

Enhancing Wildlife Habitat

Tips for Small Acreages in Oregon

Living the Good Life with Wildlife

We often choose to live in the country because of the wildlife found there. Some wildlife benefits are:

Natural pest control.

Bats can eat more than 500 insects an hour, including mosquitoes and agricultural pests. Hawks and owls eat rodents.

Healthy wildlife population means a healthy environment for people.

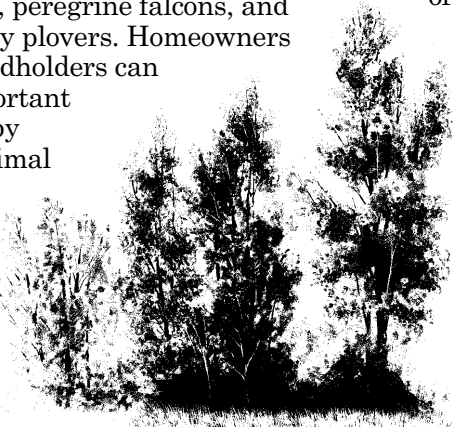
Our declining fish populations are like "canaries in a coal mine," warning us that our watersheds are not as healthy as they could be. Clean water for salmon means clean water for drinking, fishing, and swimming.

Moments of beauty.

Seeing wildlife relieves stress and gives us an opportunity to teach our children about nature and the importance of stewardship.

Unfortunately, more than a quarter of the 626 native fish and wildlife species in Oregon are threatened, endangered, or are headed in that direction. More than a third of our migratory birds have declining populations. We know that careful management has increased populations of bald eagles, peregrine falcons, and western snowy plovers. Homeowners and small landholders can make an important contribution by providing optimal refuge, water, and food for wildlife.

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Wildlife Needs: the Basics

Wildlife includes insects, spiders, mammals, birds, fish, amphibians, and reptiles. Each animal lives in a habitat or habitats that provide food, water, cover, and the right placement of each. Small farms and ranches can provide habitat for many of these needs:

Food

Animals need food year-round. Crops and plants provide forage, berries, nuts, and fruits. Plants with fruits that dry on the stem and are slow to fall are important winter foods. Plants attract animals that are prey for others in the food chain.

Water

Wildlife species need water to drink, to bathe in, and as a source of food. Streams, ponds, birdbaths, and watering tanks can provide water.

Cover

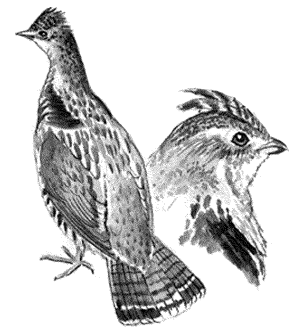
Wildlife need places to nest, rest, escape from predators, and take shelter from harsh weather. Brush piles, fence rows, rock piles, and dense shrubs provide cover. Many wildlife species use different habitats to meet their needs. For small animals, these habitats must be close together. For example, quail and rabbits need forage and shrubs within a few hundred feet of each other. Other wildlife can travel greater distances between needed cover and habitat types.

Oregon has an exceptionally diverse number of landscapes and habitats. Improving your property for wildlife will depend on the conditions in your area. Become familiar with the local wildlife and their habitats. Get advice from informed people with local experience.

"We live in a world of complex, intertwined relationships. The loss of one, small species may not touch us, but it can set in motion a chain of events that ultimately damages our existence. By giving back to wildlife, you give to the future."

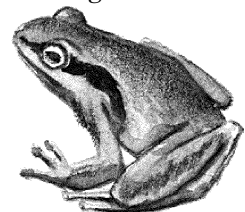
- Rebecca MacLeod,
NRCS District
Conservationist

Ruffed Grouse



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Tree Frog



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Where Do I Start?

Rabbit



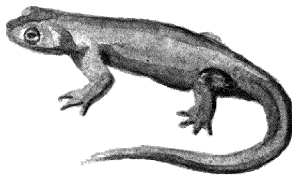
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Junco



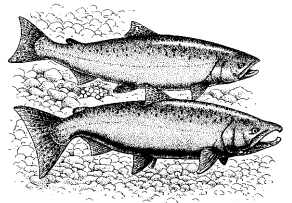
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Salamander



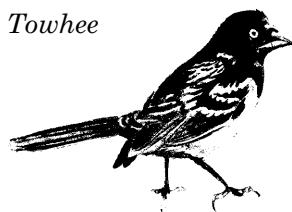
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Salmon



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Towhee



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Small farms and ranches can be rich wildlife havens and serve as buffers from urban areas. To enhance wildlife opportunities on your land:

1. Draw a map of your property.
2. Inventory your existing habitat types (trees, shrubs, or grasses).
3. Decide what wildlife you would like to encourage.
4. Make a plan to meet your goals for protecting, restoring, or improving wildlife habitat.
5. Follow parts or the entire plan over a period of years.

You can improve wildlife habitat on your land in six basic areas: pasture, windbreaks, cropland, woodland, wetland, and farmstead. One study showed that cropland supported up to 88 birds per acre, grassland supported up to 386 birds per acre, and wetland supported up to 702 birds per acre. Read on to learn how to enjoy the company of more wildlife...

How Much Wildlife Can My Land Support?

Just as the acreage and productivity of a pasture can only support a limited number of livestock, so it is with wildlife. A 5-acre farm may support a bevy of songbirds, but it will be difficult to supply all of the requirements for deer. If you would like to attract wildlife requiring large acreages, work with your neighbors to provide habitat on adjoining properties. Wildlife won't recognize property lines. Here's a sampling of wildlife species and their habitat requirements:

Habitat and Wildlife	Required Acreages
Riparian Salamanders, frogs, snakes	1/4 to 2 acres - moist, streamside vegetation with closed canopy; flowing streams.
Meadow Quail, rabbit, meadowlark	15 acres - open areas with grasses and forbs; some shrubs. Rabbits need 1-2 brush piles/acre.
Mixed meadow/forest Deer, elk	50 acres - openings, closed canopy (15-year-old+ trees). Must be close to extensive forested areas of 100 to 1,000 acres.
Young forest Ruffed grouse	15 acres - 50:50 ratio of conifers to alder. Need moist streamsides.

Adapted from *Enhancing Wildlife on Private Woodlands* (EC 1122), Oregon State University.



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The Farmstead as Wildlife Habitat

Enhancing wildlife at the farmstead and surrounding landscape offers the opportunity to see wildlife up close. Consider the following to invite wildlife near your home:

Tolerate some leaf litter and weeds in your yard.

Allow leaves to accumulate under shrubs. You'll encourage towhees and fox sparrows, get rid of insects, and do less raking. Some "weeds" are actually valuable wildlife foods. Dandelions, pigweed, knotweed, chickweed, miner's lettuce, and wild grasses produce seeds prized by wildlife. If you are concerned about the looks of a weedy patch, put up a sign that says, "It's for the birds." In dry areas, you will need to balance the wildlife benefits of plant litter with the fire hazards.

Manage roadsides for wildlife.

Mow in August to avoid the nesting season and leave some cover for winter. Mow grass in blocks to leave some undisturbed cover at any one time. Convert bluegrass or fescue areas to native grasses. Consider a prescribed burn every 3 to 5 years to maintain grass and forb cover.

Preserve abandoned buildings.

Abandoned house and barn buildings provide shelter for barn owls, barn swallows, rabbits, and raccoons. If it is necessary to remove the buildings, consider keeping the surrounding trees and shrubs. Plant mast and berry-producing trees in the area.

Install birdbaths, birdhouses, and bat boxes.

Birdbath water will attract insect- and fruit-eating birds that ignore birdfeeder seed. More than 24 North American bird species will nest in birdhouses that provide nesting cavities in the absence of snags. Do not put birdhouses built for the same bird species next to each other, unless you like to see bird fights. For more information, see the US Fish and Wildlife Service publication "Homes for Birds" at the following website: <http://www.bcpl.lib.md.us/~tross/by/attract.html>. Also, the Bat Conservation Trust has advice on bat houses at <http://www.bats.org.uk/batbox.htm>.

Control pets.

Domestic cats are among the most serious predators of songbirds and quail. Unleashed dogs often disturb nesting birds, run deer, and chase livestock. While it is tempting to let pets roam free in the country, it is safer to confine pets to your yard.

Discourage scavenging wildlife.

It is not healthy for wildlife to depend on processed foods. Store garbage and animal feed in aluminum cans with secure lids. Put away cat food, dog chow, and water dishes at night. Plug holes to prevent unwanted access to outbuildings.

Plant native trees, shrubs, and forbs.

You can double the number of birds in your yard through diverse plantings that provide food year-round. Preserve existing native plants and add others. Native plants are adapted to local conditions and can be more drought-tolerant and resistant to pests than ornamental plants. See the list below for things to plant.

Wildlife Food Source Plants (native and acceptable non-native species)

Trees	Shrubs	Ground Covers	Flowers
Big leaf maple	Blueberry	Bunchberry	Balsamroot
birch	butterfly bush	Kinnickinnick	black-eyed susan
Brewer's spruce	Douglas spirea	salal	bleeding heart
cascara	evergreen huckleberry	violets	cardinal flower
Douglas-fir	lilac	wild strawberry	columbine
filbert	mockorange	wood sorrel	coneflower
grand fir	Oregon grape		daisy
hawthorn	pyracantha		foxglove
incense cedar	red flowering currant		fuscia
Kousa dogwood	red-osier dogwood		iris
noble fir	serviceberry		lupine
Oregon white oak	snowberry		milkweed
Pacific crabapple	wild roses (bald hip, Nootka, and Wood's)		penstemon
red alder			poppy
red and blue elderberry			sweet alyssum
shore pine			sunflower
vine maple			yarrow
western hemlock			
western red cedar			
western white pine			

Pastures as Wildlife Habitat

Savannah Sparrow



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More than 99 percent of grasslands native to Columbia Basin or the Willamette Valley have disappeared. Old fields and pastures on private land can make up for some of this habitat loss. More wildlife is found on farms with pastures than those with cropland only.

In eastern Oregon, grasslands are important to migratory birds, lizards, and rare mammals including the Swainson's hawk, sagebrush lizard, burrowing owl, and the Washington ground squirrel. In western Oregon, meadows are important to songbirds and butterflies, including the Western meadowlark, Fender's blue butterfly, grasshopper sparrow, horned lark, and western bluebird.

To increase wildlife habitat on pasture, consider the following:

Delay spring mowing or increase the time intervals between grazing.

April 1 to August 1 is prime nesting season. Grazing or mowing at this time can kill adults and their nestlings or cause adults to abandon nests. Since this time also produces the most forage, some farmers set aside one "refuge" field for wildlife. This field can be grazed before April 1 and mowed after August 1 to accommodate nesting.

Increase the time intervals between grazing.

Rotationally grazed pastures have twice as many songbirds as those that are continuously grazed. Livestock is moved between paddocks to provide grass a recovery period and to increase yield. Manure droppings increase grass growth and insects, which in turn provide cover and food for wildlife.

Plant warm-season grasses.

Paddocks planted to big bluestem, little bluestem, or switchgrass will produce forage in the summer. These areas may be left undisturbed in the spring and harvested for forage in late July or August. This forage is provided when cool-season grasses are dormant and after the peak nesting season.

Add legumes to pasture and hayland.

Legumes add nitrogen to the soil and reduce fertilizer requirements for forage. Grasses and legumes attract insects that support insect-eating animals, supply browse, and provide nesting cover.

Limit pesticide use.

Insecticides such as organophosphate and carbofuran are extremely harmful to wildlife. For example, carbofuran will kill burrowing owls upon contact. Give nests and burrows wide berth when spraying. Find alternatives to pesticides when possible and use pesticides only when the cost of pesticides is outweighed by the damage to the crop. Select pesticides that are the least toxic to wildlife, follow the label, and keep chemicals away from water.

Install fences that are safe for wildlife.

Smooth wire is safer for wildlife than barbed or woven wire. Space wire at 16, 22, 28, and 40 inches from the ground to allow antelope, deer, and elk to pass the fence with reduced damage to themselves and the fence. The 12-inch gap between the two top wires keeps animals from getting tangled in the fence. Some livestock may need different wire spacing. See your fence dealer for details.

Preserve or plant a windbreak of trees, shrubs, and forbs.

One report estimates that birds consume up to 260 pounds of insects per half-mile windbreak each year. Windbreaks also protect livestock from harsh weather, control wind erosion, increase field moisture, trap snowdrifts, and provide travel corridors for wildlife. See the next page for details.



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The Windbreak as Wildlife Habitat

Fifty-seven bird species use windbreaks in the United States. Studies show that you will attract more birds per fencerow if it has a mix of trees, shrubs, and grass than one with only grass. Trees attract hawks and owls, while short trees and shrubs attract ground nesters. Decaying trees provide food and nest sites for some animals. Most wildlife will begin to populate a new windbreak after 5 years.

A typical windbreak has four to six rows of trees and shrubs. However, the more windbreak rows, the better for wildlife. Plant rows perpendicular to the prevailing winds. In areas with snow, make sure the most windward row is at least 100-200 feet from buildings, driveways, and feed bunks to provide for snowdrifts. Or plant one or two shrub rows 50 feet windward of the main windbreak to trap snow.

Typical Windbreak

Plant type	No. of Rows	Spacing Within Rows*
Conifer tree (windward row)	2-3	6-20 feet
Deciduous tree (middle row)	1-2	6-15 feet
Shrub (leeward row)	1	3-6 feet

*Spacing between rows is typically 12-16 feet.

Create a "wildlife windbreak" by providing the following:

Perch poles, snags and birdhouses.

Add birdhouses or at least three snags (standing dead trees) per fence row mile to encourage cavity nesters. Rock and brush piles within the windbreak will add cover.

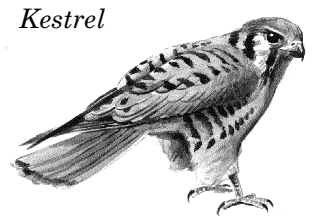
Food plots or fruit-bearing shrubs on the lee side.

Windbreaks provide shelter from the wind. Food plots may also get a chance to warm up in the sun, especially during the cold months.

Windbreaks between different habitats.

Wildlife prefer using a travel corridor between food and cover sites, e.g. a windbreak connecting a woodlot and wetland.

However, windbreaks are not the answer for every situation. Do not plant windbreaks in wide expanses of grassland. Some grassland species will be at higher risk from predators and cowbird parasitism. Overgrown fencerows may also support noxious weeds which should be pulled, clipped or spot-sprayed for removal.



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A Native Plant Windbreak

Consider these plants, which are native cover and food sources, for your windbreak:

Conifers	Deciduous Trees	Shrubs
Douglas-fir western hemlock western red cedar	Oregon white oak big leaf maple vine maple red alder birch	Mockorange red and blue elderberry red flowering current serviceberry snowberry wild roses (bald hip, Nootka)

Native trees and shrubs are available at nurseries, the Oregon Department of Forestry, and some soil and water conservation districts.



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Forest as Wildlife Habitat

Squirrel



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Forests grow in stages, starting with an event that opens up a stand such as fire, insect and disease attacks, or timber harvest. These areas then naturally progress to grasses, shrubs, seedling trees, saplings, mature trees, and finally to old-growth trees. Most forests on private lands have been recently cleared and are in the young forest stages. Young forest wildlife includes deer, elk, chipmunks, juncos, western bluebirds, red squirrels, ruffed grouse, and MacGillivray's warbler. To encourage more wildlife in your forest, consider the following:

Preserve or create snags and down logs.

Almost 30 percent of the amphibians, reptiles, birds, and mammals in a forest use snags or down logs at some time. Private woodlands in Oregon have the potential of increasing cavity nesters by 60 to 94 percent. Avoid disturbing existing large down logs, stumps and uprooted stumps. Increase the number of large-diameter snags to 10 or more per acre. Girdle non-marketable trees that must be cut from a stand and leave for a snag. This can reduce removal costs and damage from felling culled trees.

Make brush piles from slash.

Woody debris provides food and cover for salamanders, snakes, small mammals, and birds that in turn become food for forest carnivores and raptors. Stack limbs from felled trees into piles and place piles near forest edges. A pipe laid under the pile will provide space for hiding. Leaving slash saves time and labor for removal and returns nutrients to the soil. In dry areas, you will need to balance the wildlife benefits with fire hazards. For more information on fire protection, contact a USDA Forest Service office or Oregon Department of Forestry office for the publication "Home Protection Guide."

Favor mast-producing trees like oak, maple, and ash.

Mast is the berries, nuts, and seeds of trees that provide food for wildlife. Oak woodlands, a rare habitat in the Willamette Valley, supports more than 150 different kinds of wildlife, including the acorn woodpecker, the sharptail snake, and western gray squirrel. Mast trees can also provide timber, seed sources, and diversity against insect and disease infestations.

Seed trails, logging roads, and forest openings to grasses and legumes.

Grasses and legumes control erosion and increase insects, nesting cover, and forage for wildlife. Allow shrubs, vines, and native blackberries to develop on the forest edge where they can protect the woodland from drying winds and where timber quality is usually poorer.

Increase woodlot diversity.

As the number of different plants increase in a woodlot, the more wildlife can find the food and shelter they need. Uneven-aged forest stands have more diversity than even-aged stands that result from clearcuts. During thinning operations, consider keeping patches of unthinned or overtopped trees. Protect rare tree populations of Oregon white oak forests, Willamette Valley ponderosa pine, and Columbia Basin shrub-steppe.



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The Wetland as Wildlife Habitat

Less than 15 to 62 percent of the historic wetlands remain in Oregon. A wetland is an area with wet soils or standing water that can support water-tolerant plants, be it a marsh, a wet streamside, or seasonal pond. These valuable areas filter pollutants, provide flood control, recharge groundwater, and enhance wildlife habitat. Wetlands support mammals, waterbirds, turtles, amphibians, and songbirds, including the yellow rail, great blue heron, western pond turtle, Oregon spotted frog, red-legged frog, marsh wren, and many ducks and geese. Here are some ways to protect wetland habitats:

Do nothing.

Wetland "enhancement" often means changing wetlands to meet people's desires. This is not always best for the wetland or the wildlife it supports. A healthy wetland has a thriving native plant and wildlife community. A degraded wetland has noxious weeds and no longer provides many of the wetland benefits. For example, a degraded wetland that is choked with invasive reed canarygrass and filled with sediment may be improved with weed control and excavation. Seek the help of a professional if considering major wetland changes. Otherwise, consider the small-scale improvements that follow...

Fence and buffer the wetland.

Fencing is one of the easiest ways to protect a wetland from livestock and people pressure. Consider replacing pasture or lawn with native trees, shrubs, and plants. Native plants require less maintenance, as they are usually more drought-tolerant and pest-resistant than cultivated areas. See other fact sheets in this series for more information on fencing and riparian areas.

Plant native vegetation.

Although exotic plants may be attractive to you, wildlife are more likely to use native plants. Use caution when planting near open water. Too many plants or the wrong kind can choke a pond. If the wetland is not degraded, avoid planting.

Remove noxious or exotic plants.

Noxious weeds are not native to the area and grow unchecked by their natural enemies. Their biology allows them to spread rapidly and they quickly take over natural communities. Contact your county weed control board, Extension Service office, or Oregon Department of Agriculture Noxious Weed Program at (503) 986-4621, to get a list of noxious weeds and the best ways to control them

Designate trails.

Trails can increase your enjoyment and appreciation of wetlands. Trails also keep disturbances to a minimum and provide wildlife with unbroken stretches of habitat. Paths may be natural, lined with wood chips (make sure chips are not treated with pesticides), or a boardwalk. Avoid gravel as it is noisy and may reduce your wildlife sightings.

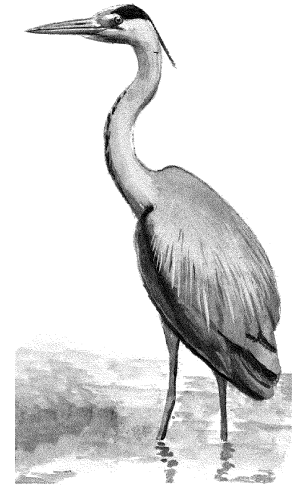
Identify and preserve seasonal ponds.

Seasonal ponds are often little more than large depressions in the ground that hold water until the dry months. The combination of water, insects, and lack of fish or other predators makes these areas prime breeding habitat for amphibians. Frog calls in the spring and wetland plants will help you locate the ponds. Retain woody debris, litter depth, and plant cover in these areas.

Avoid stocking fish.

Fish stocking may be appealing, but it is rarely beneficial to a wetland and may be illegal. Non-native fish or fish not found in adjacent waterways may escape into local waters and throw the natural community out of balance. This often happens during a flood. Consult a professional before stocking fish.

Great Blue Heron



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Cropland as Wildlife Habitat

Raccoon



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Service

Leave unharvested rows on field edges.

Leave unharvested grain, legume, and grass strips along fencerows, at fence corner, and in forest borders to provide food, nesting, and travel lanes next to cover.

Avoid mowing grassed waterways and grass strips during the nesting season.

Grassy areas like waterways, grass strips along fence lines, and odd areas in field corners can be left undisturbed from April 1 to August 1 to protect nests. Waterways can also provide food, cover, and travel lanes through cropland.

Practice conservation tillage.

This type of tillage leaves at least 30 percent plant residue on the soil. Migratory birds will stop to eat waste grain and weed seeds on their flight south. Canada geese and northern flickers may use these fields during the winter.

Limit pesticide use.

Use buffer zones to guard against drift and runoff into important or unique habitats, such as wetlands. Where practical, eliminate use of pesticides around field edges, corners, fencerows, nesting sites, streams, and wetlands. Find alternatives to pesticides when possible and use pesticides only when the cost of pesticides is outweighed by the damage to the crop. Select pesticides that are the least toxic to wildlife, spray in the evening when bees are less active, and follow the label directions.

The Buzz About Bees

About 30 percent of our diet is the result of a bee pollinating the flower of a fruit tree or a vegetable plant. Surprisingly, most of the 5,000 native bee species in the United States are solitary and nest in holes in the ground or in twigs. Since these bees do not have to defend a hive, they are not aggressive and rarely sting. You can encourage these friendly bees by building a bee box. Follow these easy steps:

1. Use a block of untreated lumber (3 to 5 inches thick).
2. Drill 1/8-inch to 5/16-inch diameter holes about 90 percent of the way into the block. The 5/16-inch holes work best for orchard bees that are good pollinators of fruit trees.
3. Space the holes about 1/2-inch to 3/4-inch apart.
4. Hang your bee blocks under roof eaves or a thick tree branch for protection from sun and rain.



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For
Help

- USDA Natural Resources Conservation Service and soil and water conservation districts provide on-site advice to create, restore, or protect stream corridors, wildlife habitat, and wetlands through several cost-share programs. Cost-share programs include the Conservation Reserve Enhancement Program, Environmental Quality Incentives Program, Wetland Reserve Program, and the Wildlife Habitat Incentive Program. Look up your local office in the phone book's blue pages under federal government, Department of Agriculture.
- The US Fish and Wildlife's Partners for Fish and Wildlife and Jobs in the Woods Programs fund projects that create, enhance, or restore wetlands and stream corridors on private lands. Look up your local office in the phone book's blue pages under federal government.
- The Oregon Department of Fish and Wildlife's Wildlife Habitat Conservation and Management, Riparian Tax Incentive, and Naturescaping programs provide technical help, wildlife plans, and tax incentives for projects that create, improve or protect wildlife habitat. Look up your local office in the phone book's blue pages under state government.

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