

List of Appendices of the
Subbasin Management Plan for the
Lower Middle Mainstem
Columbia River (including Rock Creek

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Appendix A. Lower Mid-Columbia Mainstem including Rock Creek subbasin planners and contributors

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Appendix B

Appendix B. Common and Scientific Names Used in Lower Mid-Columbia Mainstem Assessment

Common Name	Species Name
Birds	
acorn woodpecker	<i>Melanerpes formicivorus</i>
American robin	<i>Turdus migratorius</i>
ash-throated flycatcher	<i>Myiarchus cinerascens</i>
bald eagle	<i>Haliaeetus leucocephalus</i>
black-headed grosbeak	<i>Pheucticus melanocephalus</i>
black-throated gray warbler	<i>Dendroica nigrescens</i>
Brewer's Sparrow	<i>Spizella breweri</i>
brown creepers	<i>Certia americana</i>
Cassin's finch	<i>Cardopacus cassinii</i>
chipping sparrow	<i>Spizella passerine</i>
Clark's nutcracker	<i>Nucifraga columbiana</i>
common merganser	<i>Mergus merganser</i>
dusky flycatchers	<i>Empidonax oberholseri</i>
European starlings	<i>Sturnus vulgaris</i>
evening grosbeak	<i>Coccothraustes vespertinus</i>
flamulated owl	<i>Otus flammeolus</i>
grasshopper sparrow	<i>Ammodramus savannarum</i>
harlequin duck	<i>Histrionicus histrionicus</i>
hermit thrush	<i>Catherus guttatus</i>
lark sparrow	<i>Chondetes grammacus</i>
lazuli bunting	<i>Passerina anoena</i>
Lewis' Woodpecker	<i>Melanerpes lewis</i>
loggerhead shrike	<i>Lanius ludovicianus</i>
MacGillivray's warbler	<i>Oporornis tolmiei</i>
mountain chickadee	<i>Poecile gambeli</i>
Nashville warbler	<i>Vermivora ruficapilla</i>
osprey	<i>Pandion haliaetus</i>

pygmy nuthatch	<i>Sitta pygmaea</i>
red crossbill	<i>Loxia curvirostra</i>
red-breasted nuthatch	<i>Sitta Canadensis</i>
sagebrush vole	<i>Lemmiscus curtatus</i>
scrub jays	<i>Aphelocoma coerulescens</i>
short-eared owl	<i>Asio flammeus</i>
spotted towhee	<i>Pipilo erythrophthalmus</i>
western tanager	<i>Piranga ludoviciana</i>
western wood-peewee	<i>Contopus sordidulus</i>
white-headed woodpecker	<i>Picooides albolarvatus</i>
Williamson's sapsucker	<i>Sphyrapicus thyroideus</i>
Mammals	
American beaver	<i>Castor canadensis</i>
black bear	<i>Ursus americanus</i>
California ground squirrel	<i>Spermophilus beecheyi</i>
Columbian black-tailed deer	<i>Odocoileus hemionus columbianus</i>
cougar	<i>Puma concolor</i>
eastern gray squirrels	<i>Sciurus carolinensis</i>
elk	<i>Cervus elaphus</i>
ground squirrels	<i>Spermophilus spp.</i>
mule deer	<i>Odocoileus hemionus</i>
northern river otter	<i>Lontra canadensis</i>
rocky mountain mule deer	<i>Odocoileus hemionus hemionus</i>
western gray squirrel	<i>Sciurus griseus</i>
Reptiles	
California Mountain king snake	<i>Lampropeltis zonata</i>
sharptail snake	<i>Contia tenuis</i>
short-horned lizard	<i>Phrynosoma douglasii</i>
southern alligator lizard	<i>Elgaria multicarinata</i>
western rattlesnake	<i>Crotalus viridis</i>
western rattlesnake	<i>Crotalus viridis</i>
western skink	<i>Eumeces skiltonianus</i>

Amphibians	
great basin spadefoot	<i>Scaphiopus intermontanus</i>
Fish	
coho salmon	<i>Oncorhynchus kisutch</i>
cutthroat trout	<i>Oncorhynchus clarki</i>
salmon or trout	<i>Oncorhynchus</i> spp.
Plants	
alder	<i>Alnus</i> spp.
antelope bitterbrush	<i>Purshia tridentata</i>
ash	<i>Sorbus</i> spp.
Balsamroot	<i>Balsamorhiza</i> spp.
balsamroot Carey's	<i>Balsamorhiza careyana</i>
balsamroot, arrow-leaf	<i>Balsamorhiza sagittata</i>
balsamroot, Hooker's	<i>Balsamorhiza hookeri</i>
basin sagebrush	<i>Artemisia tridentata tridentata</i>
bitterbrush	<i>Purshia tridentata</i>
black cottonwood	<i>Populus balsamifera</i> ssp. <i>Trichocarpa</i>
blackberry	<i>Rubus discolor</i>
blue wildrye	species??
bluebunch wheatgrass	<i>Agropyron spicata</i>
buckwheat	<i>Eriogonum</i> spp.
burrow weed	<i>Hyplopopus bloomer</i>
Canada bluegrass	<i>Poa compressa</i>
ceonothus	<i>Ceonothus</i> spp.
cheatgrass	<i>Bromus tectorum</i>
common camas	<i>Camassia quamash</i>
common cattail	<i>Typha latifolia</i>
common hornwort	<i>Ceratophyllum demersum</i>
common snowberry	<i>Symphoricarpus albus</i>
common watercress	<i>Nasturtium officinale</i>
cottonwood sp.	<i>Populus deltoids</i>
currant	<i>Ribes</i> spp.

Cusick's bluegrass	<i>Poa cusickii</i>
deerbrush	<i>Ceanothus integerrimus</i>
desert parsley	<i>Lomatium canbyi</i>
desert parsley, nine-leaved	<i>Lomatium triternatum</i>
dogbane	<i>Apocynum</i> spp.
Douglas-fir	<i>Pseudotsuga menziesii</i>
elk sedge	<i>Corex geyeri</i>
greasewood	<i>Sarcobatus vermiculatus</i>
great basin wild rye	<i>Leymus cinereus</i>
greater bladderwort	<i>Utricularia vulgaris</i>
hazel	<i>Corylus comuta</i>
Idaho fescue	<i>Festuca idahoensis</i>
Indian rice grass	<i>Achnatherum hymenoides</i>
Kentucky bluegrass	<i>Poa pratensis</i>
knapweed	<i>Centaurea</i> spp.
lodgepole pine	<i>Pinus contorta latifolia</i>
lupine	<i>Lupinus</i> spp.
milkvetch sp.	<i>Astragalus columbianus</i>
milkvetch sp.	<i>Astragalus spaldingii</i>
mosses	?
mountain hemlock	<i>Tsuga mertensiana</i>
narrow-leaved bur-reed	<i>Sparganium angustifolium</i>
needle and thread	<i>Stipa comata</i>
needlegrass	<i>Stipa comata</i>
ninebark	<i>Physocarpus malvaceus</i>
oceanspray	<i>Holodiscus discolor</i>
Oregon grape	<i>Berberis nervosa</i>
paper birch	<i>Betula papyrifera</i>
peach-leaf willow	<i>Salix anygdaloides</i>
pine grass	species??
purple loosestrife	<i>Lysimachia salicaria</i>
rabbit-brush, gray	<i>Chrysothamnus nauseosa</i>

rabbit-brush, green	<i>Chrysothamnus viscidiflorus</i>
red-osier dogwood	<i>Cornus stolonifera</i>
redstem ceanothus	<i>Ceanothus sanguineus</i>
reed canarygrass	<i>Phalaris arundinacea</i>
rigid sagebrush	<i>Artemesia rigida</i>
rocky mountain juniper	<i>Juniperus scopulorum</i>
sago pondweed	<i>Potamogeton pectinatus</i>
salt & pepper	<i>Lomatium gormanii</i>
Sandberg's bluegrass	<i>Poa secunda</i>
sedges	<i>Carex</i> spp.
short-spine horsebrush	<i>Tetradymia spinosa</i>
smartweeds	<i>Polygonum</i> spp.
snowberry	<i>Symphoricarpos</i> spp.
snowbrush	<i>Ceanothus velutinus</i>
spike rushes	<i>Scirpus</i> spp.
spiny hopsage	<i>Grayia spinosa</i>
squaw carpet	<i>Ceanothus prostrates</i>
squirreltail	<i>Elymus elymoides</i>
steppe bluegrass	<i>Poa secunda</i>
subalpine fir	<i>Abies lasiocarpa</i>
swordfern	<i>Polystichum munitum</i>
three-tip sagebrush	<i>Artemesia tripartita</i>
Thurber's needle grass	<i>Stipa thurberina</i>
trembling aspen	<i>Populus tremuloides</i>
tule	<i>Scirpus</i> spp.
wapato	<i>Sagittaria latifolia</i>
water birch	<i>Betula occidentalis</i>
water-plantain	<i>Alisma plantago-aquatica</i>
western juniper	<i>Juniperus occidentalis</i>
western larch	<i>Larix occidentalis</i>
wild onion	<i>Allium</i> spp.
willow	<i>salix</i> spp.

Wood's rose	<i>Rosa woodsii</i>
yellow waterlily	<i>Nuphar polysepalum</i>
Other	
fungus sp.?	<i>Phytophthora ramorum</i>
shoestring root rot	<i>Amillaria mellea</i>
spruce budworm	<i>Choristoneura occidentalis</i>
trunk rot	<i>Polyporus dryophilus</i>

Appendix C

Appendix C: Wildlife species of the Lower Mid-Columbia Mainstem subbasin

Table C.1. Wildlife species occurring in the Lower Mid-Columbia Mainstem subbasin (IBIS 2003)

Common Name	Scientific Name	Presence / Status
Amphibians		
Tiger Salamander	<i>Ambystoma tigrinum</i>	Breeds
Northwestern Salamander	<i>Ambystoma gracile</i>	Breeds
Long-toed Salamander	<i>Ambystoma macrodactylum</i>	Breeds
Cope's Giant Salamander	<i>Dicamptodon copei</i>	Breeds
Pacific Giant Salamander	<i>Dicamptodon tenebrosus</i>	Breeds
Cascade Torrent Salamander	<i>Rhyacotriton cascadae</i>	Breeds
Rough-skinned Newt	<i>Taricha granulosa</i>	Breeds
Dunn's Salamander	<i>Plethodon dunnii</i>	Breeds
Larch Mountain Salamander	<i>Plethodon larselli</i>	Breeds
Van Dyke's Salamander	<i>Plethodon vandykei</i>	Breeds
Western Red-backed Salamander	<i>Plethodon vehiculum</i>	Breeds
Ensatina	<i>Ensatina eschscholtzii</i>	Breeds
Tailed Frog	<i>Ascaphus truei</i>	Breeds
Great Basin Spadefoot	<i>Scaphiopus intermontanus</i>	Breeds
Western Toad	<i>Bufo boreas</i>	Breeds
Woodhouse's Toad	<i>Bufo woodhousii</i>	Breeds
Pacific Chorus (Tree) Frog	<i>Pseudacris regilla</i>	Breeds
Red-legged Frog	<i>Rana aurora</i>	Breeds
Cascades Frog	<i>Rana cascadae</i>	Breeds
Oregon Spotted Frog	<i>Rana pretiosa</i>	Breeds
Columbia Spotted Frog	<i>Rana luteiventris</i>	Breeds
Northern Leopard Frog	<i>Rana pipiens</i>	Breeds
Bullfrog	<i>Rana catesbeiana</i>	Breeds
Total Amphibians: 23		
Birds		
American Avocet	<i>Recurvirostra americana</i>	rare

American Bittern	<i>Botaurus lentiginosus</i>	usually seen
American Coot	<i>Fulica americana</i>	Breeds
American Crow	<i>Corvus brachyrhynchos</i>	Breeds
American Dipper	<i>Cinclus mexicanus</i>	Breeds
American Goldfinch	<i>Carduelis tristis</i>	Breeds
American Kestrel	<i>Falco sparverius</i>	Breeds
American Pipit	<i>Anthus rubescens</i>	uncommon during migration
American Robin	<i>Turdus migratorius</i>	Breeds
Anna's Hummingbird	<i>Calypte anna</i>	Breeds
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>	Breeds
Baird's Sandpiper	<i>Calidris bairdii</i>	rare
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Breeds
Band-tailed Pigeon	<i>Columba fasciata</i>	uncommon during migration
Bank Swallow	<i>Riparia riparia</i>	Breeds
Barn Owl	<i>Tyto alba</i>	Breeds
Barn Swallow	<i>Hirundo rustica</i>	Breeds
Barred Owl	<i>Strix varia</i>	Breeds
Barrow's Goldeneye	<i>Bucephala islandica</i>	Breeds
Belted Kingfisher	<i>Ceryle alcyon</i>	Breeds
Bewick's Wren	<i>Thryomanes bewickii</i>	Breeds
Black Swift	<i>Cypseloides niger</i>	rare
Black Tern	<i>Chlidonias niger</i>	Breeds
Black-backed Woodpecker	<i>Picoides arcticus</i>	rare
Black-billed Magpie	<i>Pica pica</i>	Breeds
Black-capped Chickadee	<i>Poecile atricapillus</i>	Breeds
Black-chinned Hummingbird	<i>Archilochus alexandri</i>	usually seen during migration
Black-crowned Night-heron	<i>Nycticorax nycticorax</i>	uncommon during migration
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	Breeds
Black-necked Stilt	<i>Himantopus mexicanus</i>	Breeds
Black-throated Gray Warbler	<i>Dendroica nigrescens</i>	Breeds
Blue Grouse	<i>Dendragapus obscurus</i>	Breeds
Blue-winged Teal	<i>Anas discors</i>	uncommon during migration
Bobolink	<i>Dolichonyx oryzivorus</i>	Not on list

Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	Breeds
Brewer's Sparrow	<i>Spizella breweri</i>	Breeds
Brown Creeper	<i>Certhia americana</i>	Breeds
Brown-headed Cowbird	<i>Molothrus ater</i>	Breeds
Bullock's Oriole	<i>Icterus bullockii</i>	Breeds
Burrowing Owl	<i>Athene cunicularia</i>	Breeds
Bushtit	<i>Psaltriparus minimus</i>	Breeds
California Gull	<i>Larus californicus</i>	Breeds
California Quail	<i>Callipepla californica</i>	Breeds
Calliope Hummingbird	<i>Stellula calliope</i>	Breeds
Canada Goose	<i>Branta canadensis</i>	Breeds
Canyon Wren	<i>Catherpes mexicanus</i>	Breeds
Caspian Tern	<i>Sterna caspia</i>	common during migration
Cassin's Finch	<i>Carpodacus cassinii</i>	Breeds
Cassin's Vireo	<i>Vireo cassinii</i>	Breeds
Cedar Waxwing	<i>Bombycilla cedrorum</i>	Breeds
Chestnut-backed Chickadee	<i>Poecile rufescens</i>	Breeds
Chipping Sparrow	<i>Spizella passerina</i>	Breeds
Chukar	<i>Alectoris chukar</i>	Breeds
Cinnamon Teal	<i>Anas cyanoptera</i>	Breeds
Clark's Nutcracker	<i>Nucifraga columbiana</i>	rare
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	Breeds
Common Merganser	<i>Mergus merganser</i>	Breeds
Common Nighthawk	<i>Chordeiles minor</i>	Breeds
Common Poorwill	<i>Phalaenoptilus nuttallii</i>	Breeds
Common Raven	<i>Corvus corax</i>	Breeds
Common Yellowthroat	<i>Geothlypis trichas</i>	Breeds
Cooper's Hawk	<i>Accipiter cooperii</i>	Breeds
Dark-eyed Junco	<i>Junco hyemalis</i>	Breeds
Downy Woodpecker	<i>Picoides pubescens</i>	Breeds
Dunlin	<i>Calidris alpina</i>	usually seen during migration
Dusky Flycatcher	<i>Empidonax oberholseri</i>	Breeds
Eastern Kingbird	<i>Tyrannus tyrannus</i>	Breeds

European Starling	<i>Sturnus vulgaris</i>	Breeds
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	Breeds
Ferruginous Hawk	<i>Buteo regalis</i>	Breeds
Flammulated Owl	<i>Otus flammeolus</i>	Breeds
Forster's Tern	<i>Sterna forsteri</i>	Breeds
Fox Sparrow	<i>Passerella iliaca</i>	Breeds
Gadwall	<i>Anas strepera</i>	Breeds
Golden Eagle	<i>Aquila chrysaetos</i>	Breeds
Golden-crowned Kinglet	<i>Regulus satrapa</i>	Breeds
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	Breeds
Gray Catbird	<i>Dumetella carolinensis</i>	Breeds
Gray Flycatcher	<i>Empidonax wrightii</i>	Breeds
Gray Jay	<i>Perisoreus canadensis</i>	Breeds
Gray Partridge	<i>Perdix perdix</i>	Breeds
Great Blue Heron	<i>Ardea herodias</i>	Breeds
Great Horned Owl	<i>Bubo virginianus</i>	Breeds
Greater Scaup	<i>Aythya marila</i>	common during migration
Greater Yellowlegs	<i>Tringa melanoleuca</i>	uncommon during migration
Green Heron	<i>Butorides virescens</i>	usually seen during migration
Green-winged Teal	<i>Anas crecca</i>	Breeds
Hairy Woodpecker	<i>Picoides villosus</i>	Breeds
Hammond's Flycatcher	<i>Empidonax hammondii</i>	Breeds
Hermit Thrush	<i>Catharus guttatus</i>	Breeds
Hermit Warbler	<i>Dendroica occidentalis</i>	Breeds
Herring Gull	<i>Larus argentatus</i>	uncommon during migration
Hooded Merganser	<i>Lophodytes cucullatus</i>	Breeds
Horned Lark	<i>Eremophila alpestris</i>	Breeds
House Finch	<i>Carpodacus mexicanus</i>	Breeds
House Sparrow	<i>Passer domesticus</i>	Breeds
House Wren	<i>Troglodytes aedon</i>	Breeds
Hutton's Vireo	<i>Vireo huttoni</i>	Breeds
Killdeer	<i>Charadrius vociferus</i>	Breeds
Lark Sparrow	<i>Chondestes grammacus</i>	Breeds

Lazuli Bunting	<i>Passerina amoena</i>	Breeds
Least Sandpiper	<i>Calidris minutilla</i>	uncommon during migration
Lesser Goldfinch	<i>Carduelis psaltria</i>	Breeds
Lesser Scaup	<i>Aythya affinis</i>	common during migration
Lesser Yellowlegs	<i>Tringa flavipes</i>	rare
Lewis's Woodpecker	<i>Melanerpes lewis</i>	Breeds
Lincoln's Sparrow	<i>Melospiza lincolnii</i>	uncommon during migration
Loggerhead Shrike	<i>Lanius ludovicianus</i>	usually seen during migration
Long-billed Curlew	<i>Numenius americanus</i>	Breeds
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>	rare
Long-eared Owl	<i>Asio otus</i>	Breeds
Macgillivray's Warbler	<i>Oporornis tolmiei</i>	Breeds
Mallard	<i>Anas platyrhynchos</i>	Breeds
Marsh Wren	<i>Cistothorus palustris</i>	Breeds
Mountain Bluebird	<i>Sialia currucoides</i>	Breeds
Mountain Chickadee	<i>Poecile gambeli</i>	Breeds
Mountain Quail*	<i>Oreortyx pictus</i>	*Extirpated
Mourning Dove	<i>Zenaida macroura</i>	Breeds
Nashville Warbler	<i>Vermivora ruficapilla</i>	Breeds
Northern Bobwhite	<i>Colinus virginianus</i>	No
Northern Flicker	<i>Colaptes auratus</i>	Breeds
Northern Goshawk	<i>Accipiter gentilis</i>	Breeds
Northern Harrier	<i>Circus cyaneus</i>	Breeds
Northern Mockingbird	<i>Mimus polyglottos</i>	Breeds
Northern Pintail	<i>Anas acuta</i>	common during migration
Northern Pygmy-owl	<i>Glaucidium gnoma</i>	Breeds
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	Breeds
Northern Saw-whet Owl	<i>Aegolius acadicus</i>	Breeds
Northern Shoveler	<i>Anas clypeata</i>	common during migration
Northern Shrike	<i>Lanius excubitor</i>	Breeds
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Breeds
Orange-crowned Warbler	<i>Vermivora celata</i>	Breeds
Osprey	<i>Pandion haliaetus</i>	Breeds

Pacific-slope Flycatcher	<i>Empidonax difficilis</i>	Breeds
Pectoral Sandpiper	<i>Calidris melanotos</i>	rare
Peregrin Falcon	<i>Falco peregrinus</i>	Breeds
Pied-billed Grebe	<i>Podilymbus podiceps</i>	Breeds
Pileated Woodpecker	<i>Dryocopus pileatus</i>	Breeds
Pine Grosbeak	<i>Pinicola enucleator</i>	rare
Pine Siskin	<i>Carduelis pinus</i>	Breeds
Prairie Falcon	<i>Falco mexicanus</i>	Breeds
Purple Finch	<i>Carpodacus purpureus</i>	Breeds
Pygmy Nuthatch	<i>Sitta pygmaea</i>	Breeds
Red Crossbill	<i>Loxia curvirostra</i>	uncommon during migration
Red-breasted Nuthatch	<i>Sitta canadensis</i>	Breeds
Red-breasted Sapsucker	<i>Sphyrapicus ruber</i>	Breeds
Red-eyed Vireo	<i>Vireo olivaceus</i>	Breeds
Redhead	<i>Aythya americana</i>	uncommon during migration
Red-naped Sapsucker	<i>Sphyrapicus nuchalis</i>	Breeds
Red-necked Phalarope	<i>Phalaropus lobatus</i>	rare
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Breeds
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	Breeds
Ring-billed Gull	<i>Larus delawarensis</i>	common during migration
Ring-necked Duck	<i>Aythya collaris</i>	Breeds
Ring-necked Pheasant	<i>Phasianus colchicus</i>	Breeds
Rock Dove	<i>Columba livia</i>	Breeds
Rock Wren	<i>Salpinctes obsoletus</i>	Breeds
Rough-legged Hawk	<i>Buteo lagopus</i>	common during migration
Ruby-crowned Kinglet	<i>Regulus calendula</i>	common during migration
Ruddy Duck	<i>Oxyura jamaicensis</i>	usually seen during migration
Ruffed Grouse	<i>Bonasa umbellus</i>	Breeds
Rufous Hummingbird	<i>Selasphorus rufus</i>	Breeds
Sage Sparrow	<i>Amphispiza belli</i>	Breeds
Sage Thrasher	<i>Oreoscoptes montanus</i>	Breeds
Sandhill Crane	<i>Grus canadensis</i>	Breeds
Savannah Sparrow	<i>Passerculus sandwichensis</i>	Breeds

Say's Phoebe	<i>Sayornis saya</i>	Breeds
Sharp-shinned Hawk	<i>Accipiter striatus</i>	Breeds
Short-eared Owl	<i>Asio flammeus</i>	Breeds
Solitary Sandpiper	<i>Tringa solitaria</i>	rare
Song Sparrow	<i>Melospiza melodia</i>	Breeds
Sora	<i>Porzana carolina</i>	Breeds
Spotted Owl	<i>Strix occidentalis</i>	Breeds
Spotted Sandpiper	<i>Actitis macularia</i>	Breeds
Spotted Towhee	<i>Pipilo maculatus</i>	Breeds
Steller's Jay	<i>Cyanocitta stelleri</i>	Breeds
Stilt Sandpiper	<i>Calidris himantopus</i>	Not on list
Swainson's Hawk	<i>Buteo swainsoni</i>	Breeds
Swainson's Thrush	<i>Catharus ustulatus</i>	Breeds
Townsend's Solitaire	<i>Myadestes townsendi</i>	Breeds
Townsend's Warbler	<i>Dendroica townsendi</i>	Breeds
Tree Swallow	<i>Tachycineta bicolor</i>	Breeds
Tundra Swan	<i>Cygnus columbianus</i>	uncommon during migration
Turkey Vulture	<i>Cathartes aura</i>	Breeds
Varied Thrush	<i>Ixoreus naevius</i>	common during migration
Vaux's Swift	<i>Chaetura vauxi</i>	Breeds
Veery	<i>Catharus fuscescens</i>	Breeds
Vesper Sparrow	<i>Poocetes gramineus</i>	Breeds
Violet-green Swallow	<i>Tachycineta thalassina</i>	Breeds
Virginia Rail	<i>Rallus limicola</i>	Breeds
Warbling Vireo	<i>Vireo gilvus</i>	Breeds
Western Bluebird	<i>Sialia mexicana</i>	Breeds
Western Grebe	<i>Aechmophorus occidentalis</i>	common during migration
Western Kingbird	<i>Tyrannus verticalis</i>	Breeds
Western Meadowlark	<i>Sturnella neglecta</i>	Breeds
Western Sandpiper	<i>Calidris mauri</i>	uncommon during migration
Western Screech-owl	<i>Otus kennicottii</i>	Breeds
Western Scrub-Jay	<i>Aphelocoma californica</i>	Breeds
Western Tanager	<i>Piranga ludoviciana</i>	Breeds

Western Wood-pewee	<i>Contopus sordidulus</i>	Breeds
White-breasted Nuthatch	<i>Sitta carolinensis</i>	Breeds
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	Breeds
White-headed Woodpecker	<i>Picoides albolarvatus</i>	Breeds
White-throated Swift	<i>Aeronautes saxatalis</i>	Breeds
Wild Turkey	<i>Meleagris gallopavo</i>	Breeds
Williamson's Sapsucker	<i>Sphyrapicus thyroideus</i>	Breeds
Willow Flycatcher	<i>Empidonax traillii</i>	Breeds
Wilson's Snipe	<i>Gallinago gallinago</i>	Breeds
Wilson's Warbler	<i>Wilsonia pusilla</i>	common during migration
Winter Wren	<i>Troglodytes troglodytes</i>	Breeds
Wood Duck	<i>Aix sponsa</i>	Breeds
Yellow Warbler	<i>Dendroica petechia</i>	Breeds
Yellow-breasted Chat	<i>Icteria virens</i>	Breeds
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	Breeds
Yellow-rumped Warbler	<i>Dendroica coronata</i>	Breeds
Total Birds: 215		
Mammals		
Virginia Opossum	<i>Didelphis virginiana</i>	Breeds
Masked Shrew	<i>Sorex cinereus</i>	Breeds
Vagrant Shrew	<i>Sorex vagrans</i>	Breeds
Montane Shrew	<i>Sorex monticolus</i>	Breeds
Water Shrew	<i>Sorex palustris</i>	Breeds
Pacific Water Shrew	<i>Sorex bendirii</i>	Breeds
Trowbridge's Shrew	<i>Sorex trowbridgii</i>	Breeds
Merriam's Shrew	<i>Sorex merriami</i>	Breeds
Shrew-mole	<i>Neurotrichus gibbsii</i>	Breeds
Townsend's Mole	<i>Scapanus townsendii</i>	Breeds
Coast Mole	<i>Scapanus orarius</i>	Breeds
California Myotis	<i>Myotis californicus</i>	Breeds
Western Small-footed Myotis	<i>Myotis ciliolabrum</i>	Breeds
Yuma Myotis	<i>Myotis yumanensis</i>	Breeds
Little Brown Myotis	<i>Myotis lucifugus</i>	Breeds

Long-legged Myotis	<i>Myotis volans</i>	Breeds
Fringed Myotis	<i>Myotis thysanodes</i>	Breeds
Long-eared Myotis	<i>Myotis evotis</i>	Breeds
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	Breeds
Western Pipistrelle	<i>Pipistrellus hesperus</i>	Breeds
Big Brown Bat	<i>Eptesicus fuscus</i>	Breeds
Hoary Bat	<i>Lasiurus cinereus</i>	Breeds
Spotted Bat	<i>Euderma maculatum</i>	Breeds
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	Breeds
Pallid Bat	<i>Antrozous pallidus</i>	Breeds
American Pika	<i>Ochotona princeps</i>	Breeds
Pygmy Rabbit	<i>Brachylagus idahoensis</i>	Breeds
Eastern Cottontail	<i>Sylvilagus floridanus</i>	Breeds
Nuttall's (Mountain) Cottontail	<i>Sylvilagus nuttallii</i>	Breeds
Snowshoe Hare	<i>Lepus americanus</i>	Breeds
White-tailed Jackrabbit	<i>Lepus townsendii</i>	Breeds
Black-tailed Jackrabbit	<i>Lepus californicus</i>	Breeds
Mountain Beaver	<i>Aplodontia rufa</i>	Breeds
Least Chipmunk	<i>Tamias minimus</i>	Breeds
Yellow-pine Chipmunk	<i>Tamias amoenus</i>	Breeds
Townsend's Chipmunk	<i>Tamias townsendii</i>	Breeds
Yellow-bellied Marmot	<i>Marmota flaviventris</i>	Breeds
Townsend's Ground Squirrel	<i>Spermophilus townsendii</i>	Breeds
Merriam's Ground Squirrel	<i>Spermophilus canus</i>	Breeds
Piute Ground Squirrel	<i>Spermophilus mollis</i>	Breeds
Washington Ground Squirrel	<i>Spermophilus washingtoni</i>	Breeds
Belding's Ground Squirrel	<i>Spermophilus beldingi</i>	Breeds
Columbian Ground Squirrel	<i>Spermophilus columbianus</i>	Breeds
California Ground Squirrel	<i>Spermophilus beecheyi</i>	Breeds
Golden-mantled Ground Squirrel	<i>Spermophilus lateralis</i>	Breeds
Cascade Golden-mantled Ground Squirrel	<i>Spermophilus saturatus</i>	Breeds
Eastern Gray Squirrel	<i>Sciurus carolinensis</i>	Breeds
Eastern Fox Squirrel	<i>Sciurus niger</i>	Breeds

Western Gray Squirrel	<i>Sciurus griseus</i>	Breeds
Red Squirrel	<i>Tamiasciurus hudsonicus</i>	Breeds
Douglas' Squirrel	<i>Tamiasciurus douglasii</i>	Breeds
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>	Breeds
Northern Pocket Gopher	<i>Thomomys talpoides</i>	Breeds
Western Pocket Gopher	<i>Thomomys mazama</i>	Breeds
Great Basin Pocket Mouse	<i>Perognathus parvus</i>	Breeds
Ord's Kangaroo Rat	<i>Dipodomys ordii</i>	Breeds
American Beaver	<i>Castor canadensis</i>	Breeds
Western Harvest Mouse	<i>Reithrodontomys megalotis</i>	Breeds
Deer Mouse	<i>Peromyscus maniculatus</i>	Breeds
Columbian Mouse	<i>Peromyscus keeni</i>	Breeds
Canyon Mouse	<i>Peromyscus crinitus</i>	Breeds
Pinon Mouse	<i>Peromyscus truei</i>	Breeds
Northern Grasshopper Mouse	<i>Onychomys leucogaster</i>	Breeds
Bushy-tailed Woodrat	<i>Neotoma cinerea</i>	Breeds
Southern Red-backed Vole	<i>Clethrionomys gapperi</i>	Breeds
Western Red-backed Vole	<i>Clethrionomys californicus</i>	Breeds
Heather Vole	<i>Phenacomys intermedius</i>	Breeds
Meadow Vole	<i>Microtus pennsylvanicus</i>	Breeds
Montane Vole	<i>Microtus montanus</i>	Breeds
Gray-tailed Vole	<i>Microtus canicaudus</i>	Breeds
Long-tailed Vole	<i>Microtus longicaudus</i>	Breeds
Creeping Vole	<i>Microtus oregoni</i>	Breeds
Water Vole	<i>Microtus richardsoni</i>	Breeds
Sagebrush Vole	<i>Lemmiscus curtatus</i>	Breeds
Muskrat	<i>Ondatra zibethicus</i>	Breeds
Norway Rat	<i>Rattus norvegicus</i>	Breeds
House Mouse	<i>Mus musculus</i>	Breeds
Western Jumping Mouse	<i>Zapus princeps</i>	Breeds
Pacific Jumping Mouse	<i>Zapus trinotatus</i>	Breeds
Common Porcupine	<i>Erethizon dorsatum</i>	Breeds
Nutria	<i>Myocastor coypus</i>	Breeds

Coyote	<i>Canis latrans</i>	Breeds
Gray Wolf	<i>Canis lupus</i>	Breeds
Red Fox	<i>Vulpes vulpes</i>	Breeds
Gray Fox	<i>Urocyon cinereoargenteus</i>	Breeds
Black Bear	<i>Ursus americanus</i>	Breeds
Grizzly Bear	<i>Ursus arctos</i>	Breeds
Raccoon	<i>Procyon lotor</i>	Breeds
American Marten	<i>Martes americana</i>	Breeds
Fisher	<i>Martes pennanti</i>	Breeds
Ermine	<i>Mustela erminea</i>	Breeds
Long-tailed Weasel	<i>Mustela frenata</i>	Breeds
Mink	<i>Mustela vison</i>	Breeds
Wolverine	<i>Gulo gulo</i>	Breeds
American Badger	<i>Taxidea taxus</i>	Breeds
Western Spotted Skunk	<i>Spilogale gracilis</i>	Breeds
Striped Skunk	<i>Mephitis mephitis</i>	Breeds
Northern River Otter	<i>Lutra canadensis</i>	Breeds
Mountain Lion	<i>Puma concolor</i>	Breeds
Lynx	<i>Lynx canadensis</i>	Breeds
Bobcat	<i>Lynx rufus</i>	Breeds
Feral Pig	<i>Sus scrofa</i>	Breeds
Elk	<i>Cervus elaphus</i>	Breeds
Mule Deer	<i>Odocoileus hemionus</i>	Breeds
White-tailed Deer	<i>Odocoileus virginianus</i>	Breeds
Pronghorn Antelope	<i>Antilocapra americana</i>	Breeds
Mountain Goat	<i>Oreamnos americanus</i>	Breeds
Bighorn Sheep	<i>Ovis canadensis</i>	Breeds
Total Mammals: 108		
Reptiles		
Painted Turtle	<i>Chrysemys picta</i>	Breeds
Western Pond Turtle	<i>Clemmys marmorata</i>	Breeds
Red-eared Slider Turtle	<i>Trachemys scripta</i>	Breeds
Northern Alligator Lizard	<i>Elgaria coerulea</i>	Breeds

Southern Alligator Lizard	<i>Elgaria multicarinata</i>	Breeds
Long-nosed Leopard Lizard	<i>Gambelia wislizenii</i>	Breeds
Short-horned Lizard	<i>Phrynosoma douglassii</i>	Breeds
Desert Horned Lizard	<i>Phrynosoma platyrhinos</i>	Breeds
Sagebrush Lizard	<i>Sceloporus graciosus</i>	Breeds
Western Fence Lizard	<i>Sceloporus occidentalis</i>	Breeds
Side-blotched Lizard	<i>Uta stansburiana</i>	Breeds
Western Skink	<i>Eumeces skiltonianus</i>	Breeds
Rubber Boa	<i>Charina bottae</i>	Breeds
Racer	<i>Coluber constrictor</i>	Breeds
Sharptail Snake	<i>Contia tenuis</i>	Breeds
Ringneck Snake	<i>Diadophis punctatus</i>	Breeds
Night Snake	<i>Hypsiglena torquata</i>	Breeds
California Mountain Kingsnake	<i>Lampropeltis zonata</i>	Breeds
Striped Whipsnake	<i>Masticophis taeniatus</i>	Breeds
Gopher Snake	<i>Pituophis catenifer</i>	Breeds
Western Terrestrial Garter Snake	<i>Thamnophis elegans</i>	Breeds
Northwestern Garter Snake	<i>Thamnophis ordinoides</i>	Breeds
Common Garter Snake	<i>Thamnophis sirtalis</i>	Breeds
Western Rattlesnake	<i>Crotalus viridis</i>	
Total Reptiles: 24		
Total Species: 370		

Table C.2. Federal and state listed species of the Lower Mid-Columbia Mainstem subbasin (WDFW 2003b, ODFW 2004a, ODFW 2004b, USFWS 2004a)

Common Name	Scientific Name	Federal Status	State Status
Amphibians			
Cascade Torrent Salamander	<i>Rhyacotriton cascadae</i>	-	WC, OSV
Cascades Frog	<i>Rana cascadae</i>	-	OSV
Columbia Spotted Frog	<i>Rana luteiventris</i>	-	WC
Larch Mountain Salamander	<i>Plethodon larselli</i>	-	WS, OSV
Northern Leopard Frog	<i>Rana pipiens</i>	-	OSC

Oregon Spotted Frog	<i>Rana pretiosa</i>	FC	WE, OSC
Tailed Frog	<i>Ascaphus truei</i>	-	OSV
Van Dyke's Salamander	<i>Plethodon vandykei</i>	-	WC
Western Toad	<i>Bufo boreas</i>	-	WC, OSV
Woodhouse Toad	<i>Bufo woodhousii</i>	-	OPNR
Total Amphibians: 10			
Birds			
Bald Eagle	<i>Haliaeetus leucocephalus</i>	FT	WT, OT
Black Swift	<i>Cypseloides niger</i>	-	OPNR
Black-backed Woodpecker	<i>Picoides arcticus</i>	-	WC, OSC
Bobolink	<i>Dolichonyx oryzivorus</i>	-	OSV
Burrowing Owl	<i>Athene cunicularia</i>	-	WC, OSC
Canada Goose	<i>Branta canadensis</i>	-	OE
Ferruginous Hawk	<i>Buteo regalis</i>	-	WT, OSC
Flammulated Owl	<i>Otus flammeolus</i>	-	WC, OSC
Golden Eagle	<i>Aquila chrysaetos</i>	-	WC
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	-	OSV
Lewis's Woodpecker	<i>Melanerpes lewis</i>	-	WC, OSC
Loggerhead Shrike	<i>Lanius ludovicianus</i>	-	WC, OSV
Northern Goshawk	<i>Accipiter gentilis</i>	-	WC, OSC
Northern Spotted Owl	<i>Strix occidentalis</i>	FT	WE, OT
Olive-sided Flycatcher	<i>Contopus borealis</i>	-	OSV
Peregrine Falcon	<i>Falco peregrinus</i>	-	OE
Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	WC, OSV
Purple Martin	<i>Progne subis</i>	-	WC, OSC
Sage Grouse	<i>Centrocercus urophasianus</i>	FC	WT, OSV
Sandhill Crane	<i>Grus canadensis</i>	-	WE, OSV
Swainson's Hawk	<i>Buteo swainsoni</i>	-	OSV
Vaux's Swift	<i>Chaetura vauxi</i>	-	WC
Western Grebe	<i>Aechmophorus occidentalis</i>	-	WC
White-headed Woodpecker	<i>Picoides albolarvatus</i>	-	WC, OSC

Total Birds: 24			
Mammals			
American Marten	<i>Martes americana</i>	-	OSV
Black-tailed Jackrabbit	<i>Lepus californicus</i>	-	WC
Fisher	<i>Martes pennanti</i>	-	WE, OSC
Fringed Myotis	<i>Myotis thysanodes</i>	-	OSV
Gray Wolf	<i>Canus Lupus</i>	-	OE
Pallid Bat	<i>Antrozous pallidus</i>	-	OSV
Pygmy Rabbit	<i>Brachylagus idahoensis</i>	-	OSV
Townsend's Ground Squirrel	<i>Spermophilus townsendii</i>	-	WC
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	-	WC, OSC
Washington Ground Squirrel	<i>Spermophilus washingtoni</i>	-	OE
Western Gray Squirrel	<i>Sciurus griseus</i>	-	WT
White-tailed Jackrabbit	<i>Lepus townsendii</i>	-	WC
Wolverine	<i>Gulo gulo</i>	-	WC, OT
Total Mammals: 13			
Reptiles			
California Mountain Kingsnake	<i>Lampropeltis zonata</i>	-	WC, OSV
Desert Horned Lizard	<i>Phrynosoma platyrhinos</i>	-	OSV
Painted Turtle	<i>Chrysemys picta</i>	-	OSC
Sagebrush Lizard	<i>Sceloporus graciosus</i>	-	WC
Sharptail Snake	<i>Contia tenuis</i>	-	WC, OSV
Striped Whipsnake	<i>Masticophis taeniatus</i>	-	WC
Western Pond Turtle	<i>Clemmys marmorata</i>	-	WE, OSC
Total Reptiles: 7			
Total Species: 54			

Table C.2.B. Definitions for federal and state listed species (WDFW 2003b and USFW 2004b)

Federal	
FT (Federally Threatened)	Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
FC (Federal Candidate)	A species for which the U.S. Fish and Wildlife Service has on file sufficient information to support a proposal to list the species as endangered or threatened, but for which proposed rules have not yet been issued.
State	
WE (Washington Endangered)	Any wildlife species native to the state of Washington that is seriously threatened with extinction throughout all or a significant portion of its range within the state.
WT (Washington Threatened)	Any wildlife species native to the state of Washington that is likely to become an endangered species within the foreseeable future throughout a significant portion of its range within the state without cooperative management or removal of threats.
WS (Washington Sensitive)	Any wildlife species native to the state of Washington that is vulnerable or declining and is likely to become endangered or threatened throughout a significant portion of its range within the state without cooperative management or removal of threats.
WC (Washington Candidate)	Include fish and wildlife species that the WDFW will review for possible listing as state endangered, threatened, or sensitive. A species will be considered for designation as a state candidate if sufficient evidence suggests that its status may meet the listing criteria defined for state endangered, threatened, or sensitive.
OE (Oregon Endangered)	Any wildlife species native to the state of Oregon that is seriously threatened with extinction throughout all or a significant portion of its range within the state.
OT (Oregon Threatened)	Any wildlife species native to the state of Oregon that is likely to become an endangered species within the foreseeable future throughout a significant portion of its range within the state without cooperative management or removal of threats.
OSC (Oregon Sensitive-Critical)	Oregon species for which listing as threatened or endangered is pending, or those for which listing as threatened or endangered may be appropriate if immediate conservation actions are not taken.
OSV (Oregon Sensitive-Vulnerable)	Oregon species for which listing as threatened or endangered is not believed to be imminent and can be avoided through continued or expanded use of adequate protective measures and monitoring.
OPNR (Oregon Periperal or Naturally Rare)	Peripheral species refer to those whose Oregon populations are on the edge of their range. Naturally rare species are those which had low population numbers historically in Oregon because of naturally limiting factors. Maintaining the status quo is a minimum necessity.

Table C.3. Wildlife game species of the Lower Mid-Columbia Mainstem subbasin, Washington and Oregon (IBIS 2003)

Common Name	Scientific Name
Amphibians	
Bullfrog	<i>Rana catesbeiana</i>

Total Amphibians: 1	
Birds	
Greater White-fronted Goose	<i>Anser albifrons</i>
Snow Goose	<i>Chen Ccaerulescens</i>
Canada Goose	<i>Branta canadensis</i>
Wood Duck	<i>Aix sponsa</i>
Gadwall	<i>Anas strepera</i>
Eurasian Wigeon	<i>Anas penelope</i>
American Wigeon	<i>Anas americana</i>
Mallard	<i>Anas platyrhynchos</i>
Blue-winged Teal	<i>Anas discors</i>
Cinnamon Teal	<i>Anas cyanoptera</i>
Northern Shoveler	<i>Anas clypeata</i>
Northern Pintail	<i>Anas acuta</i>
Green-winged Teal	<i>Anas crecca</i>
Canvasback	<i>Aythya valisineria</i>
Redhead	<i>Aythya americana</i>
Ring-necked Duck	<i>Aythya collaris</i>
Greater Scaup	<i>Aythya marila</i>
Lesser Scaup	<i>Aythya affinis</i>
Harlequin Duck	<i>Histrionicus histrionicus</i>
Surf Scoter	<i>Melanitta perspicillata</i>
Bufflehead	<i>Bucephala albeola</i>
Common Goldeneye	<i>Bucephala clangula</i>
Barrow's Goldeneye	<i>Bucephala islandica</i>
Hooded Merganser	<i>Lophodytes cucullatus</i>
Common Merganser	<i>Mergus merganser</i>
Red-breasted Merganser	<i>Mergus serrator</i>
Ruddy Duck	<i>Oxyura jamaicensis</i>
Chukar	<i>Alectoris chukar</i>
Gray Partridge	<i>Perdix perdix</i>
Ring-necked Pheasant	<i>Phasianus colchicus</i>

Ruffed Grouse	<i>Bonasa umbellus</i>
White-tailed Ptarmigan	<i>Lagopus leucurus</i>
Blue Grouse	<i>Dendragapus obscurus</i>
Wild Turkey	<i>Meleagris gallopavo</i>
Mountain Quail	<i>Oreortyx pictus</i>
California Quail	<i>Callipepla californica</i>
Northern Bobwhite	<i>Colinus virginianus</i>
American Coot	<i>Fulica americana</i>
Common Snipe	<i>Gallinago gallinago</i>
Band-tailed Pigeon	<i>Columba fasciata</i>
Mourning Dove	<i>Zenaida macroura</i>
Total Birds: 41	
Mammals	
Eastern Cottontail	<i>Sylvilagus floridanus</i>
Nuttall's (Mountain) Cottontail	<i>Sylvilagus nuttallii</i>
Snowshoe Hare	<i>Lepus americanus</i>
White-tailed Jackrabbit	<i>Lepus townsendii</i>
Black-tailed Jackrabbit	<i>Lepus californicus</i>
American Beaver	<i>Castor canadensis</i>
Muskrat	<i>Ondatra zibethicus</i>
Red Fox	<i>Vulpes vulpes</i>
Black Bear	<i>Ursus americanus</i>
Raccoon	<i>Procyon lotor</i>
American Marten	<i>Martes americana</i>
Ermine	<i>Mustela erminea</i>
Long-tailed Weasel	<i>Mustela frenata</i>
Mink	<i>Mustela vison</i>
American Badger	<i>Taxidea taxus</i>
Northern River Otter	<i>Lutra canadensis</i>
Mountain Lion	<i>Puma concolor</i>
Bobcat	<i>Lynx rufus</i>
Rocky Mountain Elk	<i>Cervus elaphus nelsoni</i>

Black-tailed Deer (westside)	<i>Odocoileus hemionus columbianus</i>
Pronghorn Antelope	<i>Antilocapra americana</i>
Mountain Goat	<i>Oreamnos americanus</i>
Bighorn Sheep	<i>Ovis canadensis</i>
Total Mammals: 23	
Total Species: 65	

Table C.4. Partners in Flight species of the Lower Mid-Columbia Mainstem subbasin, Washington (IBIS 2003)

Common Name	Scientific Name	PIF 1998-1999 Continental	PIF Ranking by Super Region Draft 2002	WA PIF Priority & Focal Species
Northern Harrier	<i>Circus cyaneus</i>			Yes
Swainson's Hawk	<i>Buteo swainsoni</i>		MO (Intermountain West, Prairies)	Yes
Ferruginous Hawk	<i>Buteo regalis</i>			Yes
Rough-legged Hawk	<i>Buteo lagopus</i>		PR (Arctic)	
American Kestrel	<i>Falco sparverius</i>			Yes
Gyrfalcon	<i>Falco rusticolus</i>		PR (Arctic)	
Peregrine Falcon	<i>Falco peregrinus</i>		PR (Arctic)	
Sage Grouse	<i>Centrocercus urophasianus</i>		MA (Intermountain West, Prairies)	
White-tailed Ptarmigan	<i>Lagopus leucurus</i>		MO (Arctic)	
Blue Grouse	<i>Dendragapus obscurus</i>		MA (Pacific, Intermountain West)	
Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>		MO (Prairies)	Yes
Mountain Quail	<i>Oreortyx pictus</i>		MO (Pacific)	
Long-billed Curlew	<i>Numenius americanus</i>	Yes		
Stilt Sandpiper	<i>Calidris himantopus</i>	Yes		
Short-billed Dowitcher	<i>Limnodromus griseus</i>	Yes		
Band-tailed Pigeon	<i>Columba fasciata</i>	Yes	MA (Pacific)	Yes
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>			Yes
Flammulated Owl	<i>Otus flammeolus</i>		MO (Pacific, Intermountain West, Southwest)	Yes
Snowy Owl	<i>Nyctea scandiaca</i>		PR (Arctic)	

Northern Pygmy-owl	<i>Glaucidium gnoma</i>		PR (Pacific)	
Burrowing Owl	<i>Athene cunicularia</i>			Yes
Spotted Owl	<i>Strix occidentalis</i>		IM (Pacific, Intermountain West, Southwest)	
Short-eared Owl	<i>Asio flammeus</i>	Yes	MA (Arctic, Northern Forests, Intermountain West, Prairies)	Yes
Common Poorwill	<i>Phalaenoptilus nuttallii</i>			Yes
Black Swift	<i>Cypseloides niger</i>	Yes	IM (Pacific, Intermountain West)	Yes
Vaux's Swift	<i>Chaetura vauxi</i>			Yes
White-throated Swift	<i>Aeronautes saxatalis</i>		MA (Intermountain West, Southwest)	Yes
Calliope Hummingbird	<i>Stellula calliope</i>		MO (Intermountain West)	Yes
Rufous Hummingbird	<i>Selasphorus rufus</i>	Yes	MA (Pacific, Intermountain West)	Yes
Lewis's Woodpecker	<i>Melanerpes lewis</i>	Yes	MO (Intermountain West, Prairies)	Yes
Williamson's Sapsucker	<i>Sphyrapicus thyroideus</i>		MO (Intermountain West)	Yes
Red-naped Sapsucker	<i>Sphyrapicus nuchalis</i>		MO (Intermountain West)	Yes
Red-breasted Sapsucker	<i>Sphyrapicus ruber</i>		MO (Pacific)	Yes
Downy Woodpecker	<i>Picoides pubescens</i>			Yes
White-headed Woodpecker	<i>Picoides albolarvatus</i>	Yes	PR (Pacific, Intermountain West)	Yes
Three-toed Woodpecker	<i>Picoides tridactylus</i>		PR (Northern Forests)	
Black-backed Woodpecker	<i>Picoides arcticus</i>		PR (Northern Forests)	Yes
Northern Flicker	<i>Colaptes auratus</i>			
Pileated Woodpecker	<i>Dryocopus pileatus</i>			Yes
Olive-sided Flycatcher	<i>Contopus cooperi</i>		MA (Pacific, Northern Forests, Intermountain West)	Yes
Western Wood-pewee	<i>Contopus sordidulus</i>			Yes
Willow Flycatcher	<i>Empidonax traillii</i>		MA (Prairies, East)	Yes
Hammond's Flycatcher	<i>Empidonax hammondii</i>			Yes
Gray Flycatcher	<i>Empidonax wrightii</i>		PR (Intermountain West)	Yes
Dusky Flycatcher	<i>Empidonax oberholseri</i>		MA (Intermountain West)	Yes
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>		PR (Pacific)	Yes

Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>			Yes
Loggerhead Shrike	<i>Lanius ludovicianus</i>			Yes
Northern Shrike	<i>Lanius excubitor</i>		PR (Northern Forests)	
Hutton's Vireo	<i>Vireo huttoni</i>			Yes
Warbling Vireo	<i>Vireo gilvus</i>			Yes
Red-eyed Vireo	<i>Vireo olivaceus</i>			Yes
Gray Jay	<i>Perisoreus canadensis</i>		PR (Northern Forests)	
Pinyon Jay	<i>Gymnorhinus cyanocephalus</i>		MA (Intermountain West)	
Clark's Nutcracker	<i>Nucifraga columbiana</i>		PR (Intermountain West)	Yes
Horned Lark	<i>Eremophila alpestris</i>			Yes
Bank Swallow	<i>Riparia riparia</i>			Yes
Chestnut-backed Chickadee	<i>Poecile rufescens</i>		PR (Pacific)	
Bushtit	<i>Psaltriparus minimus</i>			Yes
White-breasted Nuthatch	<i>Sitta carolinensis</i>			Yes
Brown Creeper	<i>Certhia americana</i>			Yes
House Wren	<i>Troglodytes aedon</i>			Yes
Winter Wren	<i>Troglodytes troglodytes</i>			Yes
American Dipper	<i>Cinclus mexicanus</i>			Yes
Western Bluebird	<i>Sialia mexicana</i>			Yes
Mountain Bluebird	<i>Sialia currucoides</i>		PR (Intermountain West)	
Townsend's Solitaire	<i>Myadestes townsendi</i>			Yes
Veery	<i>Catharus fuscescens</i>			Yes
Swainson's Thrush	<i>Catharus ustulatus</i>			Yes
Hermit Thrush	<i>Catharus guttatus</i>			Yes
Varied Thrush	<i>Ixoreus naevius</i>			Yes
Sage Thrasher	<i>Oreoscoptes montanus</i>		PR (Intermountain West)	Yes
American Pipit	<i>Anthus rubescens</i>		PR (Arctic)	Yes
Bohemian Waxwing	<i>Bombycilla garrulus</i>		MA (Northern Forests)	
Orange-crowned Warbler	<i>Vermivora celata</i>			Yes
Nashville Warbler	<i>Vermivora ruficapilla</i>		PR (Northern Forests)	Yes
Yellow Warbler	<i>Dendroica petechia</i>			Yes

Yellow-rumped Warbler	<i>Dendroica coronata</i>			Yes
Black-throated Gray Warbler	<i>Dendroica nigrescens</i>		MO (Pacific)	Yes
Townsend's Warbler	<i>Dendroica townsendi</i>			Yes
Hermit Warbler	<i>Dendroica occidentalis</i>	Yes	MO (Pacific)	Yes
Macgillivray's Warbler	<i>Oporornis tolmiei</i>			Yes
Wilson's Warbler	<i>Wilsonia pusilla</i>			Yes
Yellow-breasted Chat	<i>Icteria virens</i>			Yes
Western Tanager	<i>Piranga ludoviciana</i>			Yes
Green-tailed Towhee	<i>Pipilo chlorurus</i>		MO (Intermountain West)	Yes
Chipping Sparrow	<i>Spizella passerina</i>			Yes
Brewer's Sparrow	<i>Spizella breweri</i>	Yes	MA (Intermountain West)	Yes
Vesper Sparrow	<i>Poocetes gramineus</i>			Yes
Lark Sparrow	<i>Chondestes grammacus</i>			Yes
Black-throated Sparrow	<i>Amphispiza bilineata</i>			Yes
Sage Sparrow	<i>Amphispiza belli</i>	Yes	PR (Intermountain West)	Yes
Grasshopper Sparrow	<i>Ammodramus savannarum</i>		MA (Prairies)	Yes
Fox Sparrow	<i>Passerella iliaca</i>			Yes
Lincoln's Sparrow	<i>Melospiza lincolni</i>		PR (Northern Forests)	Yes
Swamp Sparrow	<i>Melospiza georgiana</i>		PR (Northern Forests)	
White-throated Sparrow	<i>Zonotrichia albicollis</i>		MA (Northern Forests)	
Harris's Sparrow	<i>Zonotrichia querula</i>	Yes	MA (Arctic, Northern Forests)	
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>		PR (Arctic)	
Lapland Longspur	<i>Calcarius lapponicus</i>		PR (Arctic)	
Snow Bunting	<i>Plectrophenax nivalis</i>		PR (Arctic)	
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>			Yes
Bobolink	<i>Dolichonyx oryzivorus</i>	Yes		
Tricolored Blackbird	<i>Agelaius tricolor</i>		MO (Pacific)	
Western Meadowlark	<i>Sturnella neglecta</i>			Yes
Bullock's Oriole	<i>Icterus bullockii</i>			Yes
Pine Grosbeak	<i>Pinicola enucleator</i>		MO (Northern Forests)	
Purple Finch	<i>Carpodacus purpureus</i>			Yes
Cassin's Finch	<i>Carpodacus cassinii</i>		MA (Intermountain West)	

Red Crossbill	<i>Loxia curvirostra</i>		Yes
Lesser Goldfinch	<i>Carduelis psaltria</i>		Yes
Total Birds: 111			

Table C.5. Wildlife species in the Lower Mid-Columbia Mainstem subbasin used in the Habitat Evaluation Procedure (HEP) to assess habitat losses associated with federal hydroelectric facilities on the Lower Snake and Columbia Rivers (IBIS 2003)

Common Name	Scientific Name	Comments
Birds		
Bald eagle	<i>Haliaeetus leucocephalus</i>	Use at Grand Coulie/Chief Joe
Black-capped chickadee	<i>Parus atricapillus</i>	HEP Species used in the loss assessments for the lower four Columbia River Dam with existing models.
Blue grouse	<i>Dendragapus obscurus</i>	Use by CTUIR for McNary/John Day and at other selected sites.
California quail	<i>Lophortyx californicus</i>	HEP Species used in the loss assessments for the lower four Columbia River Dam with existing models.
Canada goose	<i>Branta Canadensis</i>	HEP Species used in the loss assessments for the lower four Columbia River Dam with existing models.
Downy woodpecker	<i>Picoides pueescens</i>	HEP Species used in the loss assessments for the lower four Columbia River Dam with existing models.
Great blue heron	<i>Ardea herodias</i>	HEP Species used in the loss assessments for the lower four Columbia River Dam with existing models.
Greater Sage Grouse	<i>Centrocercus urophasianus</i>	Use at Grand Coulie/Chief Joe
Lesser scaup	<i>Aythya affinis</i>	HEP Species used in the loss assessments for the lower four Columbia River Dam with existing models.
Lewis woodpecker	<i>Melanerpes lewis</i>	Use at Grand Coulie/Chief Joe
Long-eared owl	<i>Asio otus</i>	Use at Grand Coulie/Chief Joe
Mallard	<i>Anas platyrhynchos</i>	HEP Species used in the loss assessments for the lower four Columbia River Dam with existing models.
Mourning Dove	<i>Zenaida macroura</i>	Use at Grand Coulie/Chief Joe
Northern Flicker	<i>Colaptes auratus</i>	Use at Grand Coulie/Chief Joe
Ring-necked pheasant	<i>Phasianus colchicus</i>	Use at Grand Coulie/Chief Joe
Ruffed grouse	<i>Bonasa umbellus</i>	Use at Grand Coulie/Chief Joe
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>	Use at Grand Coulie/Chief Joe- Model in progress
Spotted sandpiper	<i>Actitis macularia</i>	HEP Species used in the loss assessments for the lower four Columbia River Dam with existing models.

Western meadow lark	<i>Sturnella neglecta</i>	HEP Species used in the loss assessments for the lower four Columbia River Dam with existing models.
Yellow warbler	<i>Dendroica petechia</i>	HEP Species used in the loss assessments for the lower four Columbia River Dam with existing models.
Total Birds: 20		
Mammals		
American Beaver	<i>Castor canadensis</i>	Use at Grand Coulie/Chief Joe
Mink	<i>Mustella vison</i>	HEP Species used in the loss assessments for the lower four Columbia River Dam with existing models.
Bobcat	<i>Lynx rufus</i>	Use at Grand Coulie/Chief Joe
Northern River Otter	<i>Lutra Canadensis</i>	Use for Minidoka Dam
White-tailed deer	<i>Odocoileus virginianus</i>	Use at Grand Coulie/Chief Joe
Mule deer	<i>Dendragapus obscurus</i>	Use by CTUIR for McNary/John Day and at other selected sites.
Total Mammals: 6		
Total Species: 26		

* CTUIR - Confederated Tribes of the Umatilla Indian Reservation

Table C.6.A. Wildlife species in the Lower Mid-Columbia Mainstem subbasin that eat salmonids (IBIS 2003). See table C.6.B,h.s. for definitions of relationship types, and table C.6.C,h.s. for definitions of salmonid stages

Common Name	Scientific Name	Relationship Type	Salmonid Stage
Amphibians			
Cope's Giant Salamander	<i>Dicamptodon copei</i>	Recurrent	Freshwater rearing - fry, fingerling, and parr
			Incubation - eggs and alevin
Pacific Giant Salamander	<i>Dicamptodon tenebrosus</i>	Recurrent	Incubation - eggs and alevin
			Freshwater rearing - fry, fingerling, and parr
Total Amphibians: 2			
Birds			
Pied-billed Grebe	<i>Podilymbus podiceps</i>	Recurrent	Freshwater rearing - fry, fingerling, and parr
Western Grebe	<i>Aechmophorus occidentalis</i>	Recurrent	Freshwater rearing - fry, fingerling, and parr

			Saltwater - smolts, immature adults, and adults
		Rare	Carcasses
Red-necked Grebe	<i>Podiceps grisegena</i>	Rare	Saltwater - smolts, immature adults, and adults
			Carcasses
Clark's Grebe	<i>Aechmophorus clarkii</i>	Recurrent	Saltwater - smolts, immature adults, and adults
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	Recurrent	Freshwater rearing - fry, fingerling, and parr
			Saltwater - smolts, immature adults, and adults
Great Blue Heron	<i>Ardea herodias</i>	Recurrent	Freshwater rearing - fry, fingerling, and parr
			Saltwater - smolts, immature adults, and adults
Green Heron	<i>Butorides virescens</i>	Rare	Freshwater rearing - fry, fingerling, and parr
		Recurrent	Saltwater - smolts, immature adults, and adults
Black-crowned Night-heron	<i>Nycticorax nycticorax</i>	Recurrent	Saltwater - smolts, immature adults, and adults
			Freshwater rearing - fry, fingerling, and parr
Great Egret	<i>Ardea alba</i>	Rare	Freshwater rearing - fry, fingerling, and parr
			Saltwater - smolts, immature adults, and adults
Turkey Vulture	<i>Cathartes aura</i>	Recurrent	Carcasses
Mallard	<i>Anas platyrhynchos</i>	Rare	Incubation - eggs and alevin
			Carcasses
Canvasback	<i>Aythya valisineria</i>	Rare	Carcasses
Surf Scoter	<i>Melanitta perspicillata</i>	Rare	Carcasses
			Saltwater - smolts, immature adults, and adults
Green-winged Teal	<i>Anas crecca</i>	Rare	Incubation - eggs and alevin
Greater Scaup	<i>Aythya marila</i>	Rare	Incubation - eggs and alevin
			Carcasses

Harlequin Duck	<i>Histrionicus histrionicus</i>	Strong, consistent	Saltwater - smolts, immature adults, and adults
			Incubation - eggs and alevin
		Indirect	Carcasses
Barrow's Goldeneye	<i>Bucephala islandica</i>	Recurrent	Incubation - eggs and alevin
			Freshwater rearing - fry, fingerling, and parr
		Carcasses	
		Rare	Saltwater - smolts, immature adults, and adults
Common Goldeneye	<i>Bucephala clangula</i>	Recurrent	Freshwater rearing - fry, fingerling, and parr
			Incubation - eggs and alevin
		Carcasses	
		Rare	Saltwater - smolts, immature adults, and adults
Red-breasted Merganser	<i>Mergus serrator</i>	Recurrent	Incubation - eggs and alevin
			Freshwater rearing - fry, fingerling, and parr
			Saltwater - smolts, immature adults, and adults
Hooded Merganser	<i>Lophodytes cucullatus</i>	Rare	Carcasses
			Freshwater rearing - fry, fingerling, and parr
			Incubation - eggs and alevin
Common Merganser	<i>Mergus merganser</i>	Strong, consistent	Freshwater rearing - fry, fingerling, and parr
			Saltwater - smolts, immature adults, and adults
		Incubation - eggs and alevin	
		Recurrent	Carcasses
Osprey	<i>Pandion haliaetus</i>	Strong, consistent	Freshwater rearing - fry, fingerling, and parr
			Saltwater - smolts, immature adults, and adults
			Spawning - freshwater
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Indirect	Freshwater rearing - fry, fingerling, and parr

			Incubation - eggs and alevin
			Saltwater - smolts, immature adults, and adults
			Carcasses
		Strong, consistent	Spawning - freshwater
			Saltwater - smolts, immature adults, and adults
			Carcasses
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Rare	Carcasses
Golden Eagle	<i>Aquila chrysaetos</i>	Recurrent	Spawning - freshwater
			Carcasses
Gyrfalcon	<i>Falco rusticolus</i>	Indirect	Freshwater rearing - fry, fingerling, and parr
			Carcasses
			Saltwater - smolts, immature adults, and adults
Peregrine Falcon	<i>Falco peregrinus</i>	Indirect	Saltwater - smolts, immature adults, and adults
			Carcasses
			Freshwater rearing - fry, fingerling, and parr
Snowy Owl	<i>Nyctea scandiaca</i>	Indirect	Freshwater rearing - fry, fingerling, and parr
Killdeer	<i>Charadrius vociferus</i>	Indirect	Carcasses
Greater Yellowlegs	<i>Tringa melanoleuca</i>	Rare	Incubation - eggs and alevin
Spotted Sandpiper	<i>Actitis macularia</i>	Indirect	Carcasses
Ring-billed Gull	<i>Larus delawarensis</i>	Recurrent	Carcasses
			Freshwater rearing - fry, fingerling, and parr
			Saltwater - smolts, immature adults, and adults
California Gull	<i>Larus californicus</i>	Recurrent	Saltwater - smolts, immature adults, and adults
			Carcasses
Herring Gull	<i>Larus argentatus</i>	Recurrent	Saltwater - smolts, immature adults, and adults
			Carcasses

			Freshwater rearing - fry, fingerling, and parr
Bonaparte's Gull	<i>Larus philadelphia</i>	Recurrent	Incubation - eggs and alevin
			Saltwater - smolts, immature adults, and adults
			Carcasses
Mew Gull	<i>Larus canus</i>	Rare	Incubation - eggs and alevin
Western Gull	<i>Larus occidentalis</i>	Recurrent	Carcasses
			Saltwater - smolts, immature adults, and adults
Glaucous-winged Gull	<i>Larus glaucescens</i>	Recurrent	Spawning - freshwater
			Saltwater - smolts, immature adults, and adults
			Incubation - eggs and alevin
			Carcasses
Thayer's Gull	<i>Larus thayeri</i>	Recurrent	Saltwater - smolts, immature adults, and adults
Glaucous Gull	<i>Larus hyperboreus</i>	Recurrent	Carcasses
			Saltwater - smolts, immature adults, and adults
Caspian Tern	<i>Sterna caspia</i>	Strong, consistent	Freshwater rearing - fry, fingerling, and parr
			Saltwater - smolts, immature adults, and adults
Forster's Tern	<i>Sterna forsteri</i>	Recurrent	Freshwater rearing - fry, fingerling, and parr
			Saltwater - smolts, immature adults, and adults
Belted Kingfisher	<i>Ceryle alcyon</i>	Recurrent	Spawning - freshwater
			Saltwater - smolts, immature adults, and adults
			Freshwater rearing - fry, fingerling, and parr
Willow Flycatcher	<i>Empidonax traillii</i>	Indirect	Carcasses
Gray Jay	<i>Perisoreus canadensis</i>	Rare	Carcasses
Steller's Jay	<i>Cyanocitta stelleri</i>	Recurrent	Carcasses
Black-billed Magpie	<i>Pica pica</i>	Recurrent	Freshwater rearing - fry, fingerling, and parr

			Carcasses
American Crow	<i>Corvus brachyrhynchos</i>	Recurrent	Freshwater rearing - fry, fingerling, and parr
			Carcasses
Northwestern Crow	<i>Corvus caurinus</i>	Recurrent	Freshwater rearing - fry, fingerling, and parr
			Saltwater - smolts, immature adults, and adults
			Carcasses
Common Raven	<i>Corvus corax</i>	Recurrent	Freshwater rearing - fry, fingerling, and parr
			Carcasses
			Spawning - freshwater
Tree Swallow	<i>Tachycineta bicolor</i>	Indirect	Carcasses
Violet-green Swallow	<i>Tachycineta thalassina</i>	Indirect	Carcasses
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	Indirect	Carcasses
Bank Swallow	<i>Riparia riparia</i>	Indirect	Carcasses
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	Indirect	Carcasses
Barn Swallow	<i>Hirundo rustica</i>	Indirect	Carcasses
Winter Wren	<i>Troglodytes troglodytes</i>	Rare	Carcasses
American Dipper	<i>Cinclus mexicanus</i>	Recurrent	Freshwater rearing - fry, fingerling, and parr
			Incubation - eggs and alevin
		Indirect	Carcasses
American Robin	<i>Turdus migratorius</i>	Rare	Incubation - eggs and alevin
Varied Thrush	<i>Ixoreus naevius</i>	Rare	Carcasses
			Incubation - eggs and alevin
Spotted Towhee	<i>Pipilo maculatus</i>	Rare	Carcasses
Song Sparrow	<i>Melospiza melodia</i>	Rare	Carcasses
Total Birds: 62			
Mammals			
Virginia Opossum	<i>Didelphis virginiana</i>	Recurrent	Carcasses
Masked Shrew	<i>Sorex cinereus</i>	Indirect	Carcasses

		Rare	Carcasses
Vagrant Shrew	<i>Sorex vagrans</i>	Rare	Carcasses
		Indirect	Carcasses
Montane Shrew	<i>Sorex monticolus</i>	Indirect	Carcasses
		Rare	Carcasses
Water Shrew	<i>Sorex palustris</i>	Recurrent	Carcasses
			Freshwater rearing - fry, fingerling, and parr
			Incubation - eggs and alevin
		Indirect	Carcasses
Pacific Water Shrew	<i>Sorex bendirii</i>	Rare	Carcasses
		Indirect	Carcasses
Trowbridge's Shrew	<i>Sorex trowbridgii</i>	Rare	Carcasses
		Indirect	Carcasses
Douglas' Squirrel	<i>Tamiasciurus douglasii</i>	Rare	Carcasses
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>	Rare	Carcasses
Deer Mouse	<i>Peromyscus maniculatus</i>	Rare	Carcasses
Coyote	<i>Canis latrans</i>	Recurrent	Carcasses
Red Fox	<i>Vulpes vulpes</i>	Rare	Carcasses
Gray Fox	<i>Urocyon cinereoargenteus</i>	Rare	Carcasses
Black Bear	<i>Ursus americanus</i>	Strong, consistent	Carcasses
			Spawning - freshwater
Raccoon	<i>Procyon lotor</i>	Recurrent	Freshwater rearing - fry, fingerling, and parr
			Carcasses
American Marten	<i>Martes americana</i>	Rare	Carcasses
Fisher	<i>Martes pennanti</i>	Rare	Carcasses
Long-tailed Weasel	<i>Mustela frenata</i>	Rare	Carcasses
Mink	<i>Mustela vison</i>	Recurrent	Spawning - freshwater
			Carcasses
			Freshwater rearing - fry, fingerling, and parr
Wolverine	<i>Gulo gulo</i>	Rare	Carcasses
Striped Skunk	<i>Mephitis mephitis</i>	Rare	Carcasses

Northern River Otter	<i>Lutra canadensis</i>	Strong, consistent	Freshwater rearing - fry, fingerling, and parr
			Spawning - freshwater
			Carcasses
Mountain Lion	<i>Puma concolor</i>	Rare	Spawning - freshwater
Bobcat	<i>Lynx rufus</i>	Recurrent	Spawning - freshwater
			Carcasses
Total Mammals: 24			
Reptiles			
Western Pond Turtle	<i>Clemmys marmorata</i>	Rare	Carcasses
			Freshwater rearing - fry, fingerling, and parr
Western Terrestrial Garter Snake	<i>Thamnophis elegans</i>	Rare	Freshwater rearing - fry, fingerling, and parr
Common Garter Snake	<i>Thamnophis sirtalis</i>	Rare	Freshwater rearing - fry, fingerling, and parr
Total Reptiles: 3			
Total Species: 91			

Table C.6.B. Definitions of Salmon-Wildlife Relationships (Johnson and O'Neil 2001)

Strong, Consistent Relationship
<p>Salmon play (or historically played) an important role in this species distribution, viability, abundance, and/or population status. The ecology of this wildlife species is supported by salmon, especially at particular life stages or during specific seasons. Timing of reproductive activities, and daily or seasonal movements often reflect salmon life stages. Relationship with salmon is direct (e.g., feeds on salmon, or salmon eggs) and routine. The relationship may be regional or localized to one or more watersheds. Examples: A significant portion of the diet of killer whales is adult salmon (Saltwater stage); common mergansers may congregate to feed on salmon fry (Freshwater Rearing stage) when they are available.</p>
Recurrent Relationship
<p>The relationship between salmon and this species is characterized as routine, albeit occasional, and often tends to be in localized areas (thus affecting only a small portion of this species population). While the species may benefit from this relationship, it is generally not considered to affect the distribution, abundance, viability, or population status of this species. The percent of salmon in the diet of these wildlife species may vary from 5% to over 50%, depending on the location and time of year. Example: turkey vultures routinely feed on salmon carcasses, but feed on many other items as well.</p>

Indirect Relationship
Salmon play an important routine, but indirect link to this species. The relationship could be viewed as one of a secondary consumer of salmon; for example, salmon support other wildlife that are prey of this species. This includes aspects such as salmon carcasses that support insect populations that are a food item for this species. Example: American dipper feed on aquatic insects that are affected by salmon-derived nutrients. The hypothesis of an indirect relationship between an aerial insectivore and salmon was supported by the presence of two or more of the following characteristics of the insectivore: (1) riparian obligate or associate, (2) feeds below or near the canopy layer of riparian trees, (3) known or perceived to feed on midges, blackflies, caddisflies, stoneflies, or other aquatic insects that benefit from salmon-derived nutrients, and/or (4) feeds near the water surface. While this category includes general aspects of salmon nutrient cycling in stream/river systems, we are not including or examining the role of carcass-derived nutrient cycling on lentic system riparian and wetlands vegetation, and subsequent links to wildlife.
Rare Relationship
Salmon play a very minor role in the diet of these species, often amounting to less than 1 percent of the diet. Typically, salmon are consumed only on rare occasions, during a shortage of the usual food and may be especially evident during El Niño events. As salmon are often present in large quantities, they may be consumed on rare occasions by species that normally do not consume them. Examples: red-tailed hawks are known to consume salmon carcasses in times of distress; trumpeter swans are primarily vegetarians, but on rare occasions will consume eggs, parr, as well as salmon carcass tissue.

Table C.6.C. Salmon Life Stages and Definitions (Johnson and O’Neil 2001)

Alevin	Larval salmonid that has hatched but has not yet emerged from the spawning gravel.
Parr	Young salmonid in the stage between alevin and smolt that has developed distinctive dark "parr marks" on its sides and is actively feeding in fresh water.
Fingerling	Young fish, usually in its first or second year and generally between 2 and 25 cm long.
Fry	Life stage of trout or salmon between full absorption of the yolk sac and fingerling or parr stage, which generally is reached by the end of the first summer.
Smolt	Juvenile salmonid one or more years old that has undergone physiological changes to cope with a marine environment; the seaward migrant stage of an anadromous salmonid.
Spawner	Sexually mature salmonid migrating to or at its natal spawning grounds.
Carcass	The dead bodies of the salmonid.
Egg	One of the female reproductive cells consisting of an embryo surrounded by nutrient material and protective covering.

Table C.7. Priority Habitat Species (PHS) known to occur in Lower Mid-Columbia Mainstem subbasin, presence based on IBIS data (WDFW 2003c)

Common Name	Scientific Name
Amphibians	
Columbia spotted frog	<i>Rana pretios</i>
Oregon spotted frog	<i>Rana pretiosa</i>
Western toad	<i>Bufo boreas</i>
Dunn's salamander	<i>Plethodon dunni</i>
Larch Mountain salamander	<i>Plethodon larselli</i>

Van Dyke's salamander	<i>Plethodon vandykei</i>
Birds	
American white pelican	<i>Pelecanus erythrorhynchos</i>
Common loon	<i>Gavia immer</i>
Western Grebe	<i>Aechmophorus occidentalis</i>
Black-crowned night heron	<i>Nycticorax nycticorax</i>
Great blue heron	<i>Ardea herodias</i>
Aleutian Canada goose	<i>Branta canadensis leucopareia</i>
Wood duck	<i>Aix sponsa</i>
Barrow's goldeneye	<i>Bucephala islandica</i>
Common goldeneye	<i>Bucephala clangula</i>
Bufflehead	<i>Bucephala albeola</i>
Hooded merganser	<i>Lophodytes cucullatus</i>
Bald eagle	<i>Haliaeetus leucocephalus</i>
Ferruginous hawk	<i>Buteo regalis</i>
Golden eagle	<i>Aquila chrysaetos</i>
Merlin	<i>Falco columbarius</i>
Northern goshawk	<i>Accipiter gentilis</i>
Peregrine falcon	<i>Falco peregrinus</i>
Prairie falcon	<i>Falco mexicanus</i>
Blue grouse	<i>Dendragapus obscurus</i>
Chukar	<i>Alectoris chukar</i>
Mountain quail	<i>Oreortyx pictus</i>
Ring-necked pheasant	<i>Phasianus colchicus</i>
Sage grouse	<i>Centrocercus urophasianus</i>
Wild turkey	<i>Meleagris gallopavo</i>
Sandhill crane	<i>Grus canadensis</i>
Upland sandpiper	<i>Bartramia longicauda</i>
Band-tailed pigeon	<i>Columba fasciata</i>
Yellow-billed cuckoo	<i>Coccyzus americanus</i>
Burrowing owl	<i>Athene cunicularia</i>
Flammulated owl	<i>Otus flammeolus</i>

Spotted owl	<i>Strix occidentalis</i>
Vaux's swift	<i>Chaetura vauxi</i>
Black-backed woodpecker	<i>Picoides arcticus</i>
Lewis' woodpecker	<i>Melanerpes lewis</i>
Pileated woodpecker	<i>Dryocopus pileatus</i>
White-headed woodpecker	<i>Picoides albolarvatus</i>
Loggerhead shrike	<i>Lanius ludovicianus</i>
Oregon vesper sparrow (?)	<i>Pooecetes gramineus affinis</i>
Sage sparrow	<i>Amphispiza belli</i>
Sage thrasher	<i>Oreoscoptes montanus</i>
Slender-billed, white-breasted nuthatch (?)	<i>Sitta carolinensis aculeata</i>
Streaked, horned lark (?)	<i>Eremophila alpestris strigata</i>
Birds (Other)	
Eastern Washington breeding concentrations of:	
Grebes (Podicipedidae)	
Cormorants (Phalacrocoracidae)	
Eastern Washington breeding:	
Terns (Laridae)	
Waterfowl concentrations:	
(Anatidae excluding Canada geese in urban areas)	
Eastern Washington breeding occurrences of:	
Phalaropes (Phalaropodidae)	
Stilts and avocets (Recurvirostridae)	
Mammals	
Merriam's shrew	<i>Sorex merriami</i>
Big brown bat	<i>Eptesicus fuscus</i>
Myotis bats	<i>Myotis</i> spp., all
Pallid bat	<i>Antrozous pallidus</i>
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>
Black-tailed jackrabbit	<i>Lepus californicus</i>
White-tailed jack rabbit	<i>Lepus townsendii</i>
Gray-tailed vole	<i>Microtus canicaudus</i>

Townsend's ground squirrel	<i>Spermophilus townsendii townsendii</i>
Washington ground squirrel	<i>Spermophilus washingtoni</i>
Western gray squirrel	<i>Sciurus griseus</i>
Western pocket gopher	<i>Thomomys mazama</i>
Fisher	<i>Martes pennanti</i>
Gray wolf	<i>Canis lupus</i>
Grizzly bear	<i>Ursus arctos</i>
Lynx	<i>Lynx canadensis</i>
American Marten	<i>Martes americana</i>
Mink	<i>Mustela vison</i>
Wolverine	<i>Gulo gulo</i>
Bighorn sheep	<i>Ovis canadensis</i>
Columbian black-tailed deer	<i>Odocoileus hemionus columbianus</i>
Columbian white-tailed deer	<i>Odocoileus virginianus leucurus</i>
Mountain goat	<i>Oreamnos americanus</i>
Rocky Mountain elk	<i>Cervus elaphus nelsoni</i>
Rocky Mountain mule deer	<i>Odocoileus hemionus hemionus</i>
Reptiles	
Sagebrush lizard	<i>Sceloporus graciosus</i>
Sharptail snake	<i>Contia tenuis</i>
Striped whipsnake	<i>Masticophis taeniatus</i>
Western pond turtle	<i>Clemmys marmorata</i>

Table C.8. Fish species reported from the Columbia River between Wanapum and the Dalles dams. Tolerance refers to physiological resistance to organic pollution, warm water, sedimentation, and low dissolved oxygen (Zaroban et al. 1999). Status refers to listing as threatened or endangered: FE = federal endangered, FT = federal threatened, FSC = federal species of concern, OT = Oregon threatened, WC = Washington candidate

Family, species	Origin	Tolerance	Status
Petromyzontidae			
Western brook lamprey <i>Lampetra richardsoni</i>	Native	Intermediate	--
River lamprey <i>L. ayresi</i>	Native	Intermediate	FSC
Pacific lamprey <i>L. tridentata</i>	Native	Intermediate	FSC

Family, species	Origin	Tolerance	Status
Acipenseridae			
White sturgeon <i>Acipenser transmontanus</i>	Native	Intermediate	--
Clupeidae			
American shad <i>Alosa sapidissima</i>	Exotic	Intermediate	--
Salmonidae			
Rainbow trout/steelhead <i>Oncorhynchus mykiss</i>	Native	Sensitive	FE, FT ^a , WC
Cutthroat trout <i>O. clarki</i>	Native	Sensitive	--
Chinook salmon <i>O. tshawytscha</i>	Native	Sensitive	FE, FT ^b , OT, WC
Coho salmon <i>O. kisutch</i>	Native	Sensitive	--
Sockeye salmon <i>O. nerka</i>	Native	Sensitive	FE ^c , WC
Bull trout <i>Salvelinus confluentus</i>	Native	Sensitive	FT, WC
Brown trout <i>Salmo trutta</i>	Exotic	Intermediate	--
Mountain whitefish <i>Prosopium williamsoni</i>	Native	Intermediate	--
Lake whitefish <i>Coregonus clupeaformis</i>	Exotic	Intermediate	--
Cyprinidae			
Carp <i>Cyprinus carpio</i>	Exotic	Tolerant	--
Grass carp <i>Ctenopharyngodon idella</i>	Exotic	Tolerant	--
Goldfish <i>Carrassius auratus</i>	Exotic	Tolerant	--
Chiselmouth <i>Acrocheilus alutaceus</i>	Native	Intermediate	--
Redside shiner <i>Richardsonius balteatus</i>	Native	Intermediate	--
Northern pikeminnow <i>Ptychocheilus oregonensis</i>	Native	Intermediate	--
Pearmouth <i>Mylocheilus caurinus</i>	Native	Intermediate	--
Longnose dace <i>Rhinichthys cataractae</i>	Native	Intermediate	--
Leopard dace <i>R. falcatus</i>	Native	Intermediate	WC
Speckled dace <i>R. osculus</i>	Native	Intermediate	--
Tench <i>Tinca tinca</i>	Exotic	Intermediate	--
Catostomidae			
Largescale sucker <i>Catostomus macrocheilus</i>	Native	Tolerant	--
Bridgelip sucker <i>C. columbianus</i>	Native	Tolerant	--
Mountain sucker <i>C. platyrhynchus</i>	Native	Intermediate	WC
Longnose sucker <i>C. catostomus</i>	Native	Intermediate	--
Ictaluridae			
Channel catfish <i>Ictalurus punctatus</i>	Exotic	Tolerant	--
Black bullhead <i>Ameiurus melas</i>	Exotic	Tolerant	--
Brown bullhead <i>A. nebulosus</i>	Exotic	Tolerant	--
Yellow bullhead <i>A. natalis</i>	Exotic	Tolerant	--
Poeciliidae			
Mosquitofish <i>Gambusia affinis</i>	Exotic	Tolerant	--
Gadidae			

Family, species	Origin	Tolerance	Status
Burbot <i>Lota lota</i>	Native	Intermediate	--
Gasterosteidae			
Three-spine stickleback <i>Gasterosteus aculeatus</i>	Native	Tolerant	--
Percopsidae			
Sandroller <i>Percopsis transmontana</i>	Native	Intermediate	--
Centrarchidae			
Largemouth bass <i>Micropterus salmoides</i>	Exotic	Tolerant	--
Smallmouth bass <i>M. dolomieu</i>	Exotic	Intermediate	--
Black crappie <i>Pomoxis nigromaculatus</i>	Exotic	Tolerant	--
White crappie <i>P. annularis</i>	Exotic	Tolerant	--
Warmouth <i>Lepomis gulosus</i>	Exotic	Tolerant	--
Bluegill <i>L. macrochirus</i>	Exotic	Tolerant	--
Pumpkinseed <i>L. gibbosus</i>	Exotic	Tolerant	--
Percidae			
Walleye <i>Stizostedion vitreum</i>	Exotic	Intermediate	--
Yellow perch <i>Perca flavescens</i>	Exotic	Intermediate	--
Cottidae			
Paiute sculpin <i>Cottus beldingi</i>	Native	Intermediate	--
Torrent sculpin <i>C. rhotheus</i>	Native	Intermediate	--
Prickly sculpin <i>C. asper</i>	Native	Intermediate	--
Reticulate sculpin <i>C. perplexus</i>	Native	Intermediate	--
Mottled sculpin <i>C. bairdi</i>	Native	Intermediate	--

^a Middle Columbia River and Snake Basin Steelhead ESUs listed as threatened; Upper Columbia River ESU listed as endangered.

^b Snake River Chinook Salmon ESUs listed as threatened; Upper Columbia River Spring-run ESU listed as endangered.

^c Only the Snake River ESU is federally listed (endangered)

Appendix D

Appendix D.: Rare Plants and Plant Communities of the Lower Mid-Columbia Mainstem Subbasin.

Table D.1.A. Rare, endangered, and threatened plants in Klickitat County, WA., and Sherman and Gilliam counties, OR. (Washington Natural Heritage Program 2003, Oregon Natural Heritage Program 2004). Definitions of status are in table D.2.B

COMMON NAME	SCIENTIFIC NAME	COUNTY	State Status	Federal Status
Henderson ricegrass	<i>Achnatherum hendersonii</i>	S	C	SOC
Tall agoseris	<i>Agoseris elata</i>	K	S	
Robinson's onion	<i>Allium robinsonii</i>	G, S		SOC
Grand redstem	<i>Ammannia robusta</i>	K, S	T	
Northern wormwood	<i>Artemisia campestris ssp borealis var wormskioldii</i>	K, S	E	C
Palouse milk-vetch	<i>Astragalus arrectus</i>	K	S	
Laurence's milk-vetch	<i>Astragalus collinus var. laurentii</i>	G, S	T	SOC
Pauper milk-vetch	<i>Astragalus misellus var pauper</i>	K	S	
Ames' milk-vetch	<i>Astragalus pulsiferae var suksdorfii</i>	K	E	
Long-leaved milk-vetch	<i>Astragalus reventiformis</i>	S		
Stalked-pod milk-vetch	<i>Astragalus sclerocarpus</i>	G, S?		
Columbia milk-vetch	<i>Astragalus succumbens</i>	G,		
Bolandra	<i>Bolandra oregana</i>	K	S	
Long-bearded sego lily	<i>Calochortus longebarbatus var longebarbatus</i>	K	S	
Dwarf evening-primrose	<i>Camissonia pygmaea</i>	G	C	SOC
Porcupine sedge	<i>Carex hystericina</i>	G		
Nevius' chaenactis	<i>Chaenactis nevii</i>	G		
Few-flowered collinsia	<i>Collinsia sparsiflora var bruceae</i>	K	S	
Cushion coryphantha	<i>Coryphantha vivipara var. vivipara</i>	S		
Gray cryptantha	<i>Cryptantha leucophaea</i>	G		
Beaked cryptantha	<i>Cryptantha rostellata</i>	K	T	
Snake river cryptantha	<i>Cryptantha spiculifera</i>	K	S	
Douglas' draba	<i>Cusickiella douglasii</i>	K	T	

Shining flatsedge	<i>Cyperus bipartitus</i>	K	S	
Clustered lady's-slipper	<i>Cypripedium fasciculatum</i>	K	S	
Fringed waterplantain	<i>Damasonium californicum</i>	K	T	
Piper's daisy	<i>Erigeron piperianus</i>	K	S	
Oregon coyote-thistle	<i>Eryngium petiolatum</i>	K	T	
Common blue-cup	<i>Githopsis specularioides</i>	K	S	
Diffuse stickseed	<i>Hackelia diffusa var diffusa</i>	K	T	
Creamy stickseed	<i>Hackelia diffusa var. cottonii</i>	G, S		
Salt heliotrope	<i>Heliotropium curassavicum</i>	S		
Gooseberry-leaved alumroot	<i>Heuchera grossulariifolia var tenuifolia</i>	K	S	
Nuttall's quillwort	<i>Isoetes nuttallii</i>	K	S	
Dwarf rush	<i>Juncus hemiendytus var hemiendytus</i>	K	T	
Kellogg's rush	<i>Juncus kelloggii</i>	K	E	
Columbia bladderpod	<i>Lesquerella douglasii</i>	G,S		
Flowering quillwort	<i>Lilaea scilloides</i>	S		
Baker's linanthus	<i>Linanthus bolanderi</i>	K	S	
Twayblade	<i>Liparis loeselii</i>	K	E	
Awned halfchaff sedge	<i>Lipocarpa aristulata</i>	K	T	
Smooth desert-parsley	<i>Lomatium laevigatum</i>	K, S	T	
Suksdorf's desert-parsley	<i>Lomatium suksdorfii</i>	K	S	
Watson's desert-parsley	<i>Lomatium watsonii</i>	G		
White meconella	<i>Meconella oregana</i>	K	T	
Disappearing monkeyflower	<i>Mimulus evanescens</i>	G	C	SOC
Liverwort monkey-flower	<i>Mimulus jungermanniioides</i>	K, G, S	Pos Extirpated (Washington) C (Oregon)	
Pulsifer's monkey-flower	<i>Mimulus pulsiferae</i>	K	S	
Suksdorf's monkey-flower	<i>Mimulus suksdorfii</i>	K	S	
Washington monkey-flower	<i>Mimulus washingtonensis</i>	K	Pos Extirpated	
Branching montia	<i>Montia diffusa</i>	K	S	
Sessile mousetail	<i>Myosurus sessilis</i>	G	C	SOC
Marigold navarretia	<i>Navarretia tagetina</i>	K	T	
Coyote tobacco	<i>Nicotiana attenuata</i>	K	S	

Tufted evening-primrose	<i>Oenothera caespitosa ssp marginata</i>	K	S	
Adder's-tongue	<i>Ophioglossum pusillum</i>	K	T	
Rosy owl-clover	<i>Orthocarpus bracteosus</i>	K	E	
Western yellow oxalis	<i>Oxalis suksdorfii</i>	K	T	
Hedgehog cactus	<i>Pediocactus simpsonii var. robustior</i>	S		
Barrett's beardtongue	<i>Penstemon barrettiae</i>	K	T	
Hot-rock penstemon	<i>Penstemon deustus var variabilis</i>	K, S	T	
Fuzzytongue penstemon	<i>Penstemon eriantherus var whitedii</i>	K	S	
Obscure buttercup	<i>Ranunculus reconditus</i>	K	E	
Persistentsepal yellowcress	<i>Rorippa columbiae</i>	K	E	
Lowland toothcup	<i>Rotala ramosior</i>	K	T	
Soft-leaved willow	<i>Salix sessilifolia</i>	K	S	
Pale blue-eyed grass	<i>Sisyrinchium sarmentosum</i>	K	T	
Western ladies-tresses	<i>Spiranthes porrifolia</i>	K	S	
Flat-leaved bladderwort	<i>Utricularia intermedia</i>	K	S	
Siskiyou false-hellebore	<i>Veratrum insolitum</i>	K	T	

Table D.1.B. Definitions for state and federal plant listings and counties (Washington Natural Heritage Program 2003, Oregon Natural Heritage Program 2004)

State Status	
E (Endangered)	In danger of becoming extinct or extirpated.
T (Threatened)	Likely to become Endangered.
S (Sensitive)	Vulnerable or declining and could become Endangered or Threatened.
C (Candidate)	Sufficient information exists to support listing as Endangered or Threatened.
Federal Status	
C (Candidate)	Sufficient information exists to support listing as Endangered or Threatened.
SOC (species of concern)	
Counties Where Plant is Present	
K (Klickitat County)	
G (Gilliam County)	Oregon data has been culled from herbarium collections, literature, reputable sighting reports, or personal communications. If the Oregon Natural Heritage Program found the information unclear, then a question mark was denoted after the county name.
M (Morrow County)	
S (Sherman County)	

Table D.2. The 23 rare plant communities in Klickitat County (Washington Natural Heritage Program 2003)

Scientific Name	Common Name
Abies grandis / achlys triphylla forest	Grand fir / vanillaleaf
Abies grandis / calamagrostis rubescens woodland	Grand fir / pinegrass
Abies grandis / clintonia uniflora forest	Grand fir / queen's cup
Abies grandis / holodiscus discolor forest	Grand fir / oceanspray
Abies grandis / mahonia nervosa var. Nervosa forest	Grand fir / dwarf oregongrape
Abies grandis / vaccinium membranaceum forest	Grand fir / big huckleberry
Alnus rhombifolia forest (provisional)	White alder
Artemisia rigida / poa secunda dwarf-shrub herbaceous vegetation	Stiff sagebrush / Sandberg's bluegrass
Artemisia tridentata / festuca idahoensis shrub herbaceous vegetation	Big sagebrush / Idaho fescue
Eriogonum compositum / poa secunda dwarf-shrub herbaceous vegetation	Arrow-leaf buckwheat / Sandberg's bluegrass
Eriogonum douglasii / poa secunda dwarf-shrub herbaceous vegetation	Douglas' buckwheat / Sandberg's bluegrass
Eriogonum sphaerocephalum / poa secunda dwarf-shrub herbaceous vegetation	Rock buckwheat / Sandberg's bluegrass
Festuca idahoensis - hieracium cynoglossoides herbaceous vegetation	Idaho fescue - houndstounge hawkweed
Pinus ponderosa - pseudotsuga menziesii cover type	Ponderosa pine - douglas-fir forest
Populus tremuloides cover type	Quaking aspen forest
Pseudoroegneria spicata - poa secunda lithosolic herbaceous vegetation	Bluebunch wheatgrass - Sandberg's bluegrass lithosol
Pseudotsuga menziesii / holodiscus discolor forest	Douglas-fir / oceanspray
Purshia tridentata / festuca idahoensis shrub herbaceous vegetation	Bitterbrush / Idaho fescue
Quercus garryana - pinus ponderosa cover type	Oregon white oak - ponderosa pine forest
Quercus garryana / elymus glaucus woodland	Oregon white oak / blue wildrye

Quercus garryana / festuca idahoensis woodland	Oregon white oak / Idaho fescue
Quercus garryana / pseudoroegneria spicata woodland	Oregon white oak / bluebunch wheatgrass
Quercus garryana forest (provisional)	Oregon white oak

Table D.3. Priority Habitats of Southwest Washington (Region 5), (WDFW, PHS list, 2004)

Habitat Type or Element	Priority Area
Aspen Stands	Pure or mixed stands of aspen greater than 0.8 ha (2 acres). Criteria: High fish and wildlife species diversity, limited availability, high vulnerability to habitat alteration.
Caves	A naturally occurring cavity, recess, void, or system of interconnected passages (including associated dendritic tubes, cracks, and fissures) which occurs under the earth in soils, rock, ice, or other geological formations, and is large enough to contain a human. Mine shafts may mimic caves, and those abandoned mine shafts with actual or suspected occurrences of priority species should be treated in a manner similar to caves. A mine is a man-made excavation in the earth usually used to extract minerals.
	Criteria: Comparatively high wildlife density, important wildlife breeding habitat and seasonal ranges, limited availability, vulnerable to human disturbance, dependent species.
Cliffs	Greater than 7.6 m (25 ft) high and occurring below 1524 m (5000 ft).
	Criteria: Significant wildlife breeding habitat, limited availability, dependent species.
Estuary, Estuary-like	Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5% during the period of average annual low flow. Includes both estuaries and lagoons.
	Criteria: High fish and wildlife density and species diversity, important breeding habitat, important fish and wildlife seasonal ranges and movement corridors, limited availability, high vulnerability to habitat alteration.
Freshwater Wetlands and Fresh Deepwater	Wetlands: Lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands must have one or more of the following attributes: the land supports, at least periodically, predominantly hydrophytic plants; substrate is predominantly undrained hydric soils; and/or the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year.
	Deepwater habitats are permanently flooded lands lying below the deepwater boundary of wetlands. Deepwater habitats include environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. The dominant plants are hydrophytes; however, the substrates are considered nonsoil because the water is too deep to support emergent vegetation. These habitats include all underwater structures and features (e.g., woody debris, rock piles, caverns).
	Criteria: Comparatively high fish and wildlife density, high fish and wildlife species diversity, important fish and wildlife breeding habitat, important fish and wildlife seasonal ranges, limited availability, high vulnerability to habitat alteration.
Instream	The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and invertebrate resources.
	Criteria: Comparatively high fish and wildlife density and species diversity, important fish and wildlife seasonal ranges, limited availability, high vulnerability to habitat alteration, dependent species.
Juniper Savannah	All juniper woodlands.

	Criteria: High fish and wildlife species diversity, important fish and wildlife breeding habitat and seasonal ranges, limited availability.
Marine / Estuarine Shorelines	Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control).
	Consolidated Substrate: Rocky outcroppings in the intertidal and subtidal marine/estuarine environment consisting of rocks greater than 25 cm (10 in) diameter, hardpan, and/or bedrock.
	Unconsolidated Substrate: Substrata in the intertidal and subtidal marine environment consisting of rocks less than 25 cm (10 in) diameter, gravel, shell, sand, and/or mud.
	Criteria: Comparatively high fish and wildlife density, high fish and wildlife species diversity, important fish and wildlife seasonal ranges, limited availability, high vulnerability to habitat alteration, dependent species.
Old-growth / Mature Forests	<u>Old-growth east of Cascade crest:</u> Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 25 trees/ha (10 trees/acre) > 53 cm (21 in) dbh, and 2.5-7.5 snags/ha (1 - 3 snags/acre) > 30-35 cm (12-14 in) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions.
	<u>Mature forests:</u> Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west and 80 - 160 years old east of the Cascade crest.
	Criteria: High fish and wildlife density, high fish and wildlife species diversity, important fish and wildlife breeding habitat, important fish and wildlife seasonal ranges, limited and declining availability, high vulnerability to habitat alteration.
Oregon White Oak Woodlands	Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%; or where total canopy coverage of the stand is <25%, but oak accounts for at least 50% of the canopy coverage present. The latter is often referred to as oak savanna. In non-urbanized areas west of the Cascades, priority oak habitat consists of stands 0.4 ha (1.0 ac) in size. East of the Cascades, priority oak habitat consists of stands 2 ha (5 ac) in size. In urban or urbanizing areas, single oaks or stands < 0.4 ha (1 ac) may also be considered a priority when found to be particularly valuable to fish and wildlife.
	Criteria: Comparatively high fish and wildlife density, high fish and wildlife species diversity, limited and declining availability, high vulnerability to habitat alteration, dependent species.
Prairies and Steppe	Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.
	Criteria: Comparatively high fish and wildlife density, high fish and wildlife species diversity, important fish and wildlife breeding habitat, important fish and wildlife seasonal ranges, limited and declining availability, high vulnerability to habitat alteration, unique and dependent species.
Riparian	The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. In riparian systems, the vegetation, water tables, soils, microclimate, and wildlife inhabitants of terrestrial ecosystems are influenced by perennial or intermittent water. Simultaneously, the biological and physical properties of the aquatic ecosystems are influenced by adjacent vegetation, nutrient and sediment loading, terrestrial wildlife, as well as organic and inorganic debris. Riparian habitat encompasses the area beginning at the ordinary high water mark and extends to that portion of the terrestrial landscape that is influenced by, or that directly influences, the aquatic ecosystem. Riparian habitat includes the entire extent of the floodplain and riparian areas of wetlands that are directly connected to stream courses.
	Criteria: High fish and wildlife density, high fish and wildlife species diversity, important fish and wildlife breeding habitat, important wildlife seasonal ranges, important fish and wildlife movement corridors, high vulnerability to habitat alteration, unique or dependent species.

Rural Natural Open Space	A priority species resides within or is adjacent to the open space and uses it for breeding or regular feeding; and/or the open space functions as a corridor connecting other <i>priority habitats</i> , especially areas that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and surrounded by agricultural developments. Local consideration may be given to open space areas smaller than 4 ha (10 acres).
	Criteria: Comparatively high fish and wildlife density, high fish and wildlife species diversity, important fish and wildlife breeding habitat, important fish and wildlife seasonal ranges, important fish and wildlife movement corridors, high vulnerability to habitat alteration, unique species assemblages in agricultural areas.
Shrub Steppe	Large Tracts: Tracts of land >259 ha (640 ac) consisting of plant communities with one or more layers of perennial grasses and a conspicuous but discontinuous layer of shrubs. Large tracts of shrub-steppe contribute to the overall continuity of the habitat type throughout the region because they are relatively unfragmented, contain a substantial amount of interior habitat, and are in close proximity to other tracts of shrub-steppe. These tracts should contain a variety of habitat features (e.g., variety of topography, riparian areas, canyons, habitat edges, plant communities). Another important component is habitat quality based on the degree with which a tract resembles a site potential natural community, which may include factors such as soil condition and degree of erosion; and distribution, coverage, and vigor of native shrubs, forbs, grasses, and cryptogams.
	Small Tracts: Tracts of land <259 ha (640 ac) with a habitat type consisting of plant communities with one or more layers of perennial grasses and a conspicuous but discontinuous layer of shrubs. Although smaller in size and possibly more isolated from other tracts of shrub-steppe these areas are still important to shrub-steppe obligate and other state-listed wildlife species. Also, important are the variety of habitat features and habitat quality aspects as listed above.
	Criteria: Comparatively high fish and wildlife density and species diversity; important fish and wildlife breeding habitat and seasonal ranges, limited availability, high vulnerability to habitat alteration, unique and dependent species.
Snags and Logs	Snags and logs occur within a variety of habitat types that support trees. Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of ≥ 51 cm (20 in) in western Washington and ≥ 30 cm (12 in) in eastern Washington, and are ≥ 2 m (6.5 ft) in height. Priority logs are ≥ 30 cm (12 in) in diameter at the largest end, and ≥ 6 m (20 ft) long. Abundant snags and logs can be found in old-growth and mature forests or unmanaged forests of any age, in damaged, burned, or diseased forests, and in riparian areas. Priority snag and log habitat includes individual snags and/or logs, or groups of snags and/or logs of exceptional value to wildlife due to their scarcity or location in a particular landscape. Areas with abundant, well distributed snags and logs are also considered priority snag and log habitat. Examples include large, sturdy snags adjacent to open water, remnant snags in developed or urbanized settings, and areas with a relatively high density of snags.
	Criteria: Comparatively high fish and wildlife density and species diversity, important fish and wildlife breeding habitat and seasonal ranges, limited availability, high vulnerability to habitat alteration, large number of cavity-dependent species.
Talus	Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
	Criteria: Limited availability, unique and dependent species, high vulnerability to habitat alteration.
Urban Natural Open Space	A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other <i>priority habitats</i> , especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development. Local considerations may be given to open space areas smaller than 4 ha (10 acres).
	Criteria: Comparatively high fish and wildlife density, high fish and wildlife species diversity, important fish and wildlife breeding habitat, important fish and wildlife movement corridors, limited availability, high vulnerability to habitat alteration.

Table D.4.A. Noxious weeds found in the Rock Creek watershed (Hudson, 2003, Pers. Comm.).
Definitions of classes are in table D.4.B

Common Name	Scientific Name
Class A	
Buffalobur	<i>Solanum rostratum</i>
Class B	
broom, Scotch*	<i>Cytisus scoparius</i>
catsear, common	<i>Hypochaeris radicata</i>
cinquefoil, sulfur	<i>Potentilla recta</i>
daisy, oxeye*	<i>Leucanthemum vulgare</i>
parsley, hedge*	<i>Torilis arvensis</i>
houndstongue*	<i>Cynoglossum officinale</i>
indigobush	<i>Amorpha fruticosa</i>
knapweed, diffuse	<i>Centaurea diffusa</i>
knapweed, spotted*	<i>Centaurea biebersteinii</i>
pepperweed, perennial	<i>Lepidium latifolium</i>
starthistle, yellow	<i>Centaurea solstitialis</i>
toadflax, Dalmatian*	<i>Linaria dalmatica ssp. dalmatica</i>
watermilfoil, Eurasian	<i>Myriophyllum spicatum</i>
sandbur, longspine	<i>Cenchrus longispinus</i>
kochia	<i>Kochia scoparia</i>
puncturevine	<i>Tribulus terrestris</i>
skeletonweed, rush	<i>Chondrilla juncea</i>
knapweed, Russian	<i>Acropilon repens</i>
thistle, Scotch	<i>Onopordum acanthium</i>
Class C	
thistle, Canada	<i>Cirsium arvense</i>
cocklebur, spiny	<i>Xanthium spinosum</i>
Other	
whitetop, hairy	<i>Cardaria pubescens</i>

* species found less here than in Big White Salmon and Klickitat watersheds.

Table D.4.B. The three classes of weed categories and their definitions (WS NWCB 2004)

Class A	The State of Washington through RCW 17.10 has listed Class A weeds for eradication statewide. Class A consists of those noxious weeds not native to state that are of limited distribution or are unrecorded in the state and that pose a serious threat to the state.
Class B	The State of Washington through RCW 17.10 has listed Class B weeds as designated for control in Klickitat County. Class B-designate consists of those noxious weeds not native to the state and that are of limited distribution or are unrecorded in a region of the state and whose populations in a region or area are such that all seed production can be prevented within a calendar year.
Class C	Each species is already widely established in Washington or is of special interest to the state's agricultural industry. Placement on the state noxious weed list allows counties to enforce control if locally desired. Other counties may choose simply to provide education or technical consultation to county residents.

Table D.4.C. Noxious weeds found in Sherman County (Asher, pers. comm., 2004). Definitions of classes are in table D.4.D

Common Name	Scientific Name
Class A	
Blessed Milthistle	<i>Silybun mariamim</i>
Camelthorn	<i>Alhagi pseudalhagi</i>
Canada Thistle	<i>Cirsium arvense</i>
Common Crupina	<i>Crupina vulgaris</i>
Gorse	<i>Ulex europaeus</i>
Halogeton	<i>Halogeton glomeratus</i>
Iberian Starthistle	<i>Centaurea iberica</i>
Italian thistle	<i>Carduus pycnocephalus</i>
Jimsonweed	<i>Datura stramonium</i>
Kochia	<i>Kochia scoparia</i>
Leafy Spurge	<i>Euphorbia esula</i>
Knapweed Complex	<i>Centaurea sp.</i>
Mediterranean Sage	<i>Salvia aethiopsis</i>
Musk Thistle	<i>Carduus nutans</i>
Rush skeletonweed	<i>Chondrilla luncea</i>
Scotch broom	<i>Cytisus scoparius</i>
Spikeweed	<i>Hemizonia pungens</i>
Tansy ragwort	<i>Senecio jacobaea</i>
Yellow Starthistle	<i>Centaurea solstitialis</i>
Wild-prose Millet	<i>Panicum millaceum</i>

Class B	
Canada Thistle	<i>Cirsium arvense</i>
Dalmatian toadflax	<i>Linaria genistifolia - dalmatica</i>
Field Bindweed (morningglory)	<i>Convolvulus arvensis</i>
Knapweed Complex	<i>Centaurea sp.</i>
Perennial Sowthistle	<i>Sonchus arvensis</i>
Scotch Thistle	<i>Onaporchum acanthium</i>
Scouringrush	<i>Equisetum laevigatum</i>
Showy Milkweed	<i>Asclepias speciosa</i>
Whitetop (Hoary Cress)	<i>Cardaria draba</i>
Wild Oat	<i>Averia fatua</i>
Yellow Starthistle	<i>Centaurea solstitialis</i>
Class C	
Bull Thistle	<i>Cirsium vulgare</i>
Common Rye	<i>Secale cereale</i>
Field Dodder	<i>Cuscuta campestris</i>
Jointed Goatgrass	<i>Aegilops cylindrica</i>
Klamath Weed (St. Johnswort)	<i>Hypericum perforatum</i>
Little Bur (Bur Buttercup)	<i>Ranunculus testiculatus</i>
Marestail	<i>Coniza canadensis</i>
Medushead Rye	<i>Taeniatuherum caput-medusae</i>
Perennial Pepperweed	<i>Lepidium latifolium</i>
Poison Hemlock	<i>Conium macalatum</i>
Prickly Lettuce	<i>Lactuca serriola</i>
Puncturevine	<i>Triulus terrestris</i>
Quackgrass	<i>Flytrigia repens</i>
Russian Thistle	<i>Salsola iberica</i>
Spiny Cockelbur	<i>Xanthium spinosum</i>
Western Waterhemlock	<i>Cicuta douglasii</i>
Wavyleaf Thistle	<i>Cirsium undulatum</i>

Table D.4.D. The three classes of weed categories and their definitions (Asher, pers. comm., 2004)

Class A	Any noxious weed which greatly endangers the overall economic well-being of the county and has a small enough distribution where eradication is possible.
Class B	A noxious weed which is well established in the County and has known egative impacts, but due to its distribution, eradication is not feasible.
Class C	A noxious weed which is wide spread throughout the County and has known economic impacts.

Table D.4.E. Noxious weeds found in Gilliam County, See noxious weed tables (Klickitat and Sherman counties) for scientific names of these plant species (Farrar, pers. comm., 2004). Definitions of classes are in table D.4.F

A	B	T
Buffaloburr	Bull Thistle	Dalmatian Toadflax
Distaff Thistle	Canadian Thistle	Kochia
Field Dodder	Dalmatian/ Yellow Toadflax	Leafy Spurge
Hydrilla	Diffuse Knapweed	Rush Skeletonweed
Johnsongrass	Field Bindweed/ Morning Glory	Spikeweed
Kudzu	Himalayan Blackberry	Spotted Knapweed
Leafy Spurge	Jointed Goatgrass	Yellow Starthistle
Murtle Spurge	Klamath Weed/ St. Johnswort	
Musk Thistle	Kochia	
Poison Hemlock	Puncturevine	
Purple Loosestrife	Russian Knapweed	
Rush Skeletonweed	Sandburr	
Salt Cedar	Scotch Thistle	
Spartina	Spikeweed	
Spotted Knapweed	Whitetop	
Tansy Ragwort		
Yellow Starthistle		

Table D.4.F. The three classes of weed categories and their definitions (Farrar, pers. comm., 2004)

Class A	A weed of known economic importance which occurs in the country in small enough infestation to make eradication/containment possible; or not known to occur but it's presence in a neighboring county makes future occurrence seem imminent. Recommended Action: Infestations are subject to intensive control when and where found.
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Class B	A weed of economic importance, which is regionally abundant, but of limited distribution in other counties. Recommended Action: Moderate to intensive control at the state or county level.
Class T	All other weeds as listed on the state weed list.

Table D.5. A few of the plant species culturally important to the Yakama Nation (not all found in the Rock Creek watershed) (Hunn 1990, Lyons 1995, Taylor, 1992, Uebelacker 1985)

Species Name	Common Name	Habitat / Areas Found	Traditional and Current Uses
Celeries			
Lomatium grayi	Gray's desert parsley	Shrub Steppe	First food, mid-feb., honored at first food feast along with suckers
Lomatium nudicaule	Bare-stem desert parsley	Shrub Steppe	Honored at second feast in mid-April (with Salmon and bitterroot), marks beginning of root season
Lomatium dissectum	Fern-leaf desert parsley	Shrub Steppe, talus slopes	Traditional food, medicinal
Balsamorhiza sagittata	Arrow-leaf balsamroot	Shrub Steppe	Traditional food
Balsamorhiza careyana	Carey's balsamroot	Shrub Steppe	Traditional food
Wyethia amplexicaulis	Mule's ear	Moist areas	Traditional food
Heracleum lanatum	Cow's parsnip	Higher elevation, wet	Traditional food
Plant Foods That Are Dug			
Camassia quamash	Camas	Wet Meadow	Traditional food
Lomatium cous	Cous or Biscuitroot	Shrub Steppe, dry open slopes	Traditional food
Lomatium canbyi	Canby Lomatium	Priest Rapids	Traditional food
Lomatium piperi	Not found	Not found	Traditional food
Lomatium grayi	Gray's desert parsley	Shrub Steppe	First food, mid-feb., honored at first food feast along with suckers
Lomatium macrocarpum	Large-fruited biscuitroot	Shrub Steppe	Traditional food
Lomatium hambleniae	Not found	Not found	Traditional food
Lomatium minus	Not found	Not found	Traditional food
Lomatium gormanii	Salt and Pepper	Shrub Steppe	Traditional food
Lewisia rediviva	Bitterroot	Shrub Steppe	Traditional food, honored at second feast in mid-April
Perideridia gairdneri	Yampah, Indian carrot	High elevation Shrub Steppe, conifer, aspen, subalpine	Traditional food

		meadows	
<i>Claytonia lanceolata</i>	Spring beauty or Indian potato	High elevation meadows, alpine slopes, Shrub Steppe plains	Traditional food
<i>Brodiaea hyacinthina</i>	Hyacinth brodiaea, Fool's Onion	Moist areas	Traditional food
<i>Brodiaea howellii</i>	Brodiaea, Wild hyacinth	Shrub Steppe, Ponderosa pine	Traditional food
<i>Brodiaea douglasii</i>	Brodiaea, Wild hyacinth	Shrub Steppe, Ponderosa pine	Traditional food
<i>Fritillaria pudica</i>	Yellow bell	Shrub Steppe	Traditional food
<i>Tauschia hooveri</i>	Not found	Not found	Traditional food
<i>Calochortus macrocarpus</i>	Mariposa lily	River drainages, dry, sandy soils	Traditional food
<i>Microseris troximoides</i>	Microseris, "false dandelion"	Shrub Steppe	Traditional food
<i>Erythronium grandiflorum</i>	Yellow avalanche lily, glacier lily	Low-mid elevation meadows	Traditional food
<i>Osmorhiza occidentalis</i>	Not found	Not found	Traditional food
<i>Lillium columbianum</i>	Tiger lily	Damp soil, up to 4000'	Traditional food
<i>Valeriana edulis</i>	Not found	Not found	Traditional food
<i>Balsamorhiza hookeri</i>	Hooker's balsamroot	Shrub Steppe	Traditional food
<i>Allium acuminatum</i>	Wild onion	Shrub Steppe	Traditional food
<i>Allium douglasii</i>	Wild onion	Shrub Steppe	Traditional food
<i>Allium robinsonii</i>	Wild onion	Shrub Steppe	Traditional food
Plants Picked For Food			
<i>Vaccinium membranaceum</i>	Black huckleberry	Riparian/Forest	Traditional food, most important fruit
<i>Vaccinium alaskaense</i>	Alaskan huckleberry / blueberry	Forest	Traditional food
<i>Vaccinium scoparium</i>	Grouseberry / huckleberry	Forest	Traditional food
<i>Vaccinium ovalifolium</i>	Oval-leaved blueberry/blue	Riparian/Forest	Traditional food
<i>Vaccinium parvifolium</i>	Red huckleberry	West of cascades	Traditional food
<i>Vaccinium deliciosum</i>	Blue-leaved huckleberry	Riparian/Forest	Traditional food

Bryoria fremontii	Black tree lichen	Low elevation forests	Traditional food
Prunus virginia ssp. demissa	Chokecherry	Shrub Steppe, bunchgrass and ponderosa pine	Traditional food
Amelanchier alnifolia	Serviceberry	Riparian	Traditional food
Sambucus cerulea	Blue elderberry	Riparian	Traditional food
Sambucus racemosa var. melanocarpa	Black elderberry	Riparian	Traditional food
Ribes aureum	Golden currant	Forest	Traditional food
Rubus leucodermis	Black raspberry	Riparian	Traditional food
Rubus idaeus	Red raspberry	Riparian	Traditional food
Rubus parviflorus	Thimbleberry	Riparian	Traditional food
Trees			
Pinus ponderosa	Ponderosa pine	Forest	Edible inner bark and sugar, medicinal
Salix spp.	Willow	Riparian	Non-food, building material
Salix amygdaloides	Peachleaf willow	Riparian	Used to construct longhouse frames
Quercus garryana	Oregon white or Gary oak	Low elevation forest	Acorns (food), dip net material, trading
Acer circinatum	Vine maple	Along creeks or meadows	Dip net hoops
Acer glabrum	Douglas maple	Mid-elevation forests	Dip net hoops
Holodiscus discolor	Oceanspray	Low-elevation mountain and ponderosa pine	Crosspiece giving strength to dip net hoop
Populus spp.	Cottonwood, Aspen	Riparian	Non-food, building material
Thuja plicata	Western red cedar	Wet forests	Crafts, basketry
Larix occidentalis	Western Larch	Forest	Medicinal
Picea engelmannii	Engelmann Spruce	East-side forests	Medicinal drink
Fibers			
Apocynum cannabinum	Indian hemp or Common dogbane	Shrub Steppe, grass and p. pine community	Dip nets, root collecting bags, hats, tule mats
Scirpus acutus	Bulrush or Tule	Low elevation riparian	Mats for winter longhouses, summer homes
Scirpus validus	Bulrush or Tule	Low elevation riparian	Mats for winter longhouses, summer homes

<i>Xerophyllum tenax</i>	Bear-grass	Riparian/Forest	Roots boiled to make soap, basketry, trade item
<i>Prunus emarginata</i>	Bitter cherry	Shrub Steppe, bunchgrass and ponderosa pine	Traditional food, medicinal
<i>Sarcobates. vermiculatus</i>	Greasewood	Shrub Steppe, alkaline flats and playas	Tule mats
<i>Phragmites communis</i>	Common reed	Not found	Work mat
<i>Typha latifolia</i>	Common cattail	Riparian	Bags for storing salmon meal
<i>Elymus cinereus</i>	Giant wild rye	Not found	Drying salmon, baking mat, disposable floor mats
<i>Arctostaphylos uva-ursi</i>	Kinnikinnick	Alpine meadow	Traditional food and material
Medicines			
<i>Lomatium dissectum</i>	Fern-leaf desert parsley	Shrub Steppe, talus slopes	Traditional food, medicinal
<i>Ligustichum canbyi</i>	Lovage (?)	Not found	Medicinal
<i>Helianthus cusickii</i>	Cusick's (Wild) sunflower	Dry, open plains and foothills	Medicinal
<i>Prunus emarginata</i>	Bitter cherry	Shrub Steppe, bunchgrass and ponderosa pine	Traditional food, medicinal
<i>Agastache occidentalis</i>	Western giant-hyssop, Horsemint	Foothills and eastern slope of cascades	Medicinal
<i>Picea engelmannii</i>	Engelmann Spruce	East-side forests	Medicinal drink
<i>Nicotiana attenuata</i>	Wild tobacco	Not found	Medicinal drink

Appendix E Adult Salmon Passage at the Dalles Dam on the Columbia River from 1977 – 2003 (Fish Passage Center Website. 2004).

1.1.1 11																	
Year	Chinook	Chinook Jack	Chinook Spring Adult	Chinook Spring Jack	Chinook Summer Adult	Chinook Summer Jack	Chinook Fall Adult	Chinook Fall Jack	Coho	Coho Jack	Sockeye	Steelhead	*Wild Steelhead	Pink	Shad	Chum	Lamprey
2003	546,394	61,671	131,207	11,522	101,490	10,441	313,697	39,708	42,563	2,811	34,176	273,172	85,287	127	4,258,889	0	28,995
2002	540,173	42,982	181,176	3,870	113,069	5,743	245,928	33,369	9,765	3,021	40,554	387,920	116,565	0	3,218,050	1	23,417
2001	556,690	72,644	303,912	9,953	71,462	10,926	181,316	51,765	62,378	2,179	102,562	503,327	125,117	0	2,724,948	0	9,061
2000	253,067	63,147	102,953	14,796	25,147	10,433	124,967	37,918	24,966	4,513	73,383	205,241	53,711	1	1,556,619	0	8,050
1999	171,079	28,412	17,563	6,180	21,730	3,207	131,786	19,025	13,393	1,648	13,715	156,874	41,379	19	1,718,683	0	
1998	133,619	20,513	25,225	518	15,462	1,444	92,932	18,551	8,196	775	8,828	116,682	22,302	0	2,149,097	0	
1997	207,552	16,249	69,365	375	20,201	1,255	117,986	14,619	4,067	662	32,430	164,756	20,399	0	2,571,260	0	6,066
1996	154,044	13,867	23,877	3,250	13,023	1,465	117,144	9,152	3,622	961	25,055	162,456	23,583	0	2,648,560	0	
1995	108,980	32,813	5,975	1,578	12,185	1,373	90,820	29,862	2,786	483	7,166	145,844	19,484	0	1,959,564	0	
1994	136,288	25,470	11,543	255	14,776	1,221	109,969	23,994	3,786	590	9,356	112,253	20,263	0	1,801,545	0	
1993	172,655	12,298	68,492	864	19,107	956	85,056	10,478	3,944	416	62,252	124,829		0	2,394,394	0	
1992	141,347	27,160	56,963	1,488	11,990	2,986	72,394	22,686	2,590	1,239	66,384	232,179		0	2,824,313	0	
1991	116,181	36,820	29,657	2,702	15,726	2,741	70,798	31,377	8,544	1,059	63,417	199,689					
1990	174,773	32,789	56,319	1,071	20,213	2,402	98,241	29,316	2,312	2,355	40,230	129,448					
1989	252,848	28,582	48,942	4,072	27,710	2,845	176,196	21,665	7,761	4,722	39,672	232,268					
1988	308,355	69,593	70,306	3,245	25,701	4,171	212,348	62,177	6,616	2,700	55,979	198,417					
1987	356,113	65,118	75,197	2,296	27,797	3,006	253,119	59,816	1,358	1,956	87,599	219,079					
1986	266,175	176,411	83,882	3,101	21,329	3,091	160,964	170,219	3,384	1,455	48,400	281,826					
1985	223,400	144,251	68,375	6,878	20,792	3,875	134,233	133,498	3,037	1,535	117,181	273,316					
1984	132,990	70,847	30,658	3,295	18,870	3,674	83,462	63,878	1,861	1,311	101,379	218,552					

1983	114,855	42,408	35,151	1,711	13,796	3,255	65,908	37,442	1,203	2,255	84,203	170,671					
1982	112,517	60,165	41,494	3,256	15,111	4,231	55,912	52,678	4,336	3,047	33,331	117,434					
1981	101,257	33,919	39,246	1,914	17,048	2,628	44,963	29,377	2,536	4,405	35,447	113,268					
1980	93,935	20,016	23,534	4,703	18,572	2,561	51,829	12,752	3,356	2,970	42,088	93,963					
1979	107,737	42,874	25,582	1,715	26,591	5,707	55,564	35,452	8,726		32,791	83,364					
1978	167,434	31,794	83,353	1,571	32,396	2,000	51,685	28,223	18,877		11,845	60,485					
1977	169,886	55,062	86,601	3,772	34,487	9,891	48,798	41,399	10,021		86,252	133,982					

* Wild Steelhead are a subset of the Steelhead count

Figure 160A: Fish Use Designations*
Hood Basin, Oregon

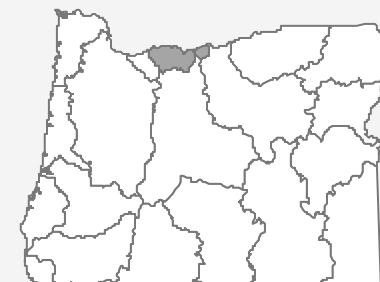
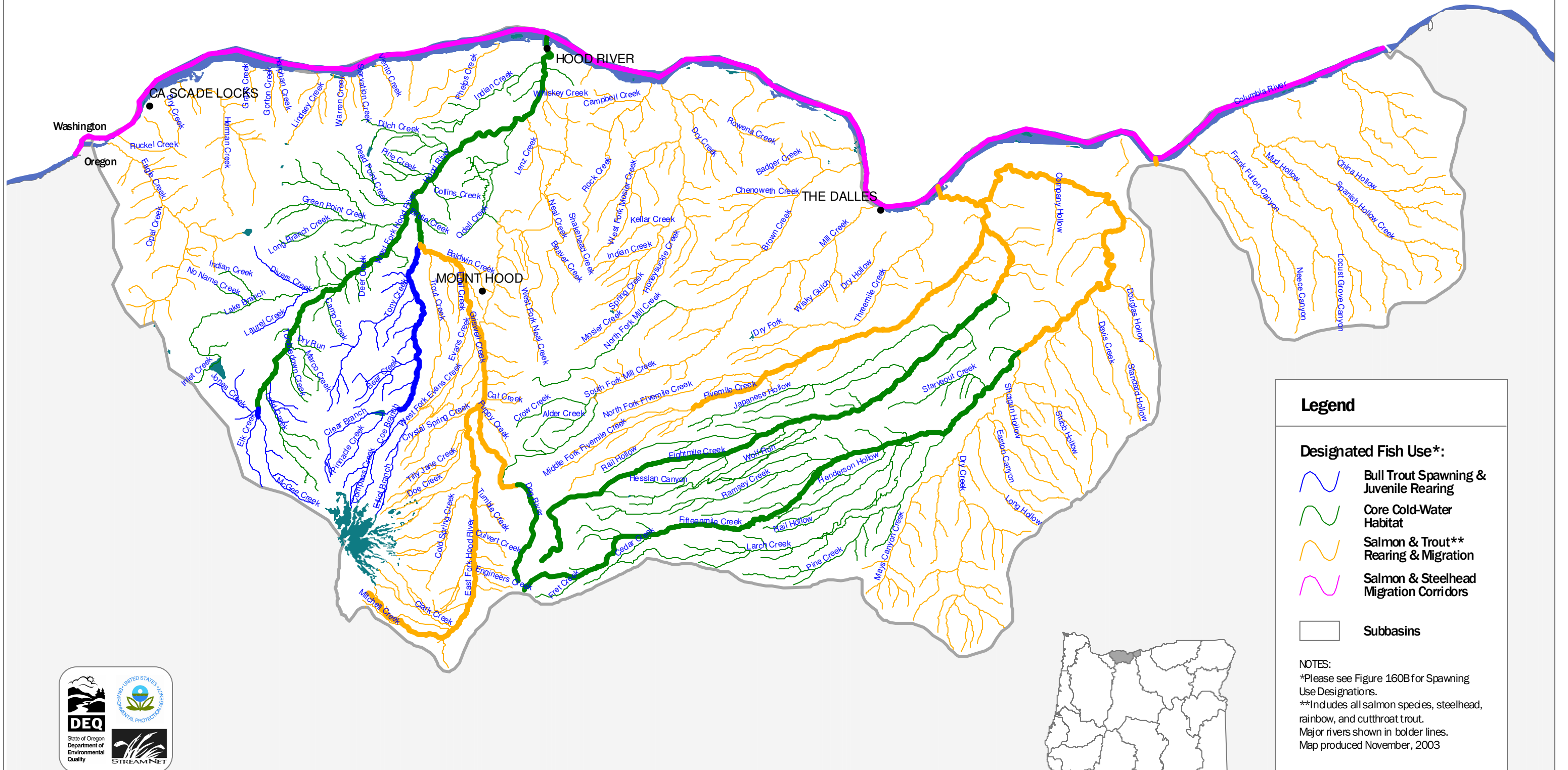


Figure 160B: Salmon and Steelhead Spawning Use Designations*
Hood Basin, Oregon

