Woodland
Fish and Wildlife

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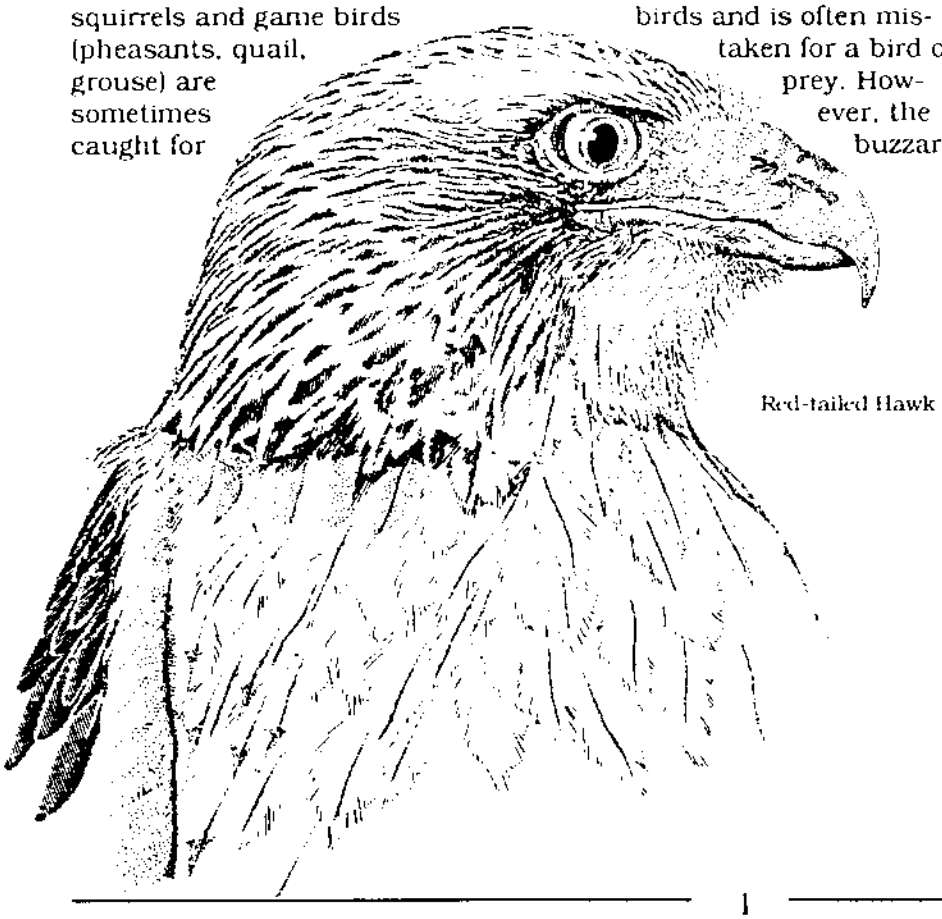
Hawk, Eagle and Osprey Management On Small Woodlands

Raptors, or birds of prey, include hawks, eagles and osprey. Raptors benefit small woodlots because most of their food is small mammals with some birds and reptiles.

Many of the small mammals that hawks take from woodlots are the same species that cause damage to young conifers. Small game mammals such as rabbits, squirrels and game birds (pheasants, quail, grouse) are sometimes caught for food, but not in numbers which would impact the populations of these species if proper habitat is available.

Many raptors are similar in appearance and difficult to identify, so a good bird book is important for certain identification of individual species.

The **turkey vulture**, or **buzzard**, is one of the most frequently seen large soaring birds and is often mistaken for a bird of prey. However, the buzzard is a scavenger, not a bird of prey, and feeds on the remains of dead mammals and birds. In the Pacific Northwest, the turkey vulture is migratory, arriving in early spring after wintering in southern climates.



Red-tailed Hawk

Hawks

Oregon and Washington provide habitats for a wide variety of hawks, some of which are present during all months of the year. Other hawks are migratory and move to the southern United States, Mexico, Central America and South America during the winter months. Certain species of hawks remain near their summer nest sites or move only a short distance to find winter food supplies.

During fall and winter many large broad-winged hawks (buteos) can be seen sitting on power poles, fence posts or other perches between Seattle and Eugene or in the Columbia Basin counties of eastern Oregon and Washington. Many raptors spend the winter near grasslands, shrublands or fallow fields where they hunt rodents for winter food. Woodlots with a variety of vegetation types and

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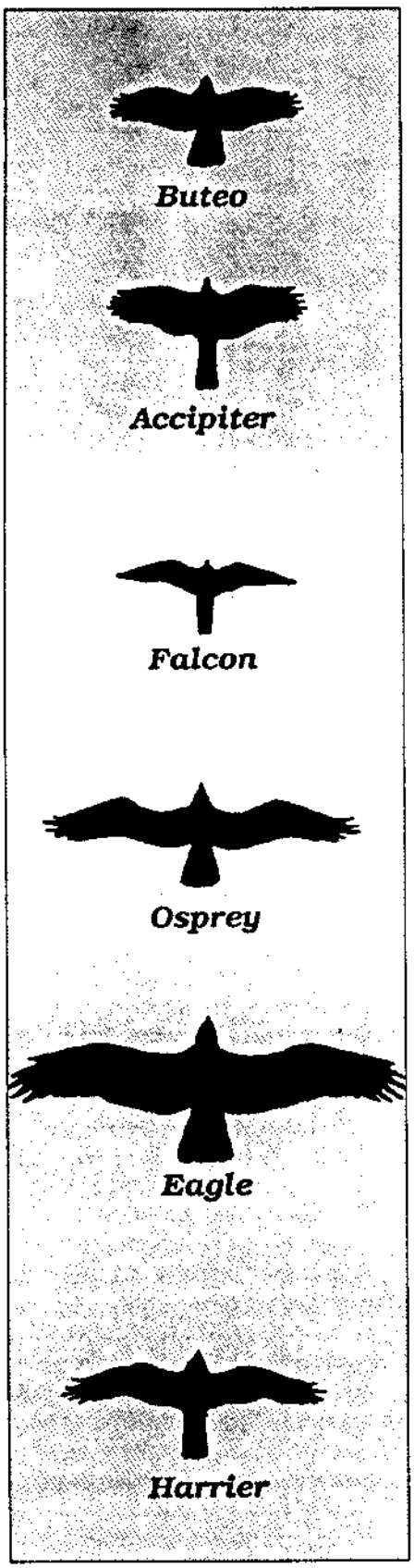

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stand structures provide a valuable winter habitat for hawks. Saw-log-size conifers provide roost sites and shelter from inclement weather. Openings in stands or young plantations provide habitat for small mammals and birds which provide winter food.

Broad Winged

Hawks can be divided into several groups. Birds within each group have similar habits - and behavior. The **broad-winged hawks**, or **buteos**, include the commonly seen **red-tailed hawk**. Other hawks in


Ferruginous Hawk

this group are the **Swainson's**, **American roughlegged** and **ferruginous**.

The Swainson's hawk is most commonly seen east of the Cascade Mountains and is one of the hawks that leaves in early September for winter habitats in Argentina. Hawks, along with the coyote, are often referred to as "nature's mousetrap" because of their diet. Mice, gophers, rabbits and tree squirrels compose the largest portion of the broad-winged hawks' diet, with an occasional garden-variety snake added. Most of the mammals which are food for hawks can cause significant damage to young woodlot timber stands. In general the food of the buteos is approximately 40-60 percent rodents and rodent-like mammals. Another 40-50 percent is rabbit and other medium sized mammals and small birds up to pheasant size. Reptiles make up about 5-10 percent of their diet.

Harrier


Northern Harrier

The **marsh hawk**, or **northern harrier**, is a bird of the open, fields, grasslands and marshes. As it glides over the landscape, it is easily recognized by its long wings and tail and distinguishing white rump-patch. This hawk is truly a "mouse trap" because it eats approximately 60-65 percent small mammals and 30-35 percent small birds.

Accipiters

A third group of hawks, accipiters or "blue darters," can be called hawks of the forest. These secretive hawks, including the **goshawk**, **Cooper's** and **sharp-shinned** can be recognized by their rapid, darting flight through the forest. Frequently flying at low levels they seemingly care little for safety as they dart through the dense forest canopy. The accipiter hawks are found throughout the

forests of the Pacific Northwest and the foothill mixed-conifer hardwood forests of the lower valleys. The diet of accipiters

Northern Goshawk

deviates significantly from the "mouse trap" hawks because they live primarily on forest birds. The small robin-sized sharp-shinned hawk is a common visitor to winter backyard bird feeders where it finds small birds easy prey.

Falcons

A small hawk, which is actually the smallest member of the falcon group, is the **kestrel** or "**sparrow hawk**." This hawk lives in a variety of habitats and will used a variety of nesting opportunities from tree cavities to abandoned buildings. It is easily recognized by its bright cinnamon-colored back, black face patch and its unusual tail "bobbing" habit when sitting on a power line or fence wire. You will often see this small hawk hovering in the air by rapidly beating its wings and fanning out its tail as it watches for mice and insects, the majority of its diet.

The other falcons are perhaps the most mysterious birds in the hawk family. They are rarely seen near human settlement. In recent years, they were near extinction as a result of egg-shell thinning caused by DDT. The **peregrine** and **prairie falcon** are the most common species in Oregon and Washington. These falcons are usually

Peregrine Falcon

associated with uninhabited tracts of land with large rock formations, where the two species nest and roost. Birds make up a large portion of their diet and they are capable of taking birds the size of a mallard duck and pigeon on the wing. Within the past decade the peregrine falcon has increased in numbers with the reintroduction of the species to its former range and the decrease in the use of DDT in North America. A few kinds have even been introduced in metropolitan areas.

Eagles

The two largest predatory birds in the Pacific Northwest are the **golden eagle** and **bald eagle**. The golden eagle lives primarily east of the Cascade Mountains in open country. It feeds on small mammals and birds and nests on rock cliffs or in large trees capable of supporting heavy stick nests. The exception is a population of golden eagles that live in the Olympic Peninsula rain forest. Also, a few golden eagles nest in the San Juan Islands and the coniferous forests of western Washington.

The second eagle found in the Pacific Northwest is the bald eagle, our national symbol. This elegant bird is most often seen in conjunction with large river systems, salt water or lakes where it finds its primary food supply of fish and aquatic-associated animals. Dead and dying waterfowl are a common food source during the winter, but it is not uncommon to see bald eagles feeding on deer, elk and livestock that have

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Golden Eagle

HAWKS OF OREGON

BIRD	WHERE FOUND	TIME OF YEAR	TYPE OF HABITAT USED
Turkey Vulture *(Cathartes aura)*	Statewide	Spring, summer and fall	Open country, woodlands, farmlands, forested areas
Bald Eagle *(Haliaeetus leucocephalus)*	Statewide	Year around	Mainly near larger bodies of water–Columbia River; nests in mountain ranges
Golden Eagle *(Aquila chrysaetos)*	Mainly East of Cascades—straggles to West side	Year around	Open areas, hilly areas, mountainous terrain
HARRIERS			
Northern Harrier *(Circus cyaneus)*	Statewide	Year around	Hilly and open country, farmlands
ACCIPITERS (Long tails, short rounded wings, woodland dwellers)			
Sharp-Shinned *(Accipiter striatus)*	Statewide	Year around	Mixed woodlands
Cooper's *(Accipiter cooperii)*	Statewide	Year around	Open mixed woodlands, riparian areas
Goshawk *(Accipiter gentilis)*	Statewide	Year around	Deep conifer forests and mixed areas
BUTEOS (Broad, banded tails, rounded wings, soaring birds)			
Red Tailed *(Buteo jamaicensis)*	Statewide	Year around	Variety of habitats—often woods near open fields
Swainson's *(Buteo swainsoni)*	East of Cascades	Spring and summer	Open plains and prairie areas
Rough Legged *(Buteo lagopus)*	Statewide	Winter only	Open country—often seen perched on fence posts and poles
Ferruginous *(Buteo regalis)*	East of Cascades	Spring and summer	Dry, open country
FALCONS (Fastest fliers, long, pointed wings, bent back at middle)			
American Kestrel *(Falco sparverius)*	Statewide	Year around	Open country, farmlands, urban areas
Merlin *(Falco columbarius)*	Statewide, rare breeder East side	Year around	Variety of habitats
Prairie Falcon *(Falco mexicanus)*	East of Cascades; straggles to West side	Year around	Open country, prairies
Peregrine Falcon *(Falco peregrinus)*	Statewide (rare)	Year around	Open wetland areas, tall buildings in cities
Gyrfalcon *(Falco rusticolus)*	Rare visitor	Winter	
Osprey *(Pandion haliaetus)*	Statewide	Spring and summer	Near bodies of fresh or salt water

& WASHINGTON

NESTING SITES	MAIN FOODS	OTHER NOTES
No nest—eggs laid in a cave, old stump or hollow log	Carrion	Commonly called "Buzzard." When soaring, wings form "V."
Bulky platform of sticks high in big trees or inaccessible cliffs	Fish and carrion	Requires 4–5 years to acquire adult plumage. Wings straight across when soaring.
Bulky platform of sticks, usually on a cliff, sometimes in high tree	Small mammals, birds, snakes, carrion	Has feathered legs in contrast to bare legs of bald eagle.
On ground in grass, lined with feathers	Rodents, frogs	Formerly called Marsh hawk. White rump patch distinctive. First year males look like females
Old crow, magpie or squirrel nests	Small birds	These three birds are very similar with some size overlap and difficult to tell apart.
Same as Sharp-Shinned	Small birds and mammals; can take young game birds	
Large mass of twigs in tall tree	Birds, grouse, rabbits. Not numerous to impact populations.	
Mass of sicks—usually high up in big tree	Rodents and other small mammals	
Bulky mass of sticks lined with leaves of bark in cottonwood or juniper—usually not over 20 feet high	Rodents and insects	These hawks are often seen soaring over farmlands and have been called "chicken hawks." As a result they are often shot illegally. Actually they are the most beneficial group of hawks and should be carefully protected.
Does not nest in this area	Rodents and rabbits	
Mass of sticks in juniper or sagebrush—usually not more than 20 feet above ground	Rodents and rabbits	
Holes and cavities in trees	Rodents, insects, reptiles	Formerly called Sparrow Hawk.
Sticks on ledges or in trees in open woods	Rodents, small birds	Formerly called Pigeon Hawk.
Sticks on ledges in high cliffs	Small mammals and birds	
Sticks on ledges or old nests of other hawks	Shorebirds, waterfowl, other birds	DDT problems formerly
Large mass of sticks, weeds, etc. in tall trees, on platforms, on buildings or in cliffs	Fish	Heavily impacted by DDT, but now fairly common.

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died from winter starvation, road kill, or disease. Although associated primarily with large bodies of water, this bird depends upon large open-topped conifers, primarily ponderosa or yellow pine, and Douglas fir, for nesting platforms. At times the nest site will be 5-7 miles from the nearest large lake or river. Two of the nation's largest winter concentrations of bald eagles occur in the Klamath Lake area of Oregon and the Skagit River system of Washington.

Osprey

Ospreys, often called **fish hawks**, are in a class alone because they feed entirely on fish. This is one of the few species of birds found worldwide. It is doubtful that you will have this bird around unless there is a pond or large stream nearby. Osprey can be bothersome if you have a stocked trout pond, but their fishing activities are spectacular to watch and not usually bothersome.

Habitat Management

Woodlots, large and small, provide an opportunity for predatory birds to find food, nest sites and seclusion from urban development and human disturbance. Habitat requirements for the hawks can easily be worked into a variety of woodlot management plans. Habitat requirements for hawks do not interfere with or constrain a well managed conifer or mixed conifer/hardwood woodlot.

Because they eat primarily rodents, mice, gophers and small mammals, hawks support the woodlot manager by assisting in the control of common woodlot pests that destroy commercial trees. Gophers, which cause more damage to forest stands than all other rodents combined, make up a significant part of raptor diets.

Woodlots provide several important habitat needs for hawks that would otherwise be lost to urban sprawl and development. Predatory birds, like other forms of wildlife, survive best when there is a diversity of vegetative types and a variety of vegetative structures (size and shape) available for nesting, roosting and feeding. Woodlots provide this diversity among farm fields and urban development. The variety of vegetative structures on a woodlot from small, dense, un-thinned stands of saplings to sawlog stands with open canopies and clear understory provide the necessary diversity for living space.

Nesting habitat is one of the most critical woodlot elements for the hawks. Most hawks, except for the small kestrel, nest high above the ground in tall trees. Both conifer and hardwood, maple, walnut, oak and cottonwood are species to manage for raptor nest sites. Nest boxes for kestrels can be placed at the interface between established stands and openings if dead tree cavity habitat is not available. A single tree managed to extend above the commercial forest canopy, during some portion of stand rotation, is an excellent nest site for hawks.

Hawks are particularly vulnerable to disturbance during the egg laying phase of nesting, which can occur from January through March. Most species lay only three-to-five eggs. Management activities and travel near active nest sites should be avoided or restricted during this time.

Perch trees or snags scattered through the woodlot also provide valuable habitat. Hawks commonly use tall dead trees for


Kestrel

resting and as a lookout point for prey. Woodlot management for these habitat elements can be accomplished by referring to the publication, "Managing Small Woodlands for Cavity Nesting Birds" published in October 1991. When stands are rotated and it is not possible to leave tall snags or perch trees because of safety constraints, perch poles can be installed to provide "look-out posts" for hawks. A pole, 20-25 feet in height, with a 3-4 foot crossarm can be erected to serve as a perch. This provides an opportunity for hawks to be on the job watching for rodents which may damage young regeneration. Christmas tree plantations are excellent places for perch poles.

If rodenticides are used to control gopher, rabbits or mice, the timing of application and

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careful selection of the treatment areas can reduce the risk of losing a resident hawk that may eat a "sick" rodent. Forest rodent control is usually most beneficial in late summer or early fall. This is the best time for reducing risk to resident hawks. The young have fledged and many hawks have moved to winter habitats or started their migration south. When it is necessary to implement a rodent control program with a resident hawk in the woodlot, an untreated buffer can be left around the nest or perch tree and trapping substituted within the buffer area.

With the inclusion of a few unique habitat needs, hawks can be a part of woodlot management that normally provides a diversity of vegetative types and forest stand structures. Unrelated to woodlot vegetation management, but equally important for good hawk habitat is the control of disturbance during nesting and the elimination of shooting of birds of prey, which is a violation of both state and federal law.

In the state of Washington, a woodlot within a bald eagle territory requires a "bald eagle management plan," which can be developed with the assistance of a representative of the Washington Department of Wildlife. The plan considers both the woodlot's owner's management desires and the biological needs of the bald eagle.

Raptors have long fascinated humans and have been the prized hunting birds of royalty. Though persecuted rather vigorously in the past, knowledge has shown they are a desirable addition to an area. Their presence is a positive factor both biologically and aesthetically. Few other groups of birds are as fascinating to watch, help control noxious pests, or can match the 150 mile per hour dive-speed of some of the falcons! □

Illustrations by Sharon Torvik, Courtesy the Oregon Department of Fish and Wildlife.

Checklist

In evaluating your land for hawks remember the needs of the various species vary greatly. What is good for one species may be less beneficial for another.

- ❑ Mature timber stands - Good for red-tailed hawks.
- ❑ Young successional stages - Good for accipiters.
- ❑ Control of human disturbances - Good for all species.
- ❑ Protected riparian areas with big trees - Good for all.
- ❑ Tall snags - Good for cavity nesters and for perches.
- ❑ Tall live trees - Good nest & perches for several species.
- ❑ Thick, large timber patches - Good nesting for forest species.
- ❑ Control of livestock in spring - Important for ground nesters.
- ❑ Artificial perches and nest platforms - Good for ospreys and some hawks.
- ❑ Heavy use of pesticides and rodenticides - Bad for all.

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Our Purpose...

This leaflet was written by Richard J. Pederson, Wildlife/ Silviculturist Program Manager, U.S.D.A. Forest Service, Pacific N.W. Region, and Ron Shay, Woodland Fish & Wildlife Project Coordinator.

The Woodland Fish and Wildlife Project is a cooperative effort among the World Forestry Center, Oregon State Department of Forestry, Washington State Department of Natural Resources, Oregon State University Extension Service, Washington State University Cooperative Extension, University of Washington Center of Streamside Studies, Oregon Association of Conservation Districts, Oregon Small Woodlands Association, Washington Farm Forestry Association, Oregon Department of Fish and Wildlife, Washington Department of Fisheries, Washington Department of Wildlife, Oregon Soil Conservation Service, Washington Soil Conservation Service and the USDA Forest Service. The World Forestry Center serves as the coordinating organization for the project.

The Woodland Fish and Wildlife Project was initiated to provide information on fish and wildlife management to private woodland owners and managers. It is the intent of the organizations involved in this project to produce publications that will serve as practical guides to woodland owners.

Each publication is intended to be complete in itself. Users may find it convenient to collect all publications in this series in a three ring binder to form a permanent reference file. Woodland Fish and Wildlife Project publications range from an overview of fish and wildlife opportunities on woodland properties to specific publications concerning techniques for managing individual species.

These publications can be obtained from any of the cooperating organizations or by contacting the World Forestry Center, 4033 SW Canyon Road, Portland, OR 97221, (503) 228-1367.

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