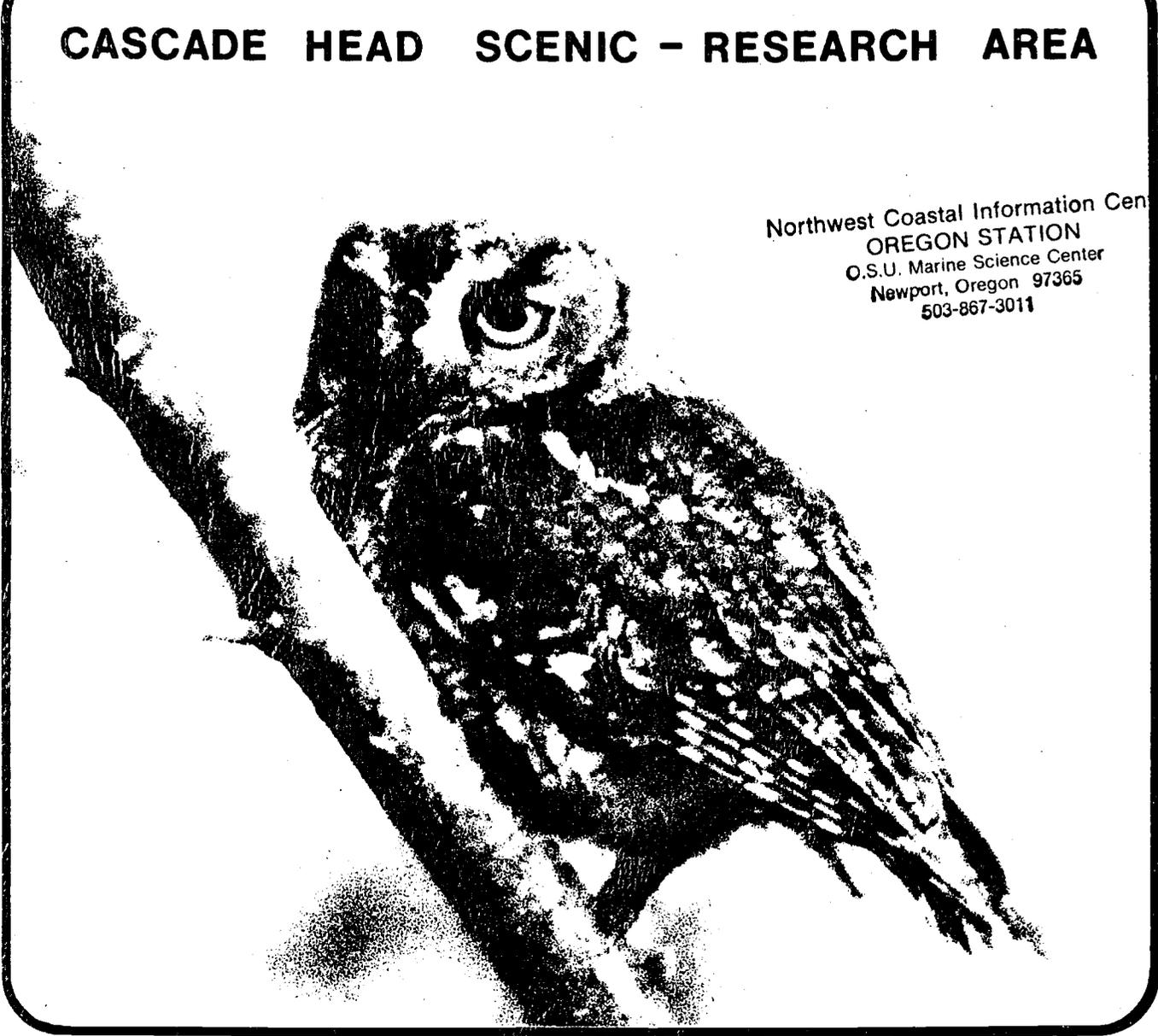


FISH & WILDLIFE RESOURCES

*file: Cascade Head +  
Salmon River*

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257*

CASCADE HEAD SCENIC - RESEARCH AREA



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# Siuslaw National Forest



Region 6 Pacific Northwest  
U.S. Forest Service  
Department of Agriculture

FISH AND WILDLIFE RESOURCES  
OF THE  
CASCADE HEAD SCENIC-RESEARCH AREA

Report Prepared  
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Siuslaw National Forest  
Pacific Northwest Region  
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## FISH AND WILDLIFE RESOURCES OF THE CASCADE HEAD SCENIC-RESEARCH AREA

Fish and wildlife species using the Area were identified. Information on occurrence, abundance, habitats, status, recreational or commercial use, and economic value of these species is presented.

### METHODS

Information was obtained from literature, personal communication with area residents, Hebo Ranger District personnel, researchers, Oregon Department of Fish and Wildlife, and two years of intermittent field work, by Forest Wildlife biologists.

#### Species Present

The kinds of animals present on the area were identified from sightings of the animal or its sign (e.g. tracks, droppings, burrows). These sightings were made by Forest wildlife biologists and other people during the past 35 years. Although all the animals listed were not seen during the study period (April - July 1975), all are expected to currently use the area.

#### Occurrence

The occurrence of each wildlife species is described, based on when it is present, and if it breeds on the Area. The categories used to describe occurrence are: Resident, present all year - breeds on the Area; Summer Resident, found from spring through summer - breeds on Area; Summer Visitor, occurs from mid-summer through fall - does not breed on Area; Winter Visitor, present from fall through spring; Irregular, occurs periodically.

#### Abundance

The abundance of each wildlife species was approximated for the Area by using a quantitative index. The levels of abundance were described as very common, 25 or more sightings per day; common, 10-24 sightings per day; uncommon, 1-9 sightings per day; rare, 5 or less sightings per year or over several years.

#### Habitat

The Area is composed of a mosaic of land forms, aquatic systems, and plant communities. Singly or in combination, these components provide wildlife species with their needs. The component or combination of components that an animal used was identified as its habitat.

A species reaches its greatest abundance in the habitat which best provides its needs. These habitats were defined as the species' preferred habitats. Other habitats may supply a species with its needs but to a lesser degree. The species will be present but not as abundant. These were identified as typical habitats.

## Status

Fish and wildlife species on the Area are classified by State and Federal laws (e.g., rare, endangered, game animal). The legal status given different animals was reviewed.

## Recreational/Commercial Use and Economic Value

Wildlife of the Area supplies people with recreational and commercial opportunities. The nature and extent of these opportunities was identified. An index to the economic value of wildlife resources was developed.

## Key Wildlife Habitats - Tolerance Ratings

Key wildlife habitats on the Area were identified. The effects a facility (e.g., house, road, trail) or the introduction of people into a habitat were evaluated with a tolerance rating system. General and specific recommendations are presented to reduce anticipated impacts on wildlife from development of facilities or increased recreational use.

## RESULTS

### Species and Occurrence

The Area is currently used by at least 378 native wildlife species, including birds, mammals, amphibians, reptiles and fish (Table 1). Thousands of invertebrates (animals without back bones) are also present. Only a few invertebrates used directly by man were identified (Appendix, Table 1). Three native species of wildlife were eliminated from the Area prior to 1915 (Table 2). Eight exotic animals from other parts of the United States or other countries were accidentally or intentionally introduced to the Area since 1850 and are now present (Table 3).

Birds. Birds are the most numerous and conspicuous animals. Of the 230 species of birds present, 99 reside on the Area during the entire year; 44 are summer residents; 2 are summer visitors; 49 are winter visitors; 34 are migrants; and 2 are irregular visitors. Residents and summer residents are mostly song birds, and with few exceptions, nest on the Area. A few birds, such as the Heerman's gull, visit the Area in late summer after nesting is completed in other climes. Winter visitors are primarily waterfowl or shorebirds, and occur on the Forest from fall through spring. Most migrants are shorebirds seen briefly in spring and fall, while traveling to wintering or breeding grounds. Irregular visitors occur periodically. Because the seasonal occurrence of birds overlaps, there are at least 120 different species present at any one time.

Table 1. Numbers and kinds of native wildlife species that use Cascade Head Scenic-Research Area 1/

Wildlife Groups	Number of Species	Typical Species
<u>FISH</u>	74	coho salmon, cutthroat trout, starry flounder, threespine stickleback
<u>AMPHIBIANS</u>		
Salamanders	8	Pacific giant, Oregon, Western red-backed
Frogs	3	Pacific treefrog, red-legged frog
Toads	<u>1</u>	Western toad
Subtotal	12	
<u>REPTILES</u>		
Snakes	5	common garter snake, Northwestern garter snake
Lizards	<u>1</u>	Northern alligator lizard
Subtotal	6	
<u>BIRDS</u>	230	common murre, tufted puffin, song sparrow, great blue heron, screech owl
<u>MAMMALS</u>		
Marine	4	harbor seal, California sea lion
Terrestrial	<u>52</u>	black-tailed deer, chickaree, coast mole
Subtotal	56	
TOTAL	378	

1/ Derived from Appendix Tables 1 and 3.

Table 2. Native wildlife species eliminated from the Cascade Head Scenic-Research Area between 1850 and 1915\*.

Species	Probable Occurrence	Probable Abundance
California condor	Visitor (late summer-winter)	Rare
Wolf	Resident	Rare
Sea otter	Resident	Uncommon

\*Based on information compiled by Olterman and Verts (1972), and Gabrielson and Jewett (1970)

Table 3. Exotic wildlife species introduced on the Cascade Head Scenic-Research Area from other countries or parts of the United States since 1800.

Species*	Abundance	Habitat
Starling	Very common	Pastures, meadows, early succession
English sparrow	Common	Pastures
Opossum	Rare	Riparian, early succession, meadows and pastures
Brown rat	Common	Human habitation, variety
Norway rat	Common	Human habitation
House mouse	Common	Human habitation
Nutria	Rare	Estuary, marsh, riparian
Bullfrog	Uncommon	Riparian (lakes, ponds, large streams)

\*All are residents

Mammals. Fifty-two species of terrestrial mammals and four species of marine mammals are present (Table 1). Except for several species of bats which may migrate south for the winter, all other terrestrial mammals are residents. The occurrence of marine mammals differs among species. The harbor seal is a resident; the California and northern sea lions are seasonal visitors; and the elephant seal is an occasional visitor which may frequent the Area at any time of the year.

Amphibians. The Area is inhabited by 12 species of amphibians; 8 salamanders, 3 frogs, and 1 toad (Table 1). Amphibians are sedentary residents of the Area, and most species are quite inconspicuous.

Eight of the 16 species of salamanders found in Oregon occur on the Area.

Reptiles. Reptiles on the Area are represented by six species; five snakes and one lizard (Table 1). Like amphibians, reptiles are sedentary and inconspicuous residents.

Fish. At least 74 species of fish spend all or parts of their lives in the streams and estuary (Table 1). A large and diverse number of fish are also present in the adjacent ocean. The rocky reefs and rubble bottom provide good habitat for many species of ocean fish. However, ocean fish were not identified, except for those species that also occur in the estuary or streams.

The numbers and kinds of fish present in the estuary varies seasonally and annually, primarily because of changes in the salinity of the estuary.

Invertebrates. Invertebrate animals are especially numerous in the tidal flats and some rocky ocean beaches (tide pools). These extremely numerous and diverse species form the bulk of the diet for many vertebrates, especially birds and fish. Invertebrates are essentially responsible for the presence of most other species on the Area. Only a few invertebrates (mussels, eastern soft-shelled clam, sand shrimp, red rock crab, and Dungeness crab) are commonly used directly by man for food or bait (Appendix Table 1).

### Abundance

The abundance of each animal was identified using a quantitative index (Appendix Tables 1, 2, and 3). The index is general since the abundance of many species varies annually, seasonally, or geographically because of natural factors. The level of abundance described for each species is relative to its place in the structure of the ecosystem. For example, one large predator (bobcat) and 100 small prey animals (brush rabbits) may occur on one square mile. Both the bobcat and rabbits could be considered common when viewed in their respective places in the ecosystem.

Table 4. Major wildlife habitats of the Cascade Head Scenic-Research Area

Habitat Type	Abbreviation	Description
BEACHGRASS	BG	Grass-herb communities dominated by European beachgrass.
DEAD-DEFFECTIVE TREES	DD	Dead trees standing or lying on the ground; and living trees with defective parts, e.g., broken tops, heart rot ...
ESTUARY	E	The portion of a stream and its floodplain influenced by ocean tides. Includes tidal flats and saltmarsh.
FLOODPLAIN GRASSES	FG	Grasses and herbs of the floodplain plant community.
FRESH WATER MARSH	FM	A shallow body of fresh water sometimes under a canopy of trees. Maybe dry part of the year.
INTERMEDIATE CONIFER	IC	Stands dominated by conifers ranging in age from immature to mature. The C3 plant community.
INTERMEDIATE DECIDUOUS	ID	Stands dominated by deciduous trees ranging in age from immature to mature. The M3 plant community.
INTERMEDIATE MIXED	IM	Mixed stands of deciduous and coniferous trees ranging in age from immature to mature. The CM3 plant community.
OCEAN	O	The ocean within one-half mile of the mainland.
OCEAN CLIFF	C	A steep rocky cliff with the ocean at the base.
OLD GROWTH CONIFER	OC	Stands dominated by old growth conifers. The C4 and D4 plant community.
OLD DECIDUOUS	OD	Stands dominated by old deciduous trees. The M4 plant community.
OLD MIXED	OM	Stands composed of a mixture of old growth conifers and old deciduous trees. The CM4 and DM4 plant community.
OFF-SHORE ISLAND	OI	A small island in the ocean within one-half mile of the mainland. Some islands connect with the mainland at low tides.
POND	P	A small shallow body of water.
RIPARIAN	R	The vegetation adjacent to water bodies or courses.
ROCKY BEACH	RB	Ocean beach dominated by rocks or rock rubble.
SALAL SHRUB	SS	Dense thickets of salal located adjacent to the ocean.
SALT MARSH	SM	An estuary marsh subject to periodic salt water intrusion. The SM plant community.
SALT MARSH DIKED	SD	A diked estuary marsh no longer subject to salt water intrusion.
SANDY BEACH	SB	Ocean beach dominated by sand.
STREAM	ST	Streams except the estuarine portion of the Salmon River.
SHRUB	S	Shrub communities dominated by salmonberry, thimbleberry, blackberry and/or red elderberry. Includes some recent clearcuts.
TIDAL FLAT	TF	A mud or sand flat exposed at low tides.
UPLAND GRASSES	UG	Grasses and herbs of the upland grass-herb communities.
YOUNG CONIFER	YC	Stands dominated by young conifers. The C1 and C2 plant communities.
YOUNG DECIDUOUS	YD	Young stands of deciduous trees. The A2 and M2 plant communities.
YOUNG MIXED	YM	Young stands of mixed conifers and deciduous trees. The CM2 plant communities.

Table 5. Use of major habitats by wildlife species of the Cascade Head Scenic-Research Area

Habitat	Number of Species		Total
	Preferred Habitat	Typical Habitat	
<u>AQUATIC-SEMI-AQUATIC</u>			
Riparian	84	27	111
Fresh water marsh	48	22	70
Pond	27	21	48
Stream	20	12	32
Ocean	47	4	51
Estuary +	77	23	100
Saltmarsh +	57	67	124
Sandy ocean beach	28	21	49
Rocky ocean beach	27	12	39
Tidal flat +	59	31	90
Ocean cliff	26	1	27
Ocean island	39	0	39
<u>GRASSLANDS</u>			
Saltmarsh diked	50	83	133
Floodplain grasses	41	89	130
Upland grasses	27	57	84
Beach grass	8	66	74
<u>SHRUB</u>			
Salal shrub	1	13	14
Shrub	69	57	126
<u>DECIDUOUS</u>			
Young deciduous	2	69	71
Intermediate deciduous	24	82	106
Old deciduous	25	81	106
<u>MIXED</u>			
Young mixed	5	72	77
Intermediate mixed	19	101	120
Old mixed	18	142	160
<u>CONIFER</u>			
Young conifer	6	60	66
Intermediate conifer	31	77	108
Old conifer	32	76	108
DEAD-DEFECTIVE TREES	51	30	81

+ Without duplications, the estuary system (brackish water, saltmarsh and tidal flats) is the preferred habitat of 112 species and typically used by 69 other species.

Table 6. Endangered, rare, peripheral and status undetermined wildlife species of Cascade Head Scenic-Research Area.\*

Species	Occurrence	Abundance	Status+	
			National	State
<u>BIRDS</u>				
California brown pelican	Summer visitor	Rare	E	P
American peregrine falcon	Migrant	Rare	E	E
Northern bald eagle	Resident	Rare		E
Western-snowy plover	Resident	Rare	SU	R
Western pigeon-hawk	Resident	Rare		E
Caspian tern	Migrant	Rare		R
Northern purple martin	Summer resident	Uncommon		SU
Red-necked grebe	Winter visitor	Uncommon		P
Horned grebe	Winter visitor	Common		P
Southern fork-tailed petrel	Resident	Rare		R
Aleutian Canada goose	Migrant	Rare	E	E
Ring-necked duck	Winter visitor	Uncommon		P
Lesser scaup	Winter visitor	Common		P
Barrow's goldeneye	Winter visitor	Rare		P
Bufflehead duck	Winter visitor	Common		P
Harlequin duck	Winter visitor	Rare		R
Alaskan short-billed dowitcher	Migrant	Rare	SU	SU
American marbled murrelet	Resident	Rare		SU
Rhinoceros auklet	Resident	Uncommon		SU
Common egret	Winter visitor	Uncommon		P
Western water pipit	Migrant	Rare		P
Bohemian waxwing	Winter visitor	Irregular		P
<u>MAMMALS</u>				
White-footed vole	Resident	Uncommon		R
Northern elephant seal	Occasional visitor	Rare	SU	R
Fringed bat	Present (unknown)	Rare		SU
Marten	Resident	Rare	SU	

\*Based on U.S. Dept. of Inter. 1973b; Marshall 1969; Olterman and Verts 1972.

+ See Appendix Table 4 for precise definitions of terms.

## Habitat

Twenty-eight major habitats were identified on the Area (Table 4). The typical or preferred habitat(s) of each animal present was determined. (Appendix Tables 1, 2, and 3).

Each major habitat contains many smaller habitats (micro habitats) that exhibit differences in soil, moisture, temperature, vegetation and other numerous conditions. For this reason many species are found using the same major habitat (Table 5, Appendix Tables 1, 2, and 3). In addition, the habitat(s) used by a species may vary seasonally.

Certain species like the birds and larger mammals are very mobile and their "habitat" consists of a complex of the 28 different habitat types identified.

Other species are sedentary but found in many of the major habitats containing all the components required by these species. Some species are dependent on one or two components. These components may be found in many of the major habitats or only in a few. Animals dependent on a few components are highly specialized.

Each of the 28 wildlife habitats identified provide the requirements for a certain group of wildlife species. The presence of these species on the Area is dependent on the continuous presence of these habitats. Under natural conditions these habitats are continuously changing (plant succession, landslides...). However, all of the 28 major habitats are usually present to some degree. The abundance of a species changes in response to an alteration of its habitat. From the "animals" point of view" these are all key habitats.

## Status

Endangered, Threatened, Rare, Peripheral and Status Undetermined Species. The Area is used by 26 animals classified as endangered, threatened, rare, peripheral, or status undetermined (Table 6). Seven of these species are given special recognition nationally, and 25 are recognized in Oregon (Table 6). Special recognition has been given because the existence of these species is in immediate or potential jeopardy. This condition results from a variety of causes, including loss or change in habitat, over-exploitation, predation, competition, and disease or chemicals in the environment. Often several or all of these factors in combination have caused the decline of a species.

Eight species were selected for discussion in this section because these species are (1) Nationally recognized as endangered, threatened, or status undetermined; or (2) Considered endangered or rare in Oregon. Most of the remaining species identified in Table 6 are classified as rare or peripheral because very small numbers of each species breed in Oregon. Although none of these species breed on the Area, nearly all are common migrants or winter visitors to the Area. Certain species are classified as status undetermined because further information is needed to determine if the status of each is, in fact, endangered, threatened, or rare (Table 6).

Aleutian Canada Goose, Endangered - Nationally and in Oregon (U.S. Dept. Interior, 1973b Marshall 1969). The total wild population of the Aleutian Canada Goose is estimated at 250 to 300 (U.S. Dept. of Interior 1973b). These geese currently breed on one island in the Aleutian chain of Alaska and winter in Japan and California. The population has been considerably larger and nested on most of the Aleutian islands in the past (U.S. Dept. of Interior 1973b). The decline in numbers of these geese was a result of the introduction of Arctic foxes and rats to the breeding islands. Predation of eggs, young and adults by rats and foxes decimated the population of these geese. (U.S. Dept. of Interior 1973b).

The geese migrate to California along the Oregon Coast and through the Willamette Valley. Although there are no records of sightings on the Area, the Aleutian Canada geese probably use the off-shore islands and estuary adjacent to or within the Area.

American Peregrine Falcon, Endangered - Nationally and in Oregon (U.S. Dept. Interior 1973b, Marshall 1969). Three sub-species of peregrine falcon (Arctic, American and Peales) inhabit North America. The Arctic and American species are endangered.

The American sub-species formerly inhabited most of the non-Arctic portions of North America. It now occurs west of the Rocky Mountains, in the non-Arctic portions of Canada and Alaska, and Western Mexico. Several hundred pairs still breed in Alaska and northwestern Canada (U.S. Dept. Interior 1973b). Only 23 nesting sites with adults were known throughout the contiguous 48 states in 1969 and 1970 (U.S. Dept. Interior 1973b). Two nests were located in Oregon.

The primary reason for the decline of the American and Arctic sub-species is attributed to chlorinated pesticides (U.S. Dept Interior 1973b). Pesticides in prey species result in the direct mortality of adult falcons and reduced production of young by adversely affecting reproduction (thin-shelled or non-viable eggs). Habitat destruction and the illegal collection of birds for falconry have also contributed to declines (U.S. Dept. Interior 1973b).

The American peregrine migrates south for the winter. A few migrants move along the Oregon Coast, and feed and rest in the Area.

California Brown Pelican, Endangered - Nationally and in Oregon (U.S. Dept. Interior 1973b, Marshall 1969). The California brown pelican and the eastern brown pelican are the sub-species of brown pelicans which occur in the United States. The California brown pelican breeds along the coast of southern California and Baja California.

Populations of both sub-species have declined drastically during the past decade because of nesting failure attributed to chlorinated pesticides which cause eggs to be non-viable (U.S. Dept. Interior 1973b). The population of California brown pelicans (in California) was between 1,000 - 1,500 adults in 1972, and declining 14 to 18 percent annually (U.S. Dept. Interior 1973b). The lowest estimate for California and Mexico combined was a population of 100,000 (U.S. Dept Interior 1973b).

Small numbers of California brown pelicans visit the major estuaries and ocean adjacent to or within the Forest boundary. This post breeding movement occurs annually during late summer and fall. In some years they visit the Salmon River estuary.

Northern Bald Eagle - Endangered in Oregon (Marshall 1969). Two sub-species of bald eagle occur in the United States. The northern bald eagle is widely distributed throughout most of North America. It is classified as endangered in Oregon, but not nationally (U.S. Dept. of Interior, 1973, Marshall 1969). The southern bald eagle is found along the coastal areas from New Jersey to California and in this southern tier of states. It is classified as endangered nationally (U.S. Dept. of Interior 1973b).

Decline in bald eagle populations is partly attributed to increased human populations in prime nesting areas in the estuaries and coastal zones (U.S. Dept. of Interior 1973a and b). People intentionally or unintentionally, have destroyed habitat (particularly trees needed for nesting and perching), disturbed nesting birds, or have shot eagles. The decline in eagle population has also been attributed to ingestion of chlorinated pesticides which causes production of non-viable eggs.

Alaska has the greatest population of northern bald eagles with 35 - 40 thousand breeding pairs estimated (Robards 1973). In the contiguous 48 states, however, only 750 breeding pairs of the northern and southern subspecies are estimated (Knoder 1972).

A survey of bald eagle nests in Oregon is conducted annually (Nelson 1973). In 1973, 116 nests of the northern bald eagle were present, and at least 47 were attended by adult birds. Of these 47 active nests, 32 produced young. A pair of eagles use the Area and two nests are present.

Western Snowy Plover - Status Undetermined Nationally - Rare in Oregon (U.S. Dept. Interior 1973b, Marshall 1969). The snowy plover nests along the Pacific Coast from southern Washington to Baja California, and in the alkaline basins of eastern Oregon, Nevada, California and the southwestern states. Marshall (1969) indicated the entire breeding population in the alkaline basins of southeastern Oregon probably numbered less than 50 pairs.

The plover winters along the Pacific Coast from northern Oregon to southern Baja California and in portions of the Gulf Coast. On the Oregon coast, it is present during the entire year. Hoffman (1972) found 216 birds while surveying potential plover habitat along the Oregon Coast in 1972.

Marshall (1969) and Hoffman (1972) identified recreational pressure and stabilization of the coastal dunes with planted vegetation as the major factors adversely affecting plovers. Their observations verified the elimination of plovers from habitat as a result of these activities. Vehicular and pedestrian traffic and uncontrolled dogs were specifically identified as causing nesting failure (Hoffman 1972).

Snowy plovers occasionally use the sandy ocean beaches on the Area.

Northern Elephant Seal - Status Undetermined Nationally - Rare in Oregon (U.S. Dept. Interior 1973b, Olterman and Verts 1972). This large marine mammal breeds in the waters off California and Mexico. About 15,000 elephant seals were present in the breeding areas in 1974 (U.S. Dept. Interior 1973b). It occasionally wanders north into Oregon waters. When present, it is seen on off-shore islands, reefs and the mouths of estuaries. Infrequently, the elephant seal rests ("hauls out") on beaches. Several elephant seals were observed on beaches of Oregon in recent years (Mate 1972). These seals occasionally use the Area.

Alaskan Short-Billed Dowitcher - Status Undetermined Nationally and in Oregon (U.S. Dept. Interior 1973b, Marshall 1969). This bird breeds along the south central coast of Alaska and winters along the Pacific Coast from its breeding area to southern Baja California. In Oregon it probably occurs as a migrant or winter visitor. The estuary mudflats and coastal marshes are its preferred habitat, and it probably uses these habitats within the Area.

Marten - Status Undetermined Nationally (U.S. Dept. Interior 1973b). The marten was widely distributed throughout most mountainous areas and the northern coniferous forests of North America. It still occurs in most of its original range, but in lower numbers. The destruction of habitat and over-exploitation by fur trapping are probable causes for its decline.

In Oregon, marten are found in the mountainous areas west of the Cascades, and in the Blue, Wallowa and Strawberry Mountains (Olterman and Verts 1972). In the Oregon Coast Range, marten seem to prefer stands dominated by cedar and mature or old growth conifers. Robert Mace, Chief, Big Game, Oregon Wildlife Commission, stated (in Olterman and Verts 1972) that marten were rare in the northern part of the Coast Range, and not abundant elsewhere. Olterman and Verts (1972) did not consider the marten to be either rare or endangered in Oregon. They did indicate populations should be monitored closely, especially if the demand for their fur increased. Marten have been seen on the Experimental Forest but not on the Area itself. However, they are expected to occur there.

#### Regulations and Classifications Pertaining to Fish, Invertebrates, and Wildlife

Various State or Federal classifications have been given wildlife species (Appendix Table 5). All fish within Oregon waters are subject to State regulations as are most invertebrates found in the ocean or estuary. The primary purpose of these classifications is to regulate the use of these animals by people. Regulations insure that a continuous supply of these species will be produced for future harvests. Regulations change annually or periodically to meet this objective. Non-game species (including rare, threatened or endangered species) also receive protection through these regulations.

#### Recreational Use of Fish and Wildlife

The wildlife species on the Area provide a wide variety of recreational opportunities and experiences. Hunters, anglers, trappers, wildlife photographers and viewers visit the Area specifically because of the fish and wildlife. The quality of the experience enjoyed by other groups of recreationists such as campers, hikers, picnickers, and those on scenic excursions, is enhanced by their encounters with wildlife. These activities represent the major consumptive and non-consumptive use of fish and wildlife on the Area.

The consumptive uses of these resources are discussed in the following sections, primarily because data on consumptive uses are available. It should be recognized that non consumptive use is a major use fish and of wildlife on the Area. However, quantitative data on this use is lacking.

Fish - Invertebrates. An estimate of the amount of recreational use provided by the fish and invertebrates of the Area is available from Oregon Fish Commission Research. From March through October 1971, 2,994 trips were made to the Area. Anglers spent 6,273 hours harvesting 4,466 fish or invertebrates (Gaumer, Demoy and Osis 1973). This should be considered a minimal estimate because it does not cover the entire year and is restricted to the estuary. People harvest fish during the entire year and fish from beaches and cliffs.

Wildlife. Fifty species of wildlife on the Area are classified as game animals (Appendix Table 5). Most of these are waterfowl. Hunters and trappers harvest these game animals and a few other animals such as the bobcat or coyote which are not classified as game animals.

Most hunting effort is spent on waterfowl. A 1970 estimate indicates 140 hunter use days are spent annually in the pursuit of ducks (U.S. Dept. of Agri. 1972b). Black-tailed deer, ruffed grouse, and blue grouse are the other major species hunted. These three species together probably provide less than 100 hunter use days.

Fur bearers, (e.g. mink, otter, beaver), on the Area are sought by trappers. Most trapping is done for recreation rather than profit. Less than 100 recreational days of trapping probably occur on the Area.

#### Commercial Use of Fish and Wildlife

The Salmon River System produces an annual run of chum, coho and chinook salmon. Adult salmon use the estuary as a migration route and holding area. A few streams on the Area provide spawning opportunities. These streams and the estuary provide rearing areas for coho and chinook juveniles.

Coho and chinook are the most numerous in the system and caught by both sports and commercial fishermen on the ocean. An index to the annual contribution of the Salmon River system to commercial fisheries was derived from 1972 spawning records (Table 7).

Table 7. Estimate of number of coho and chinook salmon from the Salmon River system caught by commercial and sports fishermen.

Species	No. Spawning(*)	Catch		
		Sport(+)	Commercial(+)	Total(X)
Coho	5,700	5,700	17,100	22,800
Chinook	2,180	2,180	4,360	6,540

(\*) Smith and Luaman (1972). Note this figure varies annually due to natural and man caused factors.

(+) Commercial and sport catch based on a ratio of 2:1 for chinook and 3:1 for coho.

(X) Total catch based on a catch spawning ratio of 3:1 for chinook and 4:1 for coho.

#### Economic Value of Recreational and Commercial Use

The recreational and commercial use of the Area's wildlife resources results in expenditures or gains of money. An index of the annual economic values generated by the wildlife resources was obtained (Table 8). This index is not an estimate of the actual value of the wildlife resources present.

Table 8. Index to the annual economic value of wildlife resources of the Cascade Head Scenic-Research Area and the Salmon River system.

Type of Activity	No. Days, Trips+ or Fish	Expenditure or Gain (Dollars)	
		Per Day, Trip* or Fish	Total
Recreational Fishing (on Area)	2,994 (Trips)	7.00	20,958
Recreational Hunting- Trapping (on Area)	340 (Days)	13.00	4,420
Recreational Fishing- Salmon (Off Area)	7,880 (Fish)	39.20	308,896
Commercial Fishing (Off Area)			
Coho	17,100 (Fish)	5.70	97,470
Chinook	4,360 (Fish)	10.00	43,360
TOTAL			475,104

+ Figures from previous section

\* \$7.00 based on 1970 National Survey of Hunting and Fishing (U.S. Dept. Interior). Cost of \$6.30/day fresh-water fishing increased to \$7.00 to compensate for inflation.

\* \$13.00 based on average daily cost of waterfowl, small game and big game hunting increased \$1.00 to compensate for inflation (U.S. Dept. Interior 1970).

\* \$5.70 and \$10.00 figures are based on average dressed weight of 6.4 lbs/coho with a dockside piece of 0.90/lb and dressed weight of 10.1 lbs/chinook with an average dockside value of 0.99/lb. (Hasselman 1975.)

\* \$39.20 figure based on estimates of Oregon Fish Commission. 1.4 days of effort to catch one salmon at a cost of \$28.00 per day. This refers to fish caught in the ocean or in the stream off the Area. (Hasselman 1975)

#### Key Wildlife Areas - Habitats

Key wildlife area habitats are biologically unique; frequently used by rare or endangered species; limited in extent but used by both a greater number of species and a greater number of individuals; or nesting - resting areas for great numbers of animals. These areas are identified on the Key Wildlife Area Habitat Map (Appendix III).

Bald Eagle Nest. Two bald eagle nests are present. Both nests probably belong to the same pair of eagles. Eagles often construct an alternate nest.

Sea Bird Roosting-Nesting Sites. The ocean cliffs and off-shore islands are used by at least 6 species of sea birds for nesting and roosting. Over 25,000 sea birds have been recorded nesting on these cliffs and islands.

Sea Lion Haul Out. California sea lions frequent the ocean and off-shore islands from late fall through winter. A rocky ocean beach on the Area is continually used as a resting site by the sea lions. Over 300 sea lions were observed on this beach in past years.

Cliff Creek and Chitwood Creek. These small creeks were isolated from other bodies of water by an uplift in the geologic past. Animal communities in these streams were also isolated (No or limited genetic interchange with animals from adjacent areas). These animals are very unique from a scientific point of view. Cutthroat trout are present in Cliff Creek. If these trout were naturally isolated, then a most unique opportunity for studying the effects of genetic isolation on a population exists. This is also true of many of the other aquatic organisms present in both streams.

Great Blue Heron Rookeries. Several reports of great blue heron rookeries (nesting areas) on the Area were received. No rookeries were discovered during this inventory although it is highly probable they are present. The colonial nesting sites of these birds when discovered should be considered key wildlife areas.

Estuary (Including Salt Marsh and Tidal Flats). Estuaries are the most fertile naturally occurring areas in the world. (Odum 1971). This fertility is a result of the nutrients and organic matter produced by the decaying vegetation of the salt marshes and meadows, washed down by the stream and brought in by tidal action. These nutrients and organic matter stimulate the growth of plankton and invertebrate organisms which are the basic food sources within the estuaries. These food sources attract many small animals to the estuaries which in turn attract other wildlife species.

The greatest number of wildlife species and the greatest number of individuals use or live in the estuary environment. The estuary is the preferred habitat of 112 species and typically used by 69 other species. In addition 74 fish species use the estuary as a migration route for feeding, spawning and as nurseries (Appendix Table 2). Shore-birds, waterfowl and oceanic birds use the estuary in great numbers especially during winter and fall or spring migration. The bald eagles (endangered in Oregon) are heavily dependent upon the estuary for fish, which comprise over 90% of their diet.

Riparian Zone. Streams, ponds, fresh water marshes and the vegetation immediately adjacent to them are an integral unit. Following the estuary this riparian zone is the preferred habitat of the greatest number of species, 84 (Table 5). These animals show a decided preference for the water associated vegetation present. Waterfowl and shore birds depend on this vegetation to provide them with nesting or resting sites, food and shelter. In addition many terrestrial species from the surrounding habitats concentrate their activities near the water. These strips of vegetation also maintain the water quality of streams used as spawning and rearing areas by fish.

#### Effects of Facilities or Activities on Species

Wildlife species of the Cascade Head Scenic-Research Area will be affected by the development of facilities (houses, parking lots, roads...), or through the introduction of people into their habitats. Facilities will alter habitats and people will intentionally or unintentionally harass wildlife.

The degree of impact a proposed facility or activity would have on the wildlife species inhabiting each response unit\* was identified using a tolerance rating (Table 9). Tolerance ratings range from 1 (no significant effect on wildlife anticipated) to 5 (a significant detrimental effect on wildlife).

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\*Response Units are homogenous areas of land. They have similar soils, geologic, hydrologic and vegetative characteristics. (U.S. Dept. Agric. 1975)

Table 9. Biological tolerance ratings for activities or facilities.

Rating	Description
1 - Very High Tolerance:	little or no temporary change in habitat, little or no harassment of wildlife.
2 - High Tolerance:	some temporary change in habitat, small amount of permanent change in habitat. temporary harassment of wildlife but species continue to use the Area.
3 - Moderate Tolerance:	moderate amount of temporary change in habitat and moderate amount of permanent change.  some temporary harassment of wildlife causing species to avoid the Area for short periods of time.
4 - Low Tolerance:	large amount of temporary change or a large amount of permanent change in habitat.  harassment causes species to abandon Area for long periods of time, some nesting failure results.
5 - Very Low Tolerance:	very large amount of permanent change in habitat.  harassment causes species to abandon Area or results in nesting failure.

The following major considerations were used to assign tolerance ratings to a proposed activity or facility in a response unit:

1. The acreage, shape and location of the response unit.
2. The life histories and behavior of wildlife species.
3. The type, magnitude, location and season when an activity occurs.
4. The nature of the disturbance to the habitat, temporary or permanent, small or large.

Tolerance ratings of 5 and 4 emphasize the need to (1) avoid concentrating people or developing facilities in all or certain portions of the response unit; (2) limit the type and magnitude of activity a response unit receives and, (3) develop sophisticated treatments and procedures when it is absolutely necessary to develop portions of these habitats.

## Recommendations

Tolerance ratings assigned each response unit provide one approach for partially assessing the impacts of a proposed activity or facility on a response unit. The various response units form one integral unit: the Cascade Head Scenic-Research area. It is necessary to consider the impacts a facility or activity will have on the whole Area. For these reasons the following recommendations are made:

1. Maintain a continuous supply of the major plant communities on the Area.

Explanation: The diversity of terrestrial species on the Area is in large part a result of the diversity of habitats (plant communities) present. Maintaining a continuous supply of these habitats will result in the continuous presence of these species on the Area.

2. Avoid developing facilities or concentrating people in those areas identified as "Key Areas or Habitats".

Explanation; Nearly all key habitats or areas have a tolerance rating of 5 for all facilities and most activities. A Specific set of recommendations for each key habitat-area was developed during a Forest-wide Wildlife Inventory. These recommendations are included here.

### Specific Goals and Practices\*

#### Bald Eagle

Goal: Protect and perpetuate known nesting sites (including false or alternate nests) and those discovered in the future.

#### Practices:

1. Preserve the area within a radius of 6 chains of the nest tree in an undisturbed condition (i.e., establish a buffer zone around the nest tree).
2. Retain at least three groups of 6 large conifer trees and snags within 6 chains of the periphery of the buffer zone (i.e., within the area 6 to 12 chains from the nest tree) for roosting and perching opportunities.
  - a. Each group of roosting-perching trees should have the following characteristics:

---

\* Habitats of most species for which goals and practices were developed are identified in the Forest's TRI, Total Resource Information System and the "Key Wildlife Habitat-Area Map."

- (1) Two or more hard conifer snags (with branches) at least 60 feet tall and extending above the surrounding canopy a minimum of 15 feet.
  - (2) Four or more live conifer trees at least 100 feet tall with broken, dead, or flat tops.
- b. The groups of roosting-perching trees should be separated by a distance of at least 5 chains.
3. Restrict major land management activities within a one-quarter mile radius of the periphery of the buffer zone during the nesting season, January 30 to August 30. (If nesting has not occurred by May 15, land management activities may be conducted within one-quarter mile of the buffer zone).
  4. Avoid development of recreational facilities, or concentration of people within one-quarter mile of the periphery of the buffer zone.

Goal: Assure perpetual nesting opportunities in prime eagle nesting habitat. (Prime bald eagle nesting habitat occurs adjacent to estuaries, large streams, lake systems, the coastal strand and portions of the interior Forest).

Practices:

1. Select and reserve specific sites which have the following characteristics:
  - a. At least 10 acres in size.
  - b. Contain 20 or more live conifers at least 100 feet tall with broken, dead, or flat tops.
  - c. Contain 20 or more normal conifers at least 100 feet tall.
  - d. Contain 4 or more hard conifer snags extending to or above the general level of the canopy.
  - e. Contain trees with the characteristics of roosting-perching trees as described in paragraph 2.a. and 2.b. above.
2. Once reserved, these potential nest sites should remain undisturbed for at least 30 years.

Great Blue Heron (Rookeries)

Goal: Protect and perpetuate great blue heron rookeries discovered in the future.

Practices:

1. Preserve the rookery and an area within a 4 chain distance from the boundary of the rookery.
2. Restrict major land management activities within 10 chains of the rookery during the nesting season January 15 to August 1. (If nesting has not occurred by March 30, land management activities may be conducted up to the boundary of the buffered rookery).
3. Avoid development of recreational facilities or concentration of people within one-quarter mile of the rookery boundary.
4. If timber is to be harvested in a rookery, the following recommendations apply:
  - a. Select and reserve for a minimum of 4 years at least two alternate rookery sites within a one-half mile distance from the original rookery. These sites should be in the same drainage as the original rookery. Alternate sites should have the following characteristics:
    - (1) At least 10 acres in size.
    - (2) Contain a mixture of conifer trees or conifer and deciduous trees at least 75 feet tall.
    - (3) Located in areas sheltered from the wind.
  - b. Alternate rookery chosen by herons for use should remain undisturbed for a period of at least 25 years. (NOTE: Herons may not choose alternate sites selected by man).
  - c. Manage alternate rookery sites chosen by herons as described in paragraph 2 above.
  - d. If above conditions cannot be met, a rookery in question should be preserved.

Seabirds

Goal: Protect and perpetuate seabird rookeries and roosting areas.

Practices:

1. Preserve the rookery-resting area, adjacent cliff face, the beach for a distance of at least 10 chains to each side, and the area from the edge of the cliff face to 5 chains inland.
  - a. Avoid developing recreational facilities or conducting other land management activities within the rookery-roosting site and zone described in paragraph 1 above.

- b. Prohibit public access in the rookery roosting site and buffer zones during the nesting season, March 15 to September 1.
2. Restrict major land management activities within one-quarter mile of the rookery during the nesting season, March 15 to September 1 (i.e., those types of activity which would disturb the nesting bird).
3. Construct physical barriers to exclude people from rookeries with easy access.
4. Develop I&E programs to reduce or eliminate the harassment of seabirds by visitors to the area.
  - a. Limit programs to readily visible rookeries.
  - b. Locations of inconspicuous rookeries should not be advertised.

#### Sea Lions (Haul-Outs)

Goal: Protect sea lions and perpetuate haul-out areas.

#### Practices:

1. Avoid disturbance of the haul-out area, adjacent cliff face, the beach for 10 chains on each side of the haul-out area, and an area from the edge of the cliff face to 5 chains inland.
  - a. Avoid development of recreational facilities or conducting other major land management activities within the protected haul-out areas.
  - b. Prohibit public access to the haul-out area and protected zone, when sea lions are present (November through April).
2. Restrict major land management activities within one-quarter mile of the protected area when sea lions are present (i.e., those types of activities which would disturb sea lions).
3. Develop an on-site I&E program to reduce or eliminate the harassment of sea lions by visitors to the area.

#### Riparian Species

Goal: Maintain the natural condition of all water bodies, waterways and the physical properties of the riparian vegetative zone surrounding or adjacent to aquatic systems.

Practices:

1. Fresh-Water Ponds, Marshes/Swamps:

Avoid disturbance of the aquatic system and the physical properties which characterize the associated riparian vegetation. This may require a protected zone of at least 75 feet from the periphery of the high water line.

2. Streams:

a. Estuaries:

Avoid disturbance of the estuaries of streams and the physical properties which characterize the riparian vegetation within the active flood plain and along its boundaries. This may require a protected zone (at least 300 feet in width) around the boundary of the active flood plain. (NOTE: See Appendix for existing Forest Service policy).

b. Other Streams (Forest Service Class I, II, III):

Avoid disturbance of the streams and the physical properties which characterize the associated riparian vegetation. This is especially critical for Chitwood and Cliff Creeks.

Northwest Coastal Information Center  
OREGON STATION  
O.S.U. Marine Science Center  
Newport, Oregon 97365  
503-867-3011

## APPENDIX I

### U.S. FOREST SERVICE ESTUARY POLICY\*

National Forest lands in estuarine areas will be managed under the concept of multiple use. Because of the biological, ecological, and recreational values of estuarine areas, the Forest Service, within its authority, will take all reasonable steps to protect such areas from pollution, damage, or destruction from manmade forces. Furthermore, the Forest Service shall cooperate with other agencies and organizations in all reasonable efforts to restore and rehabilitate National Forest estuarine areas presently in a damaged condition. The Forest Service shall observe such principles of ecology, watershed management, wildlife and fish habitat management, pest control, and land use development on National Forest holdings within the environmental system of estuaries as will adequately protect estuarine areas.

\*Forest Service Manual 2600-Wildlife Management, Section 2633.61.

## APPENDIX II

### Species Expected to Occur on the Cascade Head Scenic - Research Area but Currently Absent

The Sitka spruce/western hemlock - Douglas fir old growth stands were inventoried for spotted owls (Strix occidentalis). Recordings of spotted owl calls played in the area on two separate evenings received no response. Spotted owls were found in similar habitat by others in the past. It appears spotted owls are currently absent.

The Salmon River Estuary and nearby Devil's Lake should support at least one pair of osprey (Pandion haliaetus). Osprey appear to be absent from the coastal area between Yaquina Bay (Newport) and the Columbia River. The reason for this absence is not apparent.

Appendix Table 1. Invertebrate animals of the Cascade Head Scenic-Research Area used directly by people.

---

Species	Abundance	Habitat
Mussel	Very common	Rocky cliff base or beach (tide pools)
Soft-shelled clam	Common	Mud tidal flat
Sand shrimp	Very common	Sand/mud tidal flat
Red rock crab	Uncommon	Estuary
Dungeness crab	Common	Estuary
Crayfish	Common	Streams

---

Appendix Table 2. A partial checklist of fish which spend all or part of their lives in the estuary and streams within the Cascade Head Scenic-Research Area.

Species (*)	Occurrence (+)	
	Estuary	Streams
<u>ANADROMOUS</u>		
<u>Pacific lamprey</u>	X	X
<u>American shad</u>	X	X
<u>Chum salmon</u>	X	X
<u>Coho salmon</u>	X	X
<u>Chinook salmon</u>	X	X
<u>Pink salmon</u>	X	X
<u>Sockeye salmon</u>	X	X
<u>Steelhead/Rainbow trout</u>	X	X
<u>Cutthroat trout</u>	X	X
<u>FRESH WATER</u>		
Western brook lamprey		X
River lamprey		X
Coast Range sculpin		X
Riffle sculpin		X
Reticulate sculpin		X
<u>Prickly sculpin</u>	X	X
<u>Blacksided dace</u>	X	X
<u>Threespine stickleback</u>	X	X
<u>OCEAN-ESTUARY</u>		
<u>Starry flounder</u>	X	
<u>English sole</u>	X	
<u>Sand sole</u>	X	
<u>Butter sole</u>	X	
<u>Pacific sanddab</u>	X	
<u>Shiner perch</u>	X	
<u>Pile perch</u>	X	
<u>Redtail surfperch</u>	X	
<u>Walleye surfperch</u>	X	
<u>Silver surfperch</u>	X	
<u>Striped seaperch</u>	X	
<u>White seaperch</u>	X	
<u>Staghorn sculpin</u>	X	
<u>Padded sculpin</u>	X	
<u>Mosshead sculpin</u>	X	
<u>Buffalo sculpin</u>	X	
<u>Tidepool sculpin</u>	X	
<u>Silver spotted sculpin</u>	X	
<u>Sharpnose sculpin</u>	X	
<u>Cabezon</u>	X	
<u>Brown Irish lord</u>	X	
<u>Red Irish lord</u>	X	
<u>Pacific herring</u>	X	
<u>Northern anchovy</u>	X	
<u>White bait smelt</u>	X	
<u>Surf smelt</u>	X	
<u>Eulachon</u>	X	
<u>Longfin smelt</u>	X	
<u>Longnose lancet</u>	X	
<u>Pacific tomcod</u>	X	
<u>Topsmelt</u>	X	

\*The presence of underlined species has been confirmed (Berry and Hasselman 1975). The other species listed are endemic to the region and may be present.

+ Underlined species are generally common. Other species are probably uncommon.

Appendix Table 2 - continued

Species*	Occurrence (I)	
	Estuary	Streams
Jacksmelt	X	
Tube-nose poacher	X	
Pricklebreast poacher	X	
High cockscomb prickleback	X	
Snake prickleback	X	
<u>Bay pipefish</u>	X	
Tubesnout	X	
Penpoint gunnel	X	
<u>Saddleback gunnel</u>	X	
Red gunnel	X	
Rockweed gunnel	X	
Arrow goby	X	
Bay goby	X	
Longnose skate	X	
Green sturgeon	X	
Wolf-eel	X	
Black rockfish	X	
Blue rockfish	X	
Cooper rockfish	X	
Bacaccio	X	
Sablefish	X	
Ling cod	X	
Kelp greenling	X	
Rock greenling	X	
Ringtail snailfish	X	
Slipskin snailfish	X	

Preface to Appendix Table 3: Description of Wildlife Habitats

Habitat Type	Abreviation	Description
BEACHGRASS	BG	Grass-herb communities dominated by European beachgrass.
DEAD-DEFFECTIVE TREES	DD	Dead trees standing or lying on the ground; and living trees with defective parts, e.g., broken tops, heart rot ...
ESTUARY	E	The portion of a stream and its floodplain influenced by ocean tides. Includes tidal flats and saltmarsh.
FLOODPLAIN GRASSES	FG	Grasses and herbs of the floodplain plant community.
FRESH WATER MARSH	FM	A shallow body of fresh water sometimes under a canopy of trees. Maybe dry part of the year.
INTERMEDIATE CONIFER	IC	Stands dominated by conifers ranging in age from immature to mature. The C3 plant community.
INTERMEDIATE DECIDUOUS	ID	Stands dominated by deciduous trees ranging in age from immature to mature. The M3 plant community.
INTERMEDIATE MIXED	IM	Mixed stands of deciduous and coniferous trees ranging in age from immature to mature. The CM3 plant community.
OCEAN	O	The ocean within one-half mile of the mainland.
OCEAN CLIFF	C	A steep rocky cliff with the ocean at the base.
OLD GROWTH CONIFER	OC	Stands dominated by old growth conifers. The C4 and D4 plant community.
OLD DECIDUOUS	OD	Stands dominated by old deciduous trees. The M4 plant community.
OLD MIXED	OM	Stands composed of a mixture of old growth conifers and old deciduous trees. The CM4 and DM4 plant community.
OFF-SHORE ISLAND	OI	A small island in the ocean within one-half mile of the mainland. Some islands connect with the mainland at low tides.
POND	P	A small shallow body of water.
RIPARIAN	R	The vegetation adjacent to water bodies or courses.
ROCKY BEACH	RB	Ocean beach dominated by rocks or rock rubble.
SALAL SHRUB	SS	Dense thickets of salal located adjacent to the ocean.
SALT MARSH	SM	An estuary marsh subject to periodic salt water intrusion. The SM plant community.
SALT MARSH DIKED	SD	A diked estuary marsh no longer subject to salt water intrusion.
SANDY BEACH	SB	Ocean beach dominated by sand.
STREAM	ST	Streams except the estuarine portion of the Salmon River.
SHRUB	S	Shrub communities dominated by salmonberry, thimbleberry, blackberry and/or red elderberry. Includes some recent clearcuts.
TIDAL FLAT	TF	A mud or sand flat exposed at low tides.
UPLAND GRASSES	UG	Grasses and herbs of the upland grass-herb communities.
YOUNG CONIFER	YC	Stands dominated by young conifers. The C1 and C2 plant communities.
YOUNG DECIDUOUS	YD	Young stands of deciduous trees. The A2 and M2 plant communities
YOUNG MIXED	YM	Young stands of mixed conifers and deciduous trees. The CM2 plant communities.

Appendix Table 3. Occurrence, abundance and habitats of native wildlife species found on the Cascade Head Scenic-Research Area. 1/

Species	Occur- rence	Abund- ance	HABITATS - COMPONENTS USED																														
			Aquatic					Semi-Aquatic					Grasslands			Shrub		Deciduous			Mixed			Conifer									
			R	FM	P	ST	O	E	SM	TF	SB	RB	C	OI	SD	FG	UG	BG	SS	S	YD	ID	OD	YM	IM	OM	YC	IC	OC	DD			
<b>AMPHIBIANS</b>																																	
Northwestern salamander	R	U	X	X	X	X								+	+				+	+	X	X	+	X	X	+	+	X	X				
Pacific giant salamander	R	C	X	X	X	X													+	+	+	+	+	+	+	+	+	+	X	X			
Olympic salamander	R	C	X	+	+	X															+	+	+	+	+	+	+	+	+	X			
Rough skinned newt	R	VC	X	X	X	X							+	+							X	X	X	X	X	X	X	X	X	X			
Dunn's salamander	R	U	X																		+	+	+	+	+	+	+	+	+	+	X		
Western red-backed salamander	R	VC	X																		X	+	+	+	+	+	+	+	+	+	+	X	
Oregon salamander	R	C	X																		X	+	+	+	+	+	+	+	+	+	+	X	
Clouded salamander	R	VC	X																		X	+	+	+	+	+	+	+	+	+	+	X	
Western toad	R	U	X	X	X	X							X	X	+	+																	
Tailed frog	R	C	X			X																											
Pacific tree frog	R	VC	X	X	X	X							+	+	+	+					+	+	+	+	+	+	+	+	+	+	+		
Red-legged frog	R	VC	X	X	X	X							+	+	+	+					+	+	+	+	+	+	+	+	+	+	+		
<b>REPTILES</b>																																	
Rubber boa	R	R	X											X	X						+	+	+	+	+	+	+	+	+	+	+	+	
Ringneck snake	R	R	X											+	X	X					X												+
Common garter snake	R	VC	X	X										+	X	+	+				+	+	+	+	+	+	+	+	+	+	+	+	+
Northwestern garter snake	R	VC												X	X	X	+	+			X	+	+	+	+	+	+	+	+	+	+	+	+
Gopher snake	R	R												X	X	X					+												+
Northern alligator lizard	R	C																			+	X	+	+	+	+	+	+	+	+	+	+	+

1/ Based on those sources in the literature cited identified with an asterisk.

Occurrence

- R - resident; found all year; breeds on Area.
- SR - summer resident; breeds on Area.
- WV - winter visitor
- M - migrant; spring and/or fall
- I - irregular, occurs at irregular intervals.
- SV - summer visitor, non-breeder
- \* - not known to breed on Area

Abundance

- VC - very common; 25 or more animals observed z/day
  - C - common; 10-24 animals observed/day
  - U - uncommon; 1-9 animals observed/day
  - R - rare; 5 or less animals observed/year or over several years.
- z Animals observed refers to sightings of the animals itself or its sign (calls, tracks, droppings, burrows ...)

Habitats

- X - preferred habitat
- +

















Appendix Table 4. Definitions of the terms used in Table 3.

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Definition of Terms

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BIRDS AND MAMMALS - NATIONAL CLASSIFICATION (U.S. Dept. Inter. 1973b)

- E - Endangered; (officially given recognition in the Federal Register) any species which is in danger of extinction throughout all or a significant portion of its range.
- SU - Status undetermined; insufficient data currently available to reliably assess the status of the species; however, preliminary information indicates that the species may be threatened or endangered.

BIRDS - STATE CLASSIFICATION (Marshall 1969)

- E - Endangered; an endangered species or subspecies is one whose prospects of survival and reproduction are in immediate jeopardy. Its peril may result from one or many causes - loss of habitat or change in habitat, overexploitation, predation, competition, disease. An endangered species must have help or extinction will probably follow.
- R - Rare; a rare species or subspecies is one that, although not presently threatened with extinction, is in such small numbers throughout its range that it may be endangered if its environment worsens. Close watch of its status is necessary.
- P - Peripheral; a peripheral species or subspecies is one whose occurrence in Oregon is at the edge of its natural range and which is rare or endangered within Oregon, although not in its range as a whole. Special attention may be necessary to assure retention in our State's fauna.
- SU - Status undetermined; a status undetermined species or subspecies is one that has been suggested as possibly endangered, or peripheral, but about which there is not enough information to determine its status. More information is needed.

MAMMALS - STATE CLASSIFICATION (Olterman and Verts 1972)

- R - Rare; a rare species was defined as one which was very uncommon in Oregon, but was not in immediate danger of extirpation. A species may be rare as a result of man's activities, or it may be rare under natural conditions.
- SU - Status undetermined; species for which relatively little information was available, and for which information obtained provided grossly conflicting evidence regarding their present status, were assigned to a category designed "status undetermined".
-

Appendix Table 5. Wildlife species of the Cascade Head Scenic-Research Area currently classified as game animals, protected wildlife, or unprotected wildlife by Oregon and/or Federal regulations, laws or treaties, as of July 1, 1975.

Birds	Mammals	Amphibians
	GAME ANIMALS#	
Ruffed grouse	Black-tailed deer	Bullfrog
Blue grouse	Roosevelt elk	
Mountain quail	Black bear	
Mourning dove	Beaver	
Band-tailed pigeon	Mink	
American coot	Marten	
Common snipe	Muskrat	
Black brandt	River otter	
Canada goose	Raccoon	
White-fronted goose		
Snow goose		
Mallard		
Gadwall		
Pintail		
Green-winged teal		
Blue-winged teal		
Cinnamon teal		
European widgeon		
American widgeon		
Shovler		
Wood duck		
Redhead		
Ring-necked duck		
Canvas back		
Greater scaup		
Lesser scaup		
Common goldeneye		
Burrows goldeneye		
Bufflehead		
Old squaw		
Harlequin		
Whitewing scoter		
Surf scoter		
Common scoter		
Rudy duck		
Hooded merganser		
Common merganser		
Red-breasted merganser		
	PROTECTED WILDLIFE <sup>o</sup>	
All birds except "gamebirds" and "unprotected birds"	Harbor seal	Tailed frog
Red-winged blackbird*	Elephant seal	
Brewers blackbird*	Northern sea lion	
Cowbird*	California sea lion	
Common crow*	Flying squirrel*	
	Chickaree*	
	Townsend chipmunk*	
	UNPROTECTED WILDLIFE+	
Starling	All mammals, amphibians and reptiles not classified as <u>game animals</u> or <u>protected wildlife</u> may be taken at any time with a valid hunting license.	
House sparrow		

#Game animals - the taking of these animals is controlled by either State statute or regulation and Federal laws or treaties. NOTE: A large number of other animals are classified as game animals; however, there currently is no open season for these on the Siuslaw National Forest.

<sup>o</sup>Protected wildlife - the taking of these animals is prohibited by either State statute or regulation and by Federal laws or treaties. NOTE: \*Species are protected except when causing damage to agriculture.

+Unprotected wildlife - The taking of these animals is allowed at any time by State statute or regulation and by Federal laws or treaties with the permission of the landowner and in compliance with applicable laws and regulations.

Appendix Table 6. Scientific names of animals mentioned in the text.

COMMON NAME	SCIENTIFIC NAME	COMMON NAME	SCIENTIFIC NAME
<u>INVERTEBRATES</u>		<u>FISHES (cont.)</u>	
Mussel	<u>Mytilus Californianus</u>	Topsmelt	<u>Atherinops affinis</u>
Soft shelled clam	<u>Mya arenaria</u>	Jacksmelt	<u>Atherinopsis Californiensis</u>
Sand shrimp	<u>Crangon sp.</u>	Tube-nose poacher	<u>Pallasina barbata</u>
Red rock crab	<u>Cancer productus</u>	Pricklebreast poacher	<u>Stellerina xyosterna</u>
Dungeness crab	<u>Cancer magister</u>	High cockscomb prickleback	<u>Anoplarchus purpureus</u>
Crayfish	<u>Astacus nigrescens</u>	Snake prickpleback	<u>Lumpenus sagitta</u>
		Bay pipefish	<u>Syngnathus griseolineatus</u>
		Tube snout	<u>Aulorhynchus flavidus</u>
Pacific lamprey	<u>Entosphenus tridentatus</u>	Saddleback gunnel	<u>Pholis ornata</u>
Western brook lamprey	<u>Lampetra planeri</u>	Red gunnel	<u>Pholis schultzi</u>
River lamprey	<u>Lampetra ayresi</u>	Rockweed gunnel	<u>Xerorpes fucorum</u>
Chum salmon	<u>Oncorhynchus keta</u>	Arrow goby	<u>Clevelandia ios</u>
Coho salmon	<u>Oncorhynchus kisutch</u>	Bay goby	<u>Lepidogobius lepidus</u>
Chinook salmon	<u>Oncorhynchus tshawytscha</u>	Longnose skate	<u>Raja rhina</u>
Pink salmon	<u>Oncorhynchus gorbuscha</u>	Green sturgeon	<u>Acipenser medirostris</u>
Sockeye salmon	<u>Oncorhynchus nerka</u>	Wolf eel	<u>Acipenser transmontanus</u>
Steelhead/rainbow trout	<u>Salmo clarki</u>	Black rockfish	<u>Sebastes melonops</u>
Coast Range sculpin	<u>Cottus aleuticus</u>	Blue rockfish	<u>Sebastes mystinus</u>
Riffle sculpin	<u>Cottus gulosus</u>	Copper rockfish	<u>Sebastes caurinus</u>
Blacksided dace	<u>Rhinichthys osculus</u>	Bacaccio	<u>Sebastes paucispinis</u>
Threespine stickleback	<u>Gasterosteus aculeatus</u>	Sablefish	<u>Anoplopoma fimbria</u>
Starry flounder	<u>Platichthys stellatus</u>	Ling cod	<u>Ophiodon elongatus</u>
English sole	<u>Parophrys vetulus</u>	Kelp greenling	<u>Hexagrammos decagrammus</u>
Sand sole	<u>Psettichthys melanostictus</u>	Staghorn sculpin	<u>Leptocottus armatus</u>
Butter sole	<u>Isopsetta isolepis</u>	Padded sculpin	<u>Artemius fenestralis</u>
Pacific sanddab	<u>Citharichthys sordidus</u>	Mosshead sculpin	<u>Clinocottus globiceps</u>
Shiner perch	<u>Cymatogaster aggregata</u>	Buffalo sculpin	<u>Enophrys bison</u>
Pile perch	<u>Rhacochilus vacca</u>	Tidepool sculpin	<u>Oligocottus maculosus</u>
Redtail surfperch	<u>Amphistichus rhodoterus</u>	Silver spotted sculpin	<u>Blepsias cirrhosus</u>
Walleye surfperch	<u>Hyperprosopon argenteum</u>	Sharpnose sculpin	<u>Clinocottus acuticeps</u>
Silver surfperch	<u>Hyperprosopon ellipticum</u>	Cabezon	<u>Scorpaenichthys marmoratus</u>
Striped seaperch	<u>Embiotoca lateralis</u>	Brown Irish lord	<u>Hemilepidotus spinosus</u>
White seaperch	<u>Phanerodon furcatus</u>	Red Irish lord	<u>Hemilepidotus hemilepidotus</u>
Longnose lancet	<u>Alepisaurus ferox</u>	Pacific herring	<u>Clupea harengus pallasi</u>
Pacific tomcod	<u>Microgadus proximus</u>		

Appendix Table 6 (cont.)

COMMON NAME	SCIENTIFIC NAME	COMMON NAME	SCIENTIFIC NAME
<u>FISHES (Cont.)</u>		<u>BIRDS</u>	
Northern anchovey	<u>Engraulis mordax</u>	Common loon	<u>Gavia immer</u>
White bait smelt	<u>Allosmerus elongatus</u>	Arctic loon	<u>Gavia arctica</u>
Surf smelt	<u>Hypomesus pretiosus</u>	Red-throated loon	<u>Gavia stellata</u>
Eulachon	<u>Thaleichthys pacificus</u>	Red-necked grebe	<u>Podiceps grisegena</u>
Longfin smelt	<u>Spirinchus thaleichthys</u>	Horned grebe	<u>Podiceps auritus</u>
Rock greenling	<u>Hexagrammas lagocephalus</u>	Eared grebe	<u>Podiceps caspicus</u>
Ringtail snailfish	<u>Liparis rutteri</u>	Western grebe	<u>Aechmophours occidentalis</u>
Slipskin snailfish	<u>Liparis fucensis</u>	Pied-billed grebe	<u>Podilymbus podiceps</u>
<u>AMPHIBIANS</u>		Leach's petrel	<u>Oceanodroma leucorhoa</u>
Northwestern salamander	<u>Ambystoma gracile</u>	Brown pelican	<u>Pelecanus occidentalis</u>
Pacific giant salamander	<u>Dicamptodon ensatus</u>	Double-crested cormorant	<u>Phalacrocorax auritus</u>
Olympic salamander	<u>Rhyacotriton olympicus</u>	Brandt's cormorant	<u>Phalacrocorax penicillatus</u>
Rough-skinned newt	<u>Taricha granulosa</u>	Pelagic cormorant	<u>Phalacrocorax pelagicus</u>
Dunn's salamander	<u>Plethodon dunni</u>	Great blue heron	<u>Ardea herodias</u>
Western red-backed salamander	<u>Plethodon vehiculum</u>	Green heron	<u>Butorides virescens</u>
Oregon salamander	<u>Ensatina eschscholtzi</u>	Common egret	<u>Casmerodius albus</u>
Clouded salamander	<u>Aneides ferreus</u>	Black-crowned night heron	<u>Nycticorax nycticorax</u>
Western toad	<u>Bufo boreas</u>	American bittern	<u>Botaurus lentiginosus</u>
Pacific treefrog	<u>Hyla regilla</u>	Least bittern	<u>Lxobrychus exilis</u>
Red-legged frog	<u>Rana aurora</u>	Whistling swan	<u>Olor columbianus</u>
Bullfrog	<u>Rana catesbeiana</u>	Aleutian Canada goose	<u>Branta canadensis leucopareia</u>
Tailed frog	<u>Ascaphus truei</u>	Canada goose	<u>Branta canadensis</u>
<u>REPTILES</u>		Snow goose	<u>Chen hyperborea</u>
Rubber boa	<u>Charina bottae</u>	Black brant	<u>Branta nigricans</u>
Ringneck snake	<u>Diadophis punctatus</u>		
Common garter snake	<u>Thamnophis sirtalis</u>		
Northwestern garter snake	<u>Thamnophis ordinoides</u>		
Gopher snake	<u>Pituophis melanoleucus</u>		
Northern alligator lizard	<u>Gerrhonotus coeruleus</u>		

Appendix Table 6. (cont.)

COMMON NAME	SCIENTIFIC NAME	COMMON NAME	SCIENTIFIC NAME
<u>BIRDS (cont.)</u>		<u>BIRDS (cont.)</u>	
White-fronted goose	<u>Anser albifrons</u>	Mountain quail	<u>Oreortyx pictus</u>
Mallard	<u>Anas platyrhynchos</u>	California condor	<u>Gymnogyps californianus</u>
Gadwall	<u>Anas strepera</u>	European widgeon	<u>Anas penelope</u>
Pintail	<u>Anas acuta</u>	Virginia rail	<u>Rallus limicola</u>
Green-winged teal	<u>Anas carolinensis</u>	Sora	<u>Porzana carolina</u>
Blue-winged teal	<u>Anas discors</u>	American coot	<u>Fulica americana</u>
Cinnamon teal	<u>Anas cyanoptera</u>	Black oystercatcher	<u>Haematopus bachmani</u>
American widgeon	<u>Mareca americana</u>	Semipalmated plover	<u>Charadrius semipalmatus</u>
Shoveler	<u>Spatula clypeata</u>	Snowy plover	<u>Charadrius alexandrinus</u>
Wood duck	<u>Aix sponsa</u>	Killdeer	<u>Charadrius vociferus</u>
Readhead	<u>Aythya americana</u>	American golden plover	<u>Pluvialis dominica</u>
Ring-necked duck	<u>Aythya collaris</u>	Black-bellied plover	<u>Squatarola squatarola</u>
Canvasback	<u>Aythya valisineria</u>	Surfbird	<u>Aphriza virgata</u>
Greater scaup	<u>Aythya marila</u>	Ruddy turnstone	<u>Arenaria interpres</u>
Lesser scaup	<u>Aythya affinis</u>	Black turnstone	<u>Arenaria melanocephala</u>
Common goldeneye	<u>Bucephala clangula</u>	Common snipe	<u>Capella gallinago</u>
Barrows goldeneye	<u>Bucephala islandica</u>	Long-billed curlew	<u>Numenius americanus</u>
Bufflehead	<u>Bucephala albeola</u>	Whimbrel	<u>Numenius phaeopus</u>
Old squaw	<u>Clangula hyemalis</u>	Spotted sandpiper	<u>Actitis macularia</u>
Harlequin duck	<u>Histrionicus histrionicus</u>	Solitary sandpiper	<u>Tringa solitaria</u>
White-winged scoter	<u>Melanitta deglandi</u>	Wandering tattler	<u>Heteroscelus incanum</u>
Surf scoter	<u>Melanitta perspicillata</u>	Willet	<u>Catoptrophorus semipalmatus</u>
Common scoter	<u>Oidemia nigra</u>	Greater yellowlegs	<u>Totanus melanoleucus</u>
Ruddy duck	<u>Oxyura jamaicensis</u>	Lesser yellowlegs	<u>Totanus falvipes</u>
Hooded merganser	<u>Lophodytes cucullatus</u>	Knot	<u>Calidris canutus</u>
Common merganser	<u>Mergus merganser</u>	Pectoral sandpiper	<u>Erolia melanotos</u>
Red-breasted merganser	<u>Mergus serrator</u>	Baird's sandpiper	<u>Erolia bairdii</u>
Turkey vulture	<u>Cathartes aura</u>	Least sandpiper	<u>Erolia minutilla</u>
Sharp-shinned hawk	<u>Accipiter striatus</u>	Dunlin	<u>Erolia alpina</u>
Cooper's hawk	<u>Accipiter cooperii</u>	Short-billed dowitcher	<u>Limnodromus griseus</u>
Red-tailed hawk	<u>Buteo jamaicensis</u>	Alaskan short-billed dowitcher	<u>Limnodromus griseus caurinus</u>
Rough-legged hawk	<u>Buteo lagopus</u>	Long-billed dowitcher	<u>Limnodromus scolopaceus</u>
Northern bald eagle	<u>Haliaeetus leucocephalus alascanus</u>	Western sandpiper	<u>Ereunetes mauri</u>
Marsh hawk	<u>Circus cyaneus</u>	Marbled godwit	<u>Limosa fedoa</u>
Sparrow hawk	<u>Falco sparverius</u>	Sanderling	<u>Crocethia alba</u>
American peregrine falcon	<u>Falco peregrinus anatum</u>	Red phalarope	<u>Phalaropus fulicarius</u>
Arctic peregrine falcon	<u>Falco peregrinus trundrius</u>	Wilson's phalarope	<u>Steganopus tricolor</u>
Pigeon hawk	<u>Falco columbarius</u>	Northern phalarope	<u>Lobipes lobatus</u>
Blue grouse	<u>Dendragapus obscurus</u>	Glaucous gull	<u>Larus hyperboreus</u>
Ruffed grouse	<u>Bonasa umbellus</u>	Glaucous-winged gull	<u>Larus glaucescens</u>

Appendix Table 6 (cont.)

COMMON NAME	SCIENTIFIC NAME	COMMON NAME	SCIENTIFIC NAME
<u>BIRDS (cont.)</u>		<u>BIRDS (cont.)</u>	
Western gull	<u>Larus occidentalis</u>	Willow flycatcher	<u>Empidonax trailli</u>
Herring gull	<u>Larus argentatus</u>	Western flycatcher	<u>Empidonax difficilis</u>
California gull	<u>Larus californicus</u>	Hammond's flycatcher	<u>Empidonax hammondii</u>
Ring-billed gull	<u>Larus delawarensis</u>	Dusky flycatcher	<u>Empidonax oberholseri</u>
Mew gull	<u>Larus canus</u>	Western wood pewee	<u>Contopus sordidulus</u>
Bonaparte's gull	<u>Larus philadelphia</u>	Olive-sided flycatcher	<u>Nuttallornis borealis</u>
Heermann's gull	<u>Larus heermanni</u>	Violet-green swallow	<u>Tachycineta thalassina</u>
Black-legged kittiwake	<u>Rissa tridactyla</u>	Tree swallow	<u>Iridoprocne bicolor</u>
Sabine's gull	<u>Xema sabini</u>	Bank swallow	<u>Riparia riparia</u>
Common tern	<u>Sterna hirundo</u>	Rough-winged swallow	<u>Stelgidopteryx ruficollis</u>
Arctic tern	<u>Sterna paradisaea</u>	Barn swallow	<u>Hirundo rustica</u>
Caspian tern	<u>Hydroprogne caspia</u>	Cliff swallow	<u>Petrochelidon pyrrhonota</u>
Common muure	<u>Uria aalge</u>	Purple martin	<u>Progne subis</u>
Pigeon guillemot	<u>Cepphus columba</u>	Gray jay	<u>Perisoreus canadensis</u>
Marbled murrelet	<u>Brachyramphus marmoratum</u>	Steller's jay	<u>Cyanocitta stelleri</u>
Ancient murrelet	<u>Synthliboramphus antiquum</u>	Scrub jay	<u>Aphelocoma coerulescens</u>
Cassin's auklet	<u>Ptychoramphus aleutica</u>	Common raven	<u>Corvus corax</u>
Parakeet auklet	<u>Cyclorhynchus psittacula</u>	Common crow	<u>Corvus brachyrhynchos</u>
Rhinoceros auklet	<u>Cerorhinca monocerata</u>	Black-capped chickadee	<u>Parus atricapillus</u>
Horned puffin	<u>Fratercula corniculata</u>	Chestnut-backed chickadee	<u>Parus rufescens</u>
Tufted puffin	<u>Lunda cirrhata</u>	Mountain chickadee	<u>Parus gambeli</u>
Band-tailed pigeon	<u>Columba fasciata</u>	Common bushtit	<u>Psaltriparus minimus</u>
Mourning dove	<u>Zenaidura macroura</u>	White-breasted nuthatch	<u>Sitta carolinensis</u>
Barn owl	<u>Tyto alba</u>	Red-breasted nuthatch	<u>Sitta canadensis</u>
Screech owl	<u>Otus asio</u>	Brown creeper	<u>Certhia familiaris</u>
Great horned owl	<u>Bubo virginianus</u>	Wrentit	<u>Chamaea fasciata</u>
Dipper	<u>Cinclus mexicanus</u>	House wren	<u>Troglodytes aedon</u>
Pygmy owl	<u>Glaucidium gnoma</u>	Winter wren	<u>Troglodytes troglodytes</u>
Long-eared owl	<u>Asio otus</u>	Bewick's wren	<u>Thryomanes bewickii</u>
Short-eared owl	<u>Asio flammeus</u>	Long-billed marsh wren	<u>Telmatodytes palustris</u>
Saw-whet owl	<u>Aegolius acadicus</u>	Robin	<u>Turdus migratorius</u>
Common nighthawk	<u>Chordeles minor</u>	Varied thrush	<u>Ixoreus naevius</u>
Vaux's swift	<u>Chaetura vauxi</u>	Hermit thrush	<u>Hylocichla guttata</u>
Rufous hummingbird	<u>Selasphorus rufus</u>	Swainson's thrush	<u>Hylocichla ustulata</u>
Belted kingfisher	<u>Megaceryle alcyon</u>	Western bluebird	<u>Sialia mexicana</u>
Common flicker	<u>Colaptes auratus</u>	Townsend's solitaire	<u>Myadestes townsendi</u>
Pileated woodpecker	<u>Dryocopus pileatus</u>	Golden-crowned kinglet	<u>Regulus satrapa</u>
Lewis' woodpecker	<u>Asyndesmus lewis</u>	Ruby-crowned kinglet	<u>Regulus calendula</u>
Yellow-bellied sapsucker	<u>Sphyrapicus varius</u>	Water pipit	<u>Anthus spinoletta</u>
Hairy woodpecker	<u>Dendrocopos villosus</u>	Bohemian waxwing	<u>Bombycilla garrula</u>
Downy woodpecker	<u>Dendrocopos pubescens</u>	Cedar waxwing	<u>Bombycilla cedrorum</u>
Foresters tern	<u>Sterna forsteri</u>	Rock sandpiper	<u>Erolia maritima</u>
Forked-tailed petrel	<u>Oceanodrome furcata</u>	Red eyed vireo	<u>Vireo olivaceus</u>

Appendix Table 6. (cont.)

COMMON NAME	SCIENTIFIC NAME	COMMON NAME	SCIENTIFIC NAME
<u>BIRDS (cont.)</u>		<u>BIRDS (cont.)</u>	
Northern shrike	<u>Lanius excubitor</u>	White-throated sparrow	<u>Zonotrichia albicollis</u>
Loggerhead shrike	<u>Lanius ludovicianus</u>	Fox sparrow	<u>Passerella iliaca</u>
Starling	<u>Sturnus vulgaris</u>	Lincoln's sparrow	<u>Melospiza lincolni</u>
Hutton's vireo	<u>Vireo huttoni</u>	Song sparrow	<u>Melospiza melodia</u>
Solitary vireo	<u>Vireo solitarius</u>		
Warbling vireo	<u>Vireo gilvus</u>		
Orange-crowned warbler	<u>Vermivora celata</u>	<u>MAMMALS</u>	
Nashville warbler	<u>Vermivora ruficapilla</u>	Pocket gopher	<u>Thomomys monticola</u>
Yellow warbler	<u>Dendroica petechia</u>	Vagrant shrew	<u>Sorex vagrans</u>
Yellow-rumped warbler	<u>Dendroica coronata</u>	Yaquina shrew	<u>Sorex yaquinae</u>
Black-throated gray warbler	<u>Dendroica nigrescens</u>	Marsh shrew	<u>Sorex bendirii</u>
Townsend's warbler	<u>Dendroica townsendi</u>	Trowbridge shrew	<u>Sorex trowbridgii</u>
Hermit warbler	<u>Dendroica occidentalis</u>	Coast mole	<u>Scapanus orarius</u>
MacGillivray's warbler	<u>Oporornis tolmiei</u>	Townsend mole	<u>Microtus townsendi</u>
Yellowthroat	<u>Geothlypis trichas</u>	Shrew-mole	<u>Neurotrichus gibbsii</u>
Yellow-breasted chat	<u>Icteria virens</u>	Little brown bat	<u>Myotis lucifugus</u>
Wilson's warbler	<u>Wilsonia pusilla</u>	Fringed bat	<u>Myotis thysanodes</u>
House sparrow	<u>Passer domesticus</u>	California bat	<u>Myotis californicus</u>
Western meadowlark	<u>Sturnella neglecta</u>	Long-legged bat	<u>Myotis volans</u>
Red-winged blackbird	<u>Agelaius phoeniceus</u>	Long-eared bat	<u>Myotis evotis</u>
Brewer's blackbird	<u>Euphagus cyanocephalus</u>	Yuma bat	<u>Myotis yumanensis</u>
Brown-headed cowbird	<u>Molothus ater</u>	Hoary bat	<u>Lasiurus cinereus</u>
Western tanager	<u>Piranga ludoviciana</u>	Silvery-haired bat	<u>Lasionycteris noctivagans</u>
Black-headed grosbeak	<u>Pheucticus melanocephalus</u>	Big brown bat	<u>Eptesicus ruscus</u>
Lazuli bunting	<u>Passerina amoena</u>	Western big-eared bat	<u>Plecotus townsendi</u>
Evening grosbeak	<u>Hesperiphona vespertina</u>	Brush rabbit	<u>Sylvilagus bachmani</u>
Purple finch	<u>Carpodacus purpureus</u>	Snowshoe hare	<u>Lepus americanus</u>
House finch	<u>Carpodacus mexicanus</u>	Mountain beaver	<u>Aplodontia rufa</u>
Pine siskin	<u>Spinus pinus</u>	California ground squirrel	<u>Spermophilus beecheyi</u>
American goldfinch	<u>Spinus tristis</u>	Townsend chipmunk	<u>Eutamias townsendi</u>
Lesser goldfinch	<u>Spinus psaltria</u>	Chickaree	<u>Tamiasciurus douglasi</u>
Red crossbill	<u>Loxia curvirostra</u>	Northern flying squirrel	<u>Glaucomys sabrinus</u>
Rufous-sided towhee	<u>Pipilo erythrophthalmus</u>	Beaver	<u>Castor canadensis</u>
Savannah sparrow	<u>Passerculus sandwichensis</u>	Deer mouse	<u>Peromyscus maniculatus</u>
Vesper sparrow	<u>Poocetes gramineus</u>	Bushy-tailed woodrat	<u>Neotoma cinerea</u>
Darkeyed junco	<u>Junco hyemalis</u>	Coyote	<u>Canis latrans</u>
Clipping sparrow	<u>Spizella passerina</u>	Black bear	<u>Ursus americanus</u>
White-crowned sparrow	<u>Zonotrichia leucophrys</u>	Raccoon	<u>Procyon lotor</u>
Golden-crowned sparrow	<u>Zonotrichia atricapilla</u>	Marten	<u>Martes americana</u>

Appendix Table 6. (cont.)

COMMON NAME	SCIENTIFIC NAME	COMMON NAME	SCIENTIFIC NAMES
<u>MAMMALS (cont.)</u>			
Mink	<u>Mustela vison</u>		
Long-tailed weasel	<u>Mustela frenata</u>		
Short-tailed weasel	<u>Mustela erminea</u>		
Striped skunk	<u>Mephitis mephitis</u>		
Spotted skunk	<u>Spilogale putorius</u>		
River otter	<u>Lutra canadensis</u>		
Mountain lion	<u>Felis concolor</u>		
Bobcat	<u>Lynx rufus</u>		
Roosevelt elk	<u>Cervus canadensis</u>		
Black-tailed deer	<u>Odocoileus hemionus</u> <u>hemionus</u>		
White-footed vole	<u>Phenacomys albipes</u>		
Red-tree mouse	<u>Arborimus longicaudus</u>		
California red-backed vole	<u>Clethrionomys occidentalis</u>		
Townsend vole	<u>Microtus townsendi</u>		
Longtail vole	<u>Microtus longicaudus</u>		
Oregon vole	<u>Microtus oregoni</u>		
Muskkrat	<u>Ondatra zibethica</u>		
Pacific jumping mouse	<u>Zapus teinotatus</u>		
Porcupine	<u>Erethizon dorsatum</u>		
Gray fox	<u>Urocyon cinereoargenteus</u>		
Wolf	<u>Canis lupis</u>		
Harbor seal	<u>Phoca vitulina</u>		
Northern sea lion	<u>Eumetopias jubata</u>		
California sea lion	<u>Alaophus californianus</u>		
Elephant seal	<u>Mirounga angustirostris</u>		
Opossum	<u>Didelphis marsupialis</u>		
Brown rat	<u>Rattus rattus</u>		
Norway rat	<u>Rattus norvegicus</u>		
House mouse	<u>Mus musculus</u>		
Sea otter	<u>Enhydra lutris</u>		

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