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C. Other Federally Listed Species Within the Range of the Northern Spotted Owl

Nine wildlife species within the range of the northern spotted owl are listed by the federal government as threatened or endangered: the northern spotted owl, marbled murrelet, Oregon silverspot butterfly, Aleutian Canada goose, bald eagle, peregrine falcon, gray wolf, grizzly bear, and Columbian white-tailed deer. Discussions of species ecology for the spotted owl and marbled murrelet are found in Sections A and B of this chapter, respectively. Habitat needs of the other seven species are reviewed below, followed by Table III.8, which lists for each of the nine species its federal and state status and in which HCP planning unit each could potentially occur.

Oregon Silverspot Butterfly

The Oregon silverspot butterfly (*Speyeria zerene hippolyta*) is the only federally listed species of arthropod that is found in Washington (WDW 1993a). This butterfly is currently listed by the federal government as threatened and by the state as endangered. However, no critical habitat in Washington has been designated under the Endangered Species Act (WDW 1993b).

The Oregon silverspot is found only in habitats that support its larval host plant, western blue violet (*Viola adunca*). Such habitats include coastal salt-spray meadows and open fields. In Washington, potential habitat for the Oregon silverspot is limited to the coastal grasslands on the Long Beach peninsula near Loomis Lake (WDW 1993b; WDW 1991). Adult butterflies are thought to rest and feed in adjacent open spruce/shoreline pine forest glades, where they are protected from wind and can feed on nectar available from a number of plant species. (WDW 1993b; WDW 1991). The presence of heavy grass thatch and woody plant invasion threatens the silverspot butterfly habitat. DNR manages accreted lands on the Long Beach peninsula that could contain Oregon silverspot habitat.

Aleutian Canada Goose

The Aleutian Canada goose (*Branta canadensis leucopareia*), a subspecies of the Canada goose, was downlisted by the federal government from endangered to threatened in 1990 (Federal Register v. 55, no. 239, p. 51112). The subspecies is listed as endangered by the state. The subspecies is distinguished from the other locally ubiquitous species by a broad white ring at the base of the neck. A major cause of the early decline of the Aleutian Canada goose was predation by foxes and other small mammals in the subspecies' nesting areas which are located on Buldir and Chagulak islands in the Aleutian Archipelago and on Kaliktagik in the Semidi Islands in Alaska. In the early 1800s, foxes were introduced onto the Aleutian islands and neighboring islands as a fur supply and some rodents were inadvertently introduced with the landing of ships. The winter range was not defined until the early 1970s. Wintering areas extend from Alaska to California and into parts of Japan. From less than 800 individuals in 1975, their numbers have increased to 12,000-14,000 individuals in 1994. The most recent counts indicate about 20,000 individuals. Currently the San Joaquin Valley, northern California coast, and Sacramento Valley form the subspecies' main wintering area, but they also winter in western Oregon and southwestern Washington. They regularly stop in the Willamette Valley of Oregon in September or October. Their winter range is expanding as the population increases. The species may occur in the area covered by

the HCP but only as a migrant or winter resident. Habitat used during migration or winter residency includes lakes, ponds, wetlands, grasslands, and agricultural fields. Control of foxes, use of seasonal Canada goose hunting closures to reduce incidental take, and conversion to nontoxic shot have all contributed to the recovery of the subspecies.

Bald Eagle

The bald eagle *(Haliaeetus leucocephalus)* is listed by both the federal government and the state as threatened (WDW 1993a). Throughout Washington, the bald eagle typically occurs along the coasts, major rivers, lakes, and reservoirs (USDI 1986). Potential habitats are riparian areas along rivers, streams, lakes, sloughs, and reservoirs; coastal estuaries and beaches; freshwater beaches; and mature and old-growth forest stands within 1 mile of water (Brown 1985).

Washington supports the largest population of nesting bald eagles in the seven-state area covered by the Pacific States Bald Eagle Recovery Plan (USDI 1986). Most nesting in Washington occurs on the San Juan Islands and along the Olympic Peninsula coast; however, nesting territories are also found along Hood Canal, on the Kitsap Peninsula, in Island, Pierce, and Thurston counties, along the Columbia River in southwestern Washington, in the Cascade Range, and in eastern Washington (USDI 1986). Bald eagles typically nest near water, usually on prominent features overlooking aquatic foraging areas (Stalmaster 1987; Anthony and Isaacs 1988). In western Washington, distance between nest sites and water averages 282 feet (Grubb 1976); within the seven-state recovery area, nest sites are generally within 1 mile of water (USDI 1986). The average territory radius ranges from 1.55 miles in western Washington to 4.41 miles along the lower Columbia River, where reproduction rates are low (Grubb 1980; Garrett et al. 1988). The three main factors affecting distribution of nests and territories are:

(1) proximity to water and food,

(2) suitable nesting, perching, and roosting trees, and

(3) the number of breeding eagles (Stalmaster 1987).

Nest sites in western Washington are found most commonly in Douglas fir and Sitka spruce trees. Nest trees average 116 feet tall and 50 inches dbh and typically exceed the U.S. Forest Service's minimum diameter-at-breast-height specifications for old-growth inventory (Anthony et al. 1982).

Washington also supports the largest population of wintering bald eagles in the seven-state recovery area. Primary wintering areas include the Olympic Peninsula, the San Juan Islands (particularly Cypress Island), Puget Sound and its tributaries, Hood Canal, and the Cowlitz and Columbia rivers. The Skagit River supports one of the largest concentrations of wintering bald eagles in the contiguous United States, with as many as 553 individuals counted during peak periods. At least six bald eagle winter communal roost sites occur along the North Fork of the Nooksack River, all at least partially on DNR-managed land. Food availability is the major factor that attracts bald eagles to wintering locations (Stalmaster 1987). Many areas that have abundant populations of overwintering waterfowl or salmon runs also support large concentrations of wintering eagles (Biosystems Analysis, Inc. 1984; Keister et al. 1987).

Bald eagles use perches during nesting, hunting, feeding, territorial maintenance, and behavioral displays (Stalmaster 1987). Eagles select perches that provide a good view of the surrounding territory; typically, the tallest perch tree available is preferred (Stalmaster 1987). Along the Nooksack River, dead trees are strongly preferred as daytime perches during the winter; tree species commonly used are black cottonwood, big leaf maple, or Sitka spruce (Stalmaster and Newman 1979). Because of its relatively low height, red alder is used less often (Stalmaster 1976).

Wintering bald eagles often roost communally in single trees or large forest stands. Most of these areas are near a rich winter food source (typically anadromous fish and water fowl) and in forest stands that are of uneven ages and have some old-growth characteristics (Anthony et al. 1982). Many roost sites are in ravines and draws that protect eagles in bad weather (Hansen 1978; Keister 1981). Roost sites are generally positioned in the tallest, most dominant trees that provide unobstructed views of the surrounding landscape (Anthony et al. 1982). In western Washington, communal roost sites have been documented in black cottonwood, Douglas fir, western redcedar, western hemlock, and other tree species (Hansen et al. 1980; Anthony et al. 1982).

Anthony and Isaacs (1988) recommend that habitat alterations not occur within 1,312 feet of bald eagle nests and that disturbance activities within 2,625 feet of nests be restricted between January 1 and August 15. The Pacific States Bald Eagle Recovery Plan (USDI 1986) recommends temporary buffers of 1,312 feet around screened roosts and 2,625 feet around visible roosts. Timber harvests can occur, but only between November 1 and April 1. Along foraging areas, a 164- to 326-foot wide strip of tall perch trees should be maintained. Stalmaster (1987) recommends that a buffer zone of 820 to 984 feet be maintained where little screening cover is present. Under WAC 232-12-292, the Washington Department of Fish and Wildlife works with landowners to design site-specific management plans that provide flexible land use instead of setting standard buffer distances.

Peregrine Falcon

The peregrine falcon (*Falco peregrinus*) is listed by both the federal government and the state as endangered (WDW 1993a). In Washington, three subspecies occur: *F. p. anatum, F. p. peali,* and *F. p. tundrius* (Allen 1991), but only *F. p. anatum* is believed to nest here (Peregrine Falcon Recovery Team 1982; Johnsgard 1990). Fifteen nesting pairs of peregrine falcons were recorded along the outer coast, in the San Juan Islands, and along the Columbia River Gorge in 1990 (Allen 1991). Washington primarily provides important migratory and wintering habitat for peregrines, including estuaries such as Skagit River flats, Grays Harbor, and Willapa Bay, where falcons prey on large concentrations of waterfowl and shorebirds. *F. p. peali* and *F. p. tundrius* are present as winter migrants.

Most peregrine nests are on cliffs or high escarpments that dominate the nearby landscape, although office buildings, bridges, and river cutbanks have also been used for nesting (PFRT 1982; Craig 1986). Most preferred nesting cliffs are at least 150 feet high and can be found from sea level to 11,000 feet (PFRT 1982). Foraging habitat includes marshes, lakes, river bottoms, croplands, and meadows where peregrines prey primarily on songbirds, waterfowl, and shorebirds (Porter and White 1973). During the breeding season, peregrine falcons will travel as far as 17 miles from the aerie to hunt, although a hunting range of 10 miles is considered typical (Porter and White 1973; PFRT 1982).

Human disturbance during the nesting season can greatly inhibit peregrine falcon nesting success. Guidelines for protection of falcon nest sites include prohibition of land-use activities that alter or eliminate characteristics of hunting and prey habitat within 10 miles of aeries and of nesting habitat within 1 mile of a nest cliff. Disturbances and human activities should also be restricted from February 1 through August 1 within 0.5 mile of a nest cliff (PFRT 1984).

Gray Wolf

The gray wolf *(Canis lupus)* is listed by both the federal government and the state as endangered in Washington (WDW 1993a). This species ranges over large areas (Laufer and Jenkins 1989) and potentially occurs throughout the same range as that of the grizzly bear (see below), as well as the Washington Cascade mountains south to the Columbia River.

The gray wolf uses virtually any type of forest and natural opening as long as the level of human activity is low and there is an ungulate prey base (Laufer and Jenkins 1989). Because the wolf is currently becoming re-established throughout many parts of Washington and little data have been collected on its habitat use, all naturally vegetated lands should be considered potentially suitable habitat for this species. Vegetation types used include quaking aspen, mixed conifer, ponderosa pine, white or grand fir, alpine meadows, shrublands, riparian zones, marshes, bogs, and swamps (Thomas 1979). Wolf dens are normally located under logs or in rock outcrops.

The species is wide-ranging. On Vancouver Island, in temperate conifer forests similar to those in the area covered by HCP, two home ranges for wolf packs were 40 and 47 square miles (Scott 1979).

Grizzly Bear

The grizzly bear *(Ursus arctos)* is listed by the federal government as threatened in Washington (USDI 1993) and by the state as endangered (WDW 1993a). This species potentially occurs throughout the Cascade Range, from Canada south to near Yakima, and across the northern third of the state from the Okanogan Highlands to the Idaho border (Almack et al. 1993). The federally designated North Cascades Grizzly Bear Ecosystem extends through this region at elevations from about 492 to 10,778 feet. In the east- and west-side planning units of the HCP, DNR manages 122,300 acres in the North Cascades Grizzly Bear Recovery Area. The grizzly bear ranges over large areas and typically uses many vegetation types to fulfill its life requisites. Of special importance to bears are wet meadows, swamps, bogs, streams, and conifer, subalpine, and lodgepole pine forests, as well as alpine meadows and parklands (Brown 1985). However, these habitats alone would not be sufficient for supporting this species. Areas with little human disturbance may be preferred as habitat; many studies have shown the potential negative effect of human disturbance on grizzly bears (McLellan and Shackleton 1988; Kawsorn and Manley 1989; Mace and Manley 1993).

All naturally vegetated land types are considered suitable grizzly bear habitat. Den sites of grizzly bears can be found in nearly any type of forest, but are typically in coniferous forests. Bears normally select den sites on steep slopes near the tree line (Almack 1986). Bears forage in many vegetation types in order to obtain sufficient plant and animal foods. Their diet includes 124 species of plants, winter-killed ungulates, small mammals,

and anadromous fish (Almack et al. 1993). Some DNR-managed parcels of land within the federally designated North Cascades Grizzly Bear Recovery Area could potentially provide lower elevation spring habitat for grizzly bears.

Grizzly bears are wide-ranging. Knight et al. (1988 as discussed in USDI 1993) estimated a density of one bear per 16 square miles in the U.S. portion of the Selkirk Ecosystem (northeast Washington and northwest Idaho). Assuming a circular home range, a territorial bear would range over a distance of 4.5 miles, the home-range diameter. Ten miles is thought to be the minimum "long distance movement" for grizzlies in the Selkirk Mountains. (Almack 1986).

Columbian White-tailed Deer

The Columbian white-tailed deer (*Odocoileus virginianus leucurus*) is listed by both the federal government and the state as endangered in Washington. The deer's current range is limited to areas less than about 10 feet above sea level (USDI 1983). Approximately 700 to 1,000 Columbian white-tailed deer occur along the Columbia River (USDI 1983). They are found only in bottomlands and on several islands in an 18-mile reach of the Columbia River near Cathlamet, Washington, and in an area near Roseburg, Oregon (USDI 1983). In Washington, these deer occur in the Julia Butler Hansen Columbian White-tailed Deer National Wildlife Refuge, and on Puget, Brown, Jackson, Ryan, Little, and Hunting Islands, which are owned privately or managed by DNR. Several DNR parcels of land in the refuge and on Puget Island are leased to the U.S. Fish and Wildlife Service and private landowners. Some of the deer's range is within the Columbia Planning Unit of this HCP.

Potential habitat for the Columbian white-tailed deer includes Columbia River bottomland riparian forests (alder, cottonwood, and spruce), grassland, pastures, and farmland not occupied by black-tailed deer (WDW 1991). Columbian white-tailed deer are primarily grazers, feeding in active and abandoned farm fields and pastures within 750 feet of forest cover and forest parks (WDW 1991). The deer's historical habitats include tidal spruce swamps, park forest, open-canopy forest, sparse rush, and wetlands (USDI 1983). Spruce, alder, cottonwood, and willow are common tree and shrub species used by deer for foraging, resting, and thermal cover (USDI 1983).

Although the population of Columbian white-tailed deer is apparently doing well (i.e., down- or de-listing this population has been considered), range expansion has not occurred, primarily because black-tailed deer have taken over other suitable habitat along the Columbia River, precluding white-tailed deer from using these areas.

Table III.8: Federally listed wildlife, their state status, and their potential occurrence in HCP planning units

SE = state endangered, ST = state threatened (WDW 1993a); OESF = Olympic Experimental State Forest.

Species	State Status	Planning Unit: Klickitat	Columbia	South Coast	South Puget	Yakima	Chelan	North Puget	Straits	OESF
Federally listed as threatened:										
Northern spotted owl	SE	X	X	X	X	X	X	X	X	X
Marbled murrelet*	ST	X	X	X	X	X	X	X	X	X
Oregon silverspot butterfly	SE			X						X
Bald eagle	ST	X	X	X	X	X	X	X	X	X
Grizzly bear	SE				X	X	X	X		
Aleutian Canada goose	SE		X	X	X			X		X
Federally listed as endangered:										
Peregrine falcon	SE	X	X	X	X	X	X	X	X	X
Gray wolf	SE	X	X		X	X	X	X		
Columbian white-tailed deer	SE		X							

*Potential habitat for the marbled murrelet exists in the east-side planning units. However, at this time, the marbled murrelet is not known to inhabit the east-side planning units.