move along stream banks in search of food, finding shelter under logs and boulders. Another salamander, the Siskiyou mountain salamander, can be found only in the upper reaches of streams in Southern Oregon, where it plays a significant role in the forest ecosystem.



Pacific giant salamander, NPS.

Among the many reptiles that can be found in streams and wetlands of the Rogue Valley is the Western pond turtle. This omnivorous turtle inhabits both slowand fast-moving water courses, where it can be found basking on logs, rocks, or masses of aquatic vegetation.

An excellent swimmer, the carnivorous garter snake is as comfortable in the water as it is on land. All of the species of garter snake found in the Rogue Valley play significant roles in the

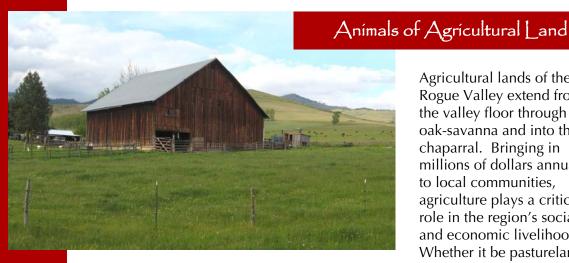
riparian food chain, feeding on slugs, earthworms, lizards, salamanders, and rodents while also providing food for hawks, raccoons, foxes, and other snakes.

Garter snake.

Along with the abundance of native wildlife that utilizes riparian areas are several non-native species. One that has become a threat to native amphibians is the bullfrog. Most likely introduced for food (in the form of frog legs) bullfrogs have few natural predators in the West, so their numbers have increased dramatically. There are also a number of non-native fish that have adapted to the warmer streams and man-made ponds in the Rogue Valley including largemouth bass, smallmouth bass, pumpkinseed, black crappie, and brown bullhead. These warm-water fish were purposely introduced to the valley, mostly for sport fishing.



From top: Pumpkinseed; Largemouth Bass, Duane Rayer, USFWS



Agricultural lands of the Rogue Valley extend from the valley floor through the oak-savanna and into the chaparral. Bringing in millions of dollars annually to local communities, agriculture plays a critical role in the region's social and economic livelihood. Whether it be pastureland,

cropland, nut farms, orchards, vineyards, or hobby farms, agricultural land provides both challenges and opportunities for the area's wildlife.

One of agriculture's biggest threats to wildlife has been the loss of native habitat, especially the low-elevation riparian areas and the oak-savanna with its associated understory of native bunchgrass. The grazing of thousands of head of cattle and tens of thousands of sheep in the Rogue Valley during the latter half of the nineteenth century resulted in the loss of much of these habitats and led to the spread of many non-native, invasive plants.

Another major impact to wildlife from farming and ranching has been the outright persecution of a number of species. Along with the loss of key predators including the grizzly bear and gray wolf, many smaller mammals such as badgers, moles, voles, ground squirrels and gophers have all been targeted because of the perceived damage

they do to fields and farmland. Still another group of animals, those that compete directly with the food that is being raised on farms and ranches, has also come under attack. This group includes a variety of songbirds, mice, skunks, and foxes, among others.



The building of farms and ranches has also impacted the movement of wildlife. Mainly due to the erection of fences, the natural movement of wildlife across vast stretches of the valley has been greatly restricted. Yet another impact has been caused by the use of herbicides and pesticides, which have had the greatest

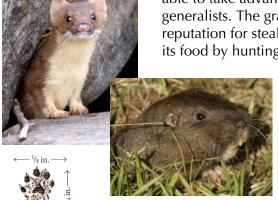


affect on native pollinators, vulnerable amphibians, fish and songbirds.

While agricultural practices have impacted many of the area's natural ecosystems, farm and ranch lands also provide a rich array of habitats suitable for many species of local wildlife. Because farmland mimics several of the features of the chaparral and grassland habitat they have replaced, numerous species have been

able to adapt to living there. Overall, species that are best able to take advantage of agricultural land tend to be the generalists. The gray fox, for example, while having a bad reputation for stealing chickens, actually obtains most of its food by hunting rodents, including a list of common

farm nuisances that includes the broad-footed mole and the deer mouse. Also adaptive, the speedy long-tailed weasel can chase and capture small prey but is also able to dig out the elusive Botta's pocket gopher, an animal that can do significant damage to cropland.



From top: Long-tailed weasel, Dennis Garrison, USFS; Botta's pocket gopher; long-tailed weasel tracks.

Numerous birds also benefit from agricultural land. Savannah Sparrows,

Brewers Blackbirds, and Red-winged Blackbirds all eat waste grain along with insects that are found there. Western Meadowlarks move along the ground, gleaning seeds and nuisance insects, such as grasshoppers and crickets.



Canada Geese in field.

Several subspecies of Canada Geese move throughout the agricultural lands of the Rogue valley, taking advantage of surplus grain and hayed fields.

A number of songbirds, including the migratory blue Lazuli Bunting, Western Kingbird, and the resident Cedar Waxwing, are attracted to the fruit that agricultural land provides.

Agricultural fields also provide some of the best habitat for small rodents, which are eaten in turn by a number of predators. One of the more spectacular aerial hunters of these rodents is the White-tailed Kite, which hovers over open country before diving head first at its prey. Redtailed Hawks are a common sight on farm land, where they can be seen hunting for one of their favorite meals, California ground squirrels.





The smallest raptor of the Rogue Valley, the American Kestrel, also hunts rodents of farm land, usually from a perch, then stashes its catch on fence posts or tree limbs for later consumption.

Vegetation left undisturbed alongside fields, often used as windbreaks, provides important habitat for ground-dwelling birds such as the California Quail and the non-native Ring-necked Pheasant and Wild Turkey.

When maintained on agricultural land, living trees, standing snags, and downed logs provide prime habitat features for a variety of

Above: California Quail.

Below: Western spotted skunk.

Wildlife. American Crows, for example, nest and roost in live conifers, while Downy Woodpeckers nest in snags, and Western spotted skunks den in downed logs. The spotted skunk, a relative of the more common striped skunk, feasts on small rodents, which also use downed logs for pro-

tection.

Natural formations on privately owned farmland, including cliffs, ledges, and rocky outcrops, also provide important habitat for many species. Raptors, such as the resident Red-shouldered Hawk, utilize outcrops for nesting, while the winter-visiting Rough-legged Hawk will use rocky ledges for scoping the landscape below in search of dinner.

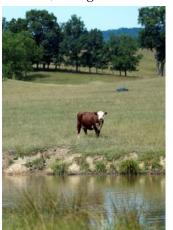


Above: Golden Eagle. Right: Southern alligator lizard, William Flaxington; Barn Owl; Barn Swallow and nest.

Man-made structures on farms and ranches can also

provide key habitat features for a variety of wildlife species. True to its name, the Barn Owl will often nest and roost in a barn. Barn Swallows, which once nested exclusively in caves, today prefer to build their mud-and-grass cup nest in barns, sheds, stables, and under bridges. Bats, including the big brown bat and the Yuma bat, use barns and other outbuildings for roosting.

Water on agricultural lands can also support wildlife. Rogue Valley irrigation districts provide summer water to farms and ranches, much of it delivered through open ditches that intersect with natural streams. The water in ditches, along with associated wetland areas, has become



prime habitat for the diminutive Pacific tree frog. Farm ponds have both positive and negative impacts on local wildlife, mimicking former wetlands and providing habitat for

birds and amphibians, but also attracting non-native species such as bullfrogs, nutria, and various warmwater fish. There are many ways that rural property owners can make their property wildlife-friendly, and it all starts by recognizing that the land they are cultivating was once a part of a unique plant community that supported an associated array of native wildlife.

Golden Eagles will use rocky habitat for perching and resting when not hunting on the wing. Rocky habitat is also important for a variety of reptiles, among them the Southern alligator lizard and the gopher snake, which use rocky ledges and outcrops for basking and to hide from predators.



## Animals of the Urban Landscape

The impacts on the local wildlife from a population of a few thousand Native Americans prior to 1850 to over 100,000 mostly Euro-Americans at the turn of the 21<sup>st</sup> century has been quite significant. The result of urban development in the Rogue Valley, as elsewhere, has been that some species of wildlife have been lost, some have been greatly reduced, and others have been favored. Those species

that have done well in the built environment have found ways to take advantage of the increase in available food provided by gardens, bird feeders, landscape plants, and trash, along with additional water provided by backyard water features and yard watering.

has been and of

Clockwise from top: Downtown Ashland; female Bullock's Oriole on feeder, Robert Mumby; Western gray squirrel, Irene Brady.

Other species have adapted to the variety of new hiding, perching, and nesting sites found in the human-made structures of eves, attics, porches, bridges, wires, and even abandoned cars.

In general, wildlife that has adapted to the urban landscape of the Rogue Valley is a mix of native and non-native species. Among the opportunistic native mammals are the omnivorous raccoon and the striped skunk, both of which are nocturnal, lack shyness around humans, and will eat just about anything, including pet food. The recent (2013) outbreak of distemper in the Rogue Valley highlights one of the problems with leaving food out and available for wildlife. When wild animals congregate together the possibility of diseases spreading is increased. Feeding wildlife also allows certain diseases to be transferred to, and from, domestic pets.

The Western gray squirrel is an adept climber and jumper, leaping from treetop to treetop. This bushy-tailed acrobat has begun to move down from the forest into

park and residential areas in search of tall suitable trees which it uses for nest-building.

Among the non-native mammals that have benefited from urban development are the Virginia opossum, Norway rat, and house mouse. Rats and mice most likely arrived as stowaways from England, coming across the Atlantic on large sailing vessels, while documents reflect that

opossums were brought into Oregon as pets in the early 1900s. These non-native mammals are all prolific breeders, and, with none of their native predators around, have rapidly expanded throughout the entire Northwest.

Numerous native songbirds have become adapted to the urban environment, mainly due to the availability of food at feeders.

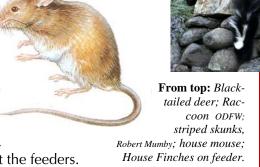
Among the more vocal is the Western
Scrub Jay, which has the habit of burying food, often favoring nicely worked garden soil. Other birds commonly seen at urban feeders include the House Finch, the Golden-crowned Sparrow, and the Dark-eyed Junco. Bird feeders are also attractive to raptors, like the Cooper's Hawk, which preys on small songbirds that frequent the feeders.

There are only a few non-native resident songbirds in the Rogue Valley, but their toll on native birds has been extensive.

European Starlings, for example, compete quite successfully with small birds like Black-capped Chickadees, Oak Titmouse, and Western Bluebirds for nest cavities. The Starling, which was introduced to Ce

nest cavities. The Starling, which was introduced to Central Park in the late 1800s by a group of people who wanted to populate America with every bird that Shakespeare mentions in his writing, rapidly spread across the entire continent.

Also a challenge is the native Brown-headed Cowbird, which lays eggs in the nests of other birds to fool them into raising the cowbird young.



Water is another feature that attracts wildlife to urban environments. Ducks, including the Wood Duck, American Wigeon, common Mallard and the uncommon Bufflehead, take advantage of open waters in parks, treatment plants, and



swimming pools. Smaller birds and mammals also take advantage of all manner of back yard water features.

Bringing together a combination of water features, native vegetation, natural shelters, and no-pet areas will help to attract and support local wildlife

populations near your home. By consciously selecting a seasonal variety of flowering plants, your yard will also attract many species of beneficial pollinators, including butterflies and bees. Leaving a certain amount of garden planting to overwinter will go a long way to support year-round populations of insects and spiders, all of which in turn provide food for birds,

lizards, frogs, and snakes. Adding a compost area will bring in a selection of natural decomposers such as sow bugs, millipedes and others, which can be seen in their natural setting under logs and duff on the forest floor.

One unintended food source of urban areas is garbage. Many wild animals, including Ring-billed Gulls, California Gulls, raccoons and skunks, will scavenge trash containers and dump sites for food. Black bears have even found their way into houses looking for food.

While watching raccoons with their heads in a box of tossed-out cornflakes might seem amusing, the feeding of wildlife is actually quite harmful, as this behavior can exacerbate hunger and spread disease in wild populations.

The best strategy for finding a compatible way to live with wildlife in an urban setting is to try to mimic as much as possible the outdoor natural components that had existed there, while keeping out of harm's way pets, human sources of food and garbage.







From top: Snail, sow bug, and earthworm, Nancy Wylie; black bear with trash; bumblebee on flower; wildlife–friendly yard, Marie Reamer.

# Current Issues facing Wildlife

Issues affecting the wildlife of the Rogue Valley can be thought of in two ways; how people have impacted these animals, and how these animals are reacting with a resulting impact to people. While most of the issues can be traced back to habitat loss and related development, there are other issues that are much more complicated to understand, and even harder to correct.

#### Issue: Habitat Loss:

Habitats have been impacted from a variety of causes, including the clear cutting of forests, the grazing of cattle and sheep, the development of farms and

orchards, and the building of roads and towns. Much of the Rogue Valley's most critical habitat, including those of streams and wetlands, has seen the greatest impact. Beaver, of which there may have been as many as 10,000 prior to settlement, played a large role in establishing and maintaining wetlands. By damming up slower moving water and side channels, beaver created large areas of slow-moving water.

The loss of beaver due to trapping, the channelization of Bear Creek and its use as a conduit for irrigation, and the loss of wetlands to development have all played a role in lessening the quantity and quality of the valley's fresh water habitat.

Above: Rampant urban development Left: Wildlife habitat improves with the removal of Gold Ray Dam on the Rogue River, RVCOG.

**Solution:** One of the most important ways to lessen the rate of habitat loss is to enact strong land-use laws that recognize the value of wildlife habitat. Because Jackson County is gearing up for a doubling of its population by 2040, policies that favor infill over sprawl and those that prevent development from occurring alongside stream corridors can help lessen the impact of growth. Laws that prevent the filling in of wetlands (unless new wetlands are created elsewhere) and monetary incentives that reward builders who incorporate natural features into their plans, are also effective in helping to support local wildlife populations.

## **Issue: Loss of Habitat Connectivity:**

Because animals are rarely able to meet all of their needs in just one place, they



often move between habitats in search of food, water, breeding grounds and resting areas. For some animals, including large carnivores and grazers, this may mean moving across a very large area. Others move seasonally as their food requirements change from summer to winter. There are several factors that can make the migration route between habitat areas difficult to impossible for these animals, including the construction of highways, the building

Above: Deer trying to cross the road.
Right: Wild-life-friendly overpasses are cropping up in many communities around the world.



of homes and residential structures, the erection of fences, and the clear cutting of forests.

**Solution:** In order to enact solutions it is

helpful to assess how these animals are trying to move. With that information , there are several solutions that present themselves, including the building of animal-friendly underpasses, bridges that channel animals onto them, and fences that allow for animal movement. Also helpful is the conservation of land along primary corridors such as streams. Education can also be used to convey which animals are moving where, so that motorists, developers, and even homeowners can take action to allow for the safe passage of wildlife.

## **Issue: Spread of Invasive Species:**

As with plants, over time the animals of the Rogue Valley have come to represent a mix of native species and non-native introductions. While some of these newcomers have been brought to the valley for a specific purpose, others have made their way independent of people. Regardless of how they were introduced, numerous species that have become established now pose a threat to the native wildlife, due in large part to the fact that introduced species are often not the meal of choice for the local wildlife, and so they are able to quickly reproduce and spread. Although certain exotic species, including Pheasants, Rock Pigeons, cottontail rabbits and opossums, pose lesser threats, others, including bullfrogs, Starlings, House Sparrows, and nutria, have had a bigger impact on native wildlife.

Solution after d d s tter targe It is unlii

Solution: To eradicate an invasive species after it has become established is very difficult, time consuming and expensive. Rather than trying to eliminate these species, managing agencies often choose to try to control them by targeting certain areas and approaches.

Norway Rat

It is unlikely, for example, that Norway rats will ever be eradicated from the Rogue Valley, but

there are ways to mitigate their influence by taking away excess food resources and hiding spots. It is also critically important to try to prevent new introductions from becoming established. One of the best ways to do this is by teaching the public not to import exotic live animal pets and never to release exotic animals into the wild.

## **Issue: Climate Change**

According a well-received study by the University of Oregon on climate change in the Rogue Basin, average temperatures will rise by 1-3 degrees over the next 30 years and by as much as 15 degrees by 2080. This degree of change would result in warmer stream temperatures, lower stream flows, earlier emergence of both aquatic and terrestrial insects, and an increased outbreak of disease in a variety of animals, among other factors. Together, the effects of this degree of climate change could have enormous implications for local wildlife.

**Solution:** Along with mitigating the causes of climate change, there are many specific things that can be done to lessen the impact of climate change on area wildlife, including protecting areas of high biodiversity, working toward the restoration and connectivity of stream channels and their associated riparian corridors, and conserving water. In the end, the best thing people can do for wildlife is to consider a world without it.



## Managing for Animals and Their Habitats

Those charged with managing public lands and their wildlife, including federal, state, county and city entities, have myriad interests to juggle. In addition to seeing to the needs of wildlife while at the same time upholding the rights of individual property holders, these agencies must also ride the tide of sentiment that can change with each election. Issues as varied as the value of using controlled burns to enhance the health of the forest, to the benefits of relocating a herd of elk to the banning of pesticides in local parks fall under the domain of public land management and have implications for the wildlife living there. The following agencies share the job of managing the public lands of the Rogue Valley.



**Rogue River-Siskiyou National Forest**: This branch of the US Forest Service manages over 1.8 million acres of land in southwest Oregon. The district recently signed the largest stewardship agreement in the nation, bringing together various partners to restore and protect the Ashland Watershed.

Bureau of Land Management (BLM): This federal agency oversees over 54 acres of land amidst the southern Cascade and Siskiyou Mountains. Along with its general mission of managing land for health and productivity, the Medford District also oversees the Cascade-Siskiyou National Monument, which was designated in 2000 for the purpose of protecting the area's unique biological diversity.



Oregon Department of Fish and Wildlife (ODFW) is responsible for managing fish and wildlife resources and regulating commercial and recreational harvest. ODFW oversees all big game hunts (deer, elk, mountain lion, pronghorn antelope and bear), the hunting of birds (turkey, pheasant, quail, ducks, and geese) the harvesting of furbearing mammals (bobcat, gray fox, red fox, marten, muskrat, mink, river otter, beaver, gray squirrel,

raccoon, badger, coyote, nutria, opossum, porcupine, spotted and striped skunk and weasel), and fisheries. Although they do not manage a large area of land, ODFW oversees one of the richest local habitat areas — the Denman Wildlife Refuge along the Rogue River in Central Point.

**Other:** The remaining public land in the valley is managed by a collection of smaller agencies and non-profits, including Jackson County Parks, which oversees land around Emigrant Lake among other areas, the Nature Conservancy, which oversees land on Table Rocks, and numerous city park departments.

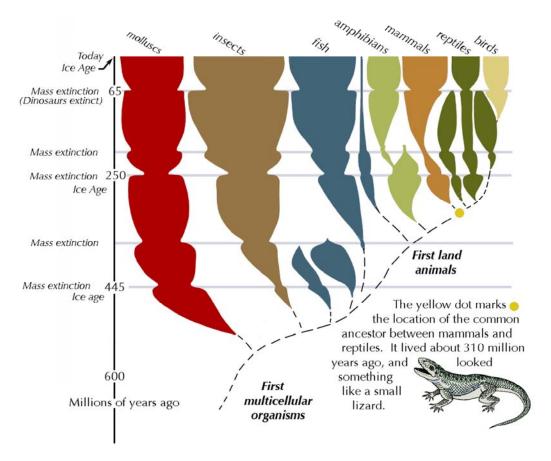
## Appendix A: Animal Evolution

From the earliest beginnings in the sea, animals have evolved and diversified into the stunning complexity we see today. All animals living today are related through descent with modification from common ancestors.

For example, the common ancestor of mammals and reptiles lived about 310 million years ago, and all land vertebrates share a common ancestor that lived about 370 million years ago.

Over time, each branch on the animal family tree has weathered mass extinctions, shifting continents, and changing climate to reach its current diversity.

This simplified diagram shows our current understanding of the time of origin and evolutionary relationship among some familiar animal groups. Diversity within a group is indicated by relative width. Dashed lines indicate uncertainty. Only a few of the many animal groups that have gone extinct are shown here.



## Appendix B: Animal taxonomy and unique features

Our current system for classifying animals was first developed by the Swedish naturalist Carolus Linnaeus (1707-1778). He separated animals (and plants) according to certain physical similarities and gave identifying names to each. All animals belong to the same kingdom. From there, at the phylum level, animals are separated into those with backbones, and those without. Tracing the classification system down a few more levels brings us to the animals we are most familiar with: Amphibians, Reptiles, Mammals and Birds. These are known as Tetrapods.

Kingdom: Animalia

**Phylum:** Chordata — Presence of a "back cord" and a dorsal, hollow nerve cord.

**Subphylum:** Vertebrata — Spinal cord, chain of vertebrae, sexual reproduction.

Superclass: Pisces—fish

Superclass: Tetrapoda — four-footed

At whatever taxonomic or classification level an animal is described, all have similar needs, including the need for oxygen, water, food and protection. In their quest to stay alive and reproduce, every species exhibits unique adaptations and physical characteristics to meet its needs. Unique features of the four classes of Tetrapods follow.

#### Unique Feature — TWO-STAGE LIFE CYCLE

Typically, amphibians have two stages to their life cycle. For example, a tadpole grows into an adult frog.

Some salamanders, however, including the local Pacific Giant Salamander, retain gills throughout their adult lives.
These gilled adults carry out their lives primarily in water.

Scientists are puzzled about why this occurs, though some speculate that it has something to do with animals making the most of available habitats and food sources.

Illustration: Government of British Columbia

**Class:** Amphibia — salamanders, frogs and toads

- Two-stage life cycle is typical
- Eggs usually fertilized externally and laid in water; aquatic larvae
- Adults lose gills and sometimes tail, then acquire legs and lungs
- Skin is soft, moist and glandular and used for respiration
- Cold-blooded
- Now almost 3,000 species, many fewer than in the past.

#### Unique Feature — FUR

There are three types of fur.

Guard hairs are protective. A porcupine's quills are sim-



ply hardened, barbed hairs.

Vibrissae include familiar whiskers and are used as sensory tools.

Underhair is fuzzy and insulative. The hollow hair of certain deer-like animals, like the pronghorn, keeps them very warm in winter.

#### **Class:** Mammalia — mammals

- Mammary glands for nursing young
- More or less hairy skin
- Efficient circulatory system, maintain high metabolic rate
- Well-developed brain
- Specialized sets of bones in the ear, skull and jaw; ossified skeleton
- Many bear live young
- 4,000 species

### Class: Reptilia — turtles, lizards and snakes

- Dry, scaly skin
- Most are terrestrial
- Fertilization is internal live births and eggs
- Most are carnivorous
- Cold-blooded
- Far more common in past geologic times but now number about 6,000 species

#### *Unique Feature* — SCALES

Like fish, reptiles are covered with scales. In turtles and crocs, scales are



known as scutes. Waterproof scales provide important protection to all reptiles, preventing internal water loss. As reptiles grow, their scales are shed in order to grow. The rattles on Western Rattlesnakes are simply modified scales.

### Unique Feature — FEATHERS

There are two types of feathers. Vaned feathers include small contour feathers that cover the body, and the larger flight feathers of the wings and tail.



Down feathers lie underneath vaned feathers and help keep the body warm. Colorful feathers of many birds, including the Northern Flicker, have been used for decorative purposes by people throughout the ages.

#### **Class:** Aves — birds

- All have wings and feathers
- Anatomically very similar to reptiles
- All have horn-covered beak or bill; no teeth
- Dual circulatory system—high metabolic rate
- Large brains—highly developed optic regions
- Flying birds have hollow skeletons and air sacs
- Feet, and sometimes legs, are scaled
- All lay eggs; most build nests
- 8,600 extant species

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# Places to visit



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Bear Creek Greenway
Roxy Ann Peak
Emigrant Lake
Denman Wildlife Area
Table Rocks
Mt. Ashland

#### **Animal Rehabilitation Centers:**

Wildlife Images Jackson County Animal Shelter Sanctuary One

#### To see domestic animals:

Jackson County Fair
OSU Extension Center

**Remember:** only licensed wildlife rehabilitators may care for injured animals. *All birds (except starlings, house sparrows and rock pigeons) are protected by law and should not be handled, even when injured or dead.* 







