

3.5 WILDLIFE

This section first addresses federally listed threatened and endangered animal species, designated critical habitat, and other species and habitats that have been identified by WDFW, USFWS, and/or USFS as sensitive as of January 1998, which, for this EIS, includes a wide range of classifications (e.g., state candidate, USFWS species of concern, USFS monitor species, etc.). Impacts on other general wildlife species that do not have a special-status designation, such as deer, elk, and hawks, as well as general wildlife habitats, are subsequently addressed.

3.5.1 Affected Environment

3.5.1.1 Threatened, Endangered, and Other Special-Status Wildlife Species and Habitats

This section focuses on special-status mammals, birds, reptiles, and amphibians. Fish and plant species listed as threatened, endangered, or candidates for listing under the Endangered Species Act, as well as other special-status fish and plants, are addressed in Section 3.7, Fisheries and Section 3.3, Botanical Resources.

Unless otherwise noted, this section is based on information presented in the ASC (OPL 1998) and technical reports prepared for this proposal (Dames & Moore 1997a, 1997b). These sources are based on reconnaissance-level field surveys, WDFW sensitive animal site records, and review of literature. Protocol surveys were conducted for Larch Mountain salamander. Protocol surveys were not conducted for other species, including threatened and endangered species known to be present in the project vicinity, because (1) suitable habitat is assumed occupied, (2) occupied sites are well known and additional sites are unlikely (for bald eagle), and/or (3) project impacts could be shown to be adequately mitigated without the need for surveys at this time. As described in the mitigation section, clearance surveys for some threatened, endangered, and other wildlife species would be necessary prior to project construction to avoid adverse impacts.

A primary issue addressed in this EIS is the proposal's effect on wildlife species listed as either threatened or endangered under the Endangered Species Act (ESA) -- referred to simply as listed species. A similar issue addressed is the proposal's effect on Critical Habitat Units (CHUs), which are also designated and protected under the ESA. CHUs are lands specifically designated to protect a listed species and receive generally the same protection as listed species.

The USFWS identified listed species and CHUs that may occur in the vicinity of the proposal (Dames & Moore 1997a). Table 3.5-1 summarizes the habitat requirements, known occurrences, and potential for these listed species to occur within the affected environment. The following paragraphs provide additional information about listed species and habitats that could be affected by the project.

Table 3.5-1. Threatened and Endangered Species Evaluated in the Vicinity of the Proposed Pipeline Project

Species	Status	Habitat Association	Potential for Using Specific Areas Proposed for Development	Notes
peregrine falcon (<i>Falco peregrinus</i>)	E	Cliffs (for nesting), concentrations of waterfowl/other birds (Johnsgard 1990).	Potential pass-through migrant ; potentially suitable nesting habitat along the Columbia River.	No known nest sites found during WDFW surveys of Snoqualmie Pass area.
gray wolf (<i>Canis lupus</i>)	E	Wilderness; isolation from human disturbance for denning (Chapman and Feldhammer 1982).	Habitat marginal due to human activities. Potential pass-through use as part of much larger territories; otherwise, absent.	No packs, den sites, or rendezvous areas known or suspected near project.
grizzly bear (<i>Ursus arctos horribilis</i>)	T	Vast areas of wilderness; meadows, wet areas, open slopes with huckleberries for foraging (U.S. Fish and Wildlife Service 1982).	Regular use of the area highly doubtful due to human activities, high road density, and lack of sightings. Marginal habitat otherwise.	Project is outside of defined recovery zone and away from optimum habitat identified in Alpine Lakes Wilderness (Wenatchee National Forest 1997).
marbled murrelet (<i>Brachyramphus narmoratus narmoratus</i>)	T	Requires mature and old-growth forest with trees having large-diameter branches for nesting (Hamer and Cummins 1991, Murrelet Report).	Absent due to lack of suitable nesting habitat.	No sightings reported.
northern spotted owl (<i>Strix occidentalis caurina</i>)	T	Requires mature and old-growth forest, with multiple canopy layers and large amounts of dead and down woody material; typically below 4,500 feet in western Washington (Thomas et al. 1993).	No nest sites occur within the 0.25 mile disturbance buffer.	No suitable habitat within area that would be disturbed.
bald eagle (<i>Haliaeetus leucocephalus</i>)	T	Almost always found near large bodies of water where primary prey items of fish and waterfowl can be found (USFWS 1986).	No nest sites near project area. Wintering occurs near major streams and rivers.	Regular winter use documented along Snoqualmie, Yakima, Columbia Rivers (WDFW 1987).

T = Threatened, E = Endangered

Northern Spotted Owl Nest Sites. Northern spotted owls are present near the pipeline corridor, generally on or within 2 km (1.2 miles) of USFS land. Recent survey data of spotted owl locations is available for most of the pipeline corridor, due to recent USFS and Plum Creek Timber Company surveys (USFS/USFWS 1997).

The two key project issues related to northern spotted owls and the proposal are (1) possible nest site disturbance, and (2) possible habitat loss. The USFS considers nest site disturbance to occur when a nesting pair of northern spotted owls may be disturbed by construction activities within 0.4 km (0.25 mile) of an active nest site during the breeding season. Based on the existing survey data, the closest known northern spotted owl nest site is 0.8 km (0.50 mile) from where disturbance would occur¹. However, northern spotted owl data are generally only acceptable for 2 years, and the entire alignment has not been surveyed. In the absence of additional surveys, any suitable nesting habitat within 0.4 km (0.25 mile) is assumed to be occupied by a nesting pair. Although much of the habitat adjacent to the proposal is not suitable for nesting, some habitat occurs within 0.4 km (0.25 mile) of the pipeline corridor. However, no habitat suitable for northern spotted owl nesting is present within the 18.3 m (60-foot) wide construction corridor itself.

For habitat loss, the USFWS, USFS, and WDFW consider that adverse effects on a nesting pair may occur if suitable habitat is removed within 2.9 km (1.8 miles) of a nest site or activity center. While the proposal would come within the 2.9 km (1.8-mile) management radius of 13 known nest sites, no suitable habitat is present within 2.9 km (1.8 mile) of areas where vegetation would be removed or otherwise disturbed.

Marbled Murrelet Nest Sites. No known marbled murrelet nest sites are present within the pipeline corridor; however, the entire corridor has not been surveyed so, potentially, unknown nest sites may be present. No suitable habitat is present within the proposed 9.1 m (30-foot) construction corridor.

Designated Critical Habitat for Northern Spotted Owl and Marbled Murrelet. The project would cross within and near areas that have been designated as critical habitat for northern spotted owl and that may meet the definition of critical habitat for marbled murrelet. The determination of impact and mitigation for these critical habitats is conducted through the ESA and not through NEPA. However, to meet the disclosure requirements for NEPA, this analysis identifies the types of impacts that may occur and makes reasonable predictions as to the likelihood that impacts can be effectively mitigated.

To understand potential impacts and mitigation, it is important to distinguish between designated critical habitat (called CHUs), which is a regulatory definition, and habitat which is currently suitable, which is a biological definition. As previously mentioned, CHUs are lands specifically designated by the USFWS to protect a listed species. Suitable habitat, on the other hand, are lands that provide shelter, food, breeding sites, foraging habitat, or other key features the animal

¹Because of the sensitivity of nest site data, the WDFW generally prefers to provide exact locations on a need-to-know basis; therefore, the exact location of these nest sites is not reported in this EIS, although these locations were determined as part of the impact analysis.

needs to survive. Because CHUs are regulatory, and suitable habitat is biological, not all suitable habitat for marbled murrelet or northern spotted owl is necessarily within designated CHUs, and, conversely, not all areas within designated CHUs for these species are necessarily suitable habitat.

A further distinction must be made between designated CHUs for marbled murrelet and designated CHUs for northern spotted owl. The USFWS has delineated specific areas as CHUs for each of these species. However, for marbled murrelet CHUs, forested habitat must have certain characteristics to be considered designated CHUs. For northern spotted owl CHUs, generally all habitat that has the potential to become suitable is considered designated critical habitat within the CHUs.

With the distinction between CHUs and suitable habitat being made, and the distinction between marbled murrelet CHUs and northern spotted owl CHUs being made, habitat within the areas that would be cleared by the project is not currently biologically suitable for either northern spotted owl or marbled murrelet because the forest is much too young to provide the necessary structural components to meet the needs of the species to breed, feed, or seek shelter. However, habitat meeting the regulatory definition of CHUs for northern spotted owl is present within the 0.8 km (0.5-mile) long by 9.1 m (30-foot) wide section of new corridor that would be constructed between the Annette Lake Trailhead area and the John Wayne trail.

This same 0.8 km (0.5-mile) section may meet the regulatory definition for CHUs for marbled murrelet, as defined in the final designation published in the Federal Register on May 24, 1996. However, trees may not meet the required one-half site-potential tree height to qualify as marbled murrelet designated CHUs. The USFS, in consultation with the USFWS, will determine which, if any, habitat meets the CHUs requirements for marbled murrelet, under the consultation requirements of the ESA.

Bald Eagle. The affected environment contains no bald eagle nests, based on documented nesting records maintained by the WDFW (WDFW 1997). None are located within 2 km (1.2 miles) of proposed activities, which is well beyond the maximum recommended buffer distance of 0.8 km (0.5 mile) (Rodrick and Milner 1991). A bald eagle nest is located approximately 2.9 km (1.8 miles) west of the proposal near the Snoqualmie River north of Carnation, and another is located near Lake Cle Elum, several kilometers north of the proposal. Both are sufficiently far from the proposal to be considered outside of the affected environment. In addition, the Yakima Watershed Analysis (Wenatchee National Forest 1997) identified potential bald eagle nest territories along Keechelus Lake; however, no eagles had established nest sites there as of the 1997 nesting season.

Bald eagle wintering populations occur along the Snoqualmie River Valley, Tolt River, South Fork Snoqualmie River, Keechelus Lake, Yakima River, Columbia River, and lower Crab Creek. In addition, waterfowl, which are a primary food stock of wintering bald eagles, concentrate in large flocks on the Columbia River where the pipeline would cross.

Gray Wolf and Grizzly Bear. Gray wolf and grizzly bear are not substantial elements of the affected environment because:

- # Both species avoid areas with human activity, and the proposal would be located within an area of high human activity and past land disturbance (e.g., the Snoqualmie Pass Recreation Area, I-90, logging roads, and extensive fire and logging history).
- # Very few grizzlies or wolves are believed to exist in the Washington Cascades. No key grizzly or wolf use areas, including den sites, are expected to be within the pipeline corridor (Wenatchee National Forest 1997, WDFW 1997).
- # The proposal is outside of the defined recovery zone for grizzly bear (U.S. Fish and Wildlife Service 1982). The U.S. Fish and Wildlife Service has not yet defined a recovery zone for the gray wolf.
- # The proposal is not near optimum habitat for either species, as identified in the Alpine Lakes Wilderness Area (Wenatchee National Forest 1997, USFS/USFWS 1997).

Peregrine Falcon. Peregrine falcons are most sensitive at nest sites, which may be affected by activities that occur within a 0.4-0.8 km (0.25-0.5 mile) radius (Olsen and Olsen 1980). No known nest sites are located within this distance from where disturbance would take place. The Columbia River area is the only area that contains such suitable habitat within this distance. The Snoqualmie Pass area contains potential peregrine nest habitat, but not within this distance (USFS/USFWS 1997).

The project area would not cross any reported winter use or foraging areas for peregrine falcon. The Columbia River area contains suitable habitat, and essentially the entire alignment could be used occasionally by peregrine falcons, either as part of much larger foraging territories or as rest-over habitat during migration.

Other Special-Status Wildlife Species and Habitats. In addition to wildlife species and habitats protected under the ESA, the USFS, USFWS, and WDFW identify other wildlife species and habitats that they consider important to protect, including:

- # USFS sensitive species;
- # USFWS Species of Special Concern (formally classified as candidate species);
- # USFS survey and manage@ species, which are those species for which the USFS directives are to survey for and then manage as part of planning for ground disturbing activities under the Northwest Forest Plan ROD (USFS/BLM 1994);
- # USFS management indicator species, as identified in the Mt. Baker-Snoqualmie and Wenatchee National Forest Land and Resource Management Plans (USFS 1990a, 1990b); and
- # priority habitats, as defined and designated by the WDFW.

With the exception of survey and manage species, which must be addressed for all land-disturbing activities on BLM or USFS lands, the designation of these species is largely advisory, with no specific regulatory authority. For simplicity, this EIS refers to all of these species collectively as "sensitive." Table 3.5-2 lists sensitive species evaluated but found not to be significant elements of the affected environment, while Table 3.5-3 lists sensitive species that are part of the affected environment to be addressed in this EIS because they are likely to be present in the vicinity of the proposal. The following section discusses WDFW-designated priority habitats along the pipeline corridor.

Priority Habitats. Priority habitat types are those that the WDFW has determined to be important to many species, and include the habitat types of highest value to wildlife within the project area, including habitats on private and public lands. The WDFW provides definitions of these priority habitat types (WDFW 1996) and maps areas where these habitats are known to occur. WDFW designation of an area as a priority habitat type is advisory only, and carries no legal protection, although such designation may increase the significance of impacts, as evaluated through SEPA and/or NEPA. The following paragraphs detail priority habitats addressed in this EIS.

Shrub-Steppe. Shrub-steppe is the predominant native habitat type from approximately Ellensburg to Pasco; however, large-scale conversion to cropland and rangeland has left only about 5 percent of the historic extent of shrub-steppe in relatively undisturbed condition. The WDFW considers undisturbed shrub-steppe habitat as a priority habitat type because of its limited occurrence and habitat features important to wildlife species (WDFW 1996).

While undisturbed shrub-steppe habitat is very rare, moderately disturbed shrub-steppe communities are fairly common, being impacted to various degrees from grazing, weed infestations, and other disturbances. Most (about 74 percent) of the shrub-steppe habitat crossed by the pipeline corridor has been substantially disturbed, with non-native grasses (e.g., cheatgrass and bulbous bluegrass) being equal or greater in distribution than native grasses (e.g., bluebunch wheatgrass and Idaho fescue). This habitat can still provide cover and food for many types of wildlife, but it does not constitute a high-quality shrub-steppe community and is not likely to support many of the species that depend on healthy shrub-steppe communities (e.g., sage thrasher, loggerhead shrike).

As described in Section 3.3, Botanical Resources, the pipeline corridor would cross only one area of relatively undisturbed shrub-steppe, located on the eastern slopes above the Columbia River. This area, which the pipeline would cross for approximately 457 m (1,500 feet), is dominated by native grasses and sagebrush with an intact cryptogam crust (a thin layer of moss and lichen that indicates an undisturbed community).

About 26 percent of the shrub-steppe habitat within the pipeline corridor contains mostly native shrubs (e.g., big sagebrush and bitterbrush) with a predominantly native grass understory. This habitat type, while previously disturbed by grazing, off-road vehicle use, and other disturbances, still provides cover, food, and nesting habitat for many species of wildlife. The importance of these areas is enhanced by the overall lack of vegetative cover during winter within the cultivated fields that are common in the area. Some of these shrub-steppe areas are likely to provide important wintering habitat for resident wildlife, including game species, such as pheasant and chuckar, as well as native mammals and birds.

Table 3.5-2. Sensitive Animal Species that Are Not Significant Elements of the Affected Environment for the Proposed Pipeline Project

Species	Status	Key Habitats and/or Decision Factors	Reason Why Not Considered Significant Element of the Environment
lynx (<i>Lynx canadensis</i>)	FSS, SpC, ST	Protection and management of core habitats and areas of regular occurrence, which, in Washington, are limited to lodgepole pine forest in the Okanogan area (Rodrick and Milner 1991).	Project area outside the core range of lynx (Rodrick and Milner 1991). Absent or rare pass-through use due to lack of habitat and known populations.
mountain goat (<i>Oreamnos americanus</i>)	MBS, MIS	Protection of winter range and "kidding" areas. Steep mountainous terrain supporting herbaceous and woody vegetation (Wigal and Coggins 1982).	Present at high elevations outside of project area.
California wolverine (<i>Gulo gulo luteus</i>)	FSS, SpC	Neonatal areas key management concern. A habitat generalist, requires large areas away from roads and human disturbances (Banci 1994).	Project area is too developed to provide key habitat. No neonatal habitat identified in the project area. Either absent or rare pass-through use as part of vast territory. Most likely use area is in the Alpine Lakes Wilderness and within higher elevation roadless areas.
common loon (<i>Gavia immer</i>)	FSS	Protection of breeding sites, which are exceedingly rare. These occur in large lakes with minimal human disturbance (Rodrick and Milner 1991).	Foraging individuals occasionally present in larger lakes and rivers, particularly Keechelus Lake and the Columbia River. Breeding absent due to lack of large lakes with minimal human disturbance in project area.
Pacific fisher (<i>Martes pennanti pacifica</i>)	SpC, SC,	Requires extensive forest stands with contiguous canopy (Powell 1981). Major concern is large-scale habitat alteration (e.g., timber harvest within a subwatershed).	Potential pass-through or foraging use, although habitat is generally unsuitable due to openness of cleared corridor. New corridor areas may be part of much larger home ranges.
Larch Mountain salamander (<i>Plethodon larselli</i>)	ROD	Protection of talus and/or old-growth forest. Requires loosely consolidated substrate for burrowing.	Absent, as determined by direct surveys of potential habitat (Dames & Moore 1997a).
Van Dyke's salamander (<i>Plethodon vandykei</i>)	ROD	Protection of all habitat, which includes mostly splash zones of streams.	Absent, as determined by direct surveys of potential habitat (Dames & Moore 1997a).
long-legged myotis (<i>Myotis volans</i>)	SpC, SC	Protection of breeding habitat. Widespread within a wide range of habitats (Barbour and Davis 1969). Breeds in caves, abandoned mine tunnels, and attics.	Potential foraging. Breeding unlikely due to lack of required cave habitat.
Pacific western big-eared bat (<i>Plecotus townsendii townsendii</i>)	SpC, SC, FSS	Protection of caves, buildings, and mineshafts used for roosting and breeding (Christy and West 1993).	No key habitat present, although the species could forage within pipeline corridor. Snoqualmie Pass Tunnel

Table 3.5-2. Sensitive Animal Species that Are Not Significant Elements of the Affected Environment for the Proposed Pipeline Project

Species	Status	Key Habitats and/or Decision Factors	Reason Why Not Considered Significant Element of the Environment
			receives too much human disturbance to be considered habitat.
white-headed woodpecker (<i>Picoides albolarvatus</i>)	SC	Protection of breeding areas. Requires old-growth ponderosa pine and/or lodgepole pine forests.	No key habitat present within areas that would be disturbed.
black-backed woodpecker (<i>Picoides arcticus</i>)	SC	Protection of breeding areas. Requires old-growth ponderosa pine and/or lodgepole pine forests.	No key habitat present within areas that would be disturbed.
Columbian sharp-tailed grouse (<i>Tympanuchus phasianellus columbianus</i>)	SC	Protection of breeding areas, regular occurrence.	Project outside of species' range (Yocom 1952, Hofmann and Dobler 1988), although occasional use near the YTC may be possible. Such use is considered minor and not likely to be significantly affected by short-term disturbance or habitat modifications.
Great gray owl (<i>Strix nebulosa</i>)	ROD	Protection of nest sites.	Project outside of known nesting population's range. No reports of nesting anywhere near the project.
western sage grouse (<i>Centrocercus urophasianus phaios</i>)	SpC, SC	Protection of breeding areas, regular occurrence.	Present at YTC, but project is north of species' range (Cadwell et al. 1994).
Vaux's swift (<i>Chaetura vauxi</i>)	MBS	Protection of nest trees. Requires large, hollow trees for roosting and nesting (Rodrick and Milner 1991).	Likely foraging use, but otherwise absent due to lack of large, hollow trees within pipeline corridor.

Notes:

- FSS = Forest Service Sensitive Species
- SpC = U.S. Fish and Wildlife Species of Concern
- SM = Survey and Manage
- MBS = Mt. Baker - Snoqualmie National Forest Sensitive Species
- MIS = Management Indicator Species
- SC = State Candidate
- ST = State Threatened
- ROD = Survey and Manage Species Identified in the ROD for the Northwest Forest Plan (USFS/BLM 1994)

Table 3.5-3. Sensitive Animal Species Likely Present in the Vicinity of the Proposed Pipeline Project

Species	Status	Key Habitats and/or Decision Factors	Potential for Using Specific Areas Proposed for Development
Cascades frog (<i>Rana cascadae</i>)	SpC	Any occurrence. Edges of seeps and other wetlands (Leonard et al. 1993). Highly aquatic species.	Present within seeps, springs, ponds and other wetlands and riparian areas on USFS lands.
Spotted frog (<i>Rana pretiosa</i>)	SpC	Breeding areas (wetlands)	Present in the Cascades east of the Cascade Crest.
western toad (<i>Bufo boreas</i>)	SpC	Breeding areas (wetlands)	Present in forested areas of project.
northern leopard frog (<i>Rana pipiens</i>)	SC	Breeding areas, including wetlands, ponds, and associated riparian areas.	May be present in lower Crab Creek area.
northern reg legged frog (<i>Rana aurora</i>)	SC	Breeding areas (wetlands)	Present in forested areas of project.
northern goshawk (<i>Accipiter gentilis</i>)	SpC, SC MBS	Nest sites and related foraging habitat. Generally found in large stands of multi-layered, old-growth forest containing small openings (Reynolds et al. 1992).	Present throughout forested portions of the project area, especially on USFS lands.
osprey (<i>Pandion haliaetus</i>)	PHS	Nest sites and primary foraging areas. Almost always found near fish-bearing water (Rodrick and Milner 1991).	Known nest sites present south of Keechelus Lake, approximately 400 m (0.25 mile) from pipeline corridor
prairie falcon (<i>Falco mexicanus</i>)	PHS	Nest sites. Typically found on cliffs (Johnsgard).	Known nest sites present near Swauk Creek Valley and near the Columbia River crossing area.
ferruginous hawk (<i>Buteo regalis</i>)	ST	Protection of nest sites, which are typically in basalt outcrops within open prairie.	Foraging habitat present, but no known nests within affected environment. Closest historic nest site is 1.6 km (1 mile), reported in 1988 (Dames & Moore 1997a). Other nests may be present.
burrowing owl (<i>Athene cunicularia</i>)	SC	Nest burrows. Inhabit dry open areas.	Known nest sites present near Vantage (north of I-90 route alternative), near Royal City, and about midway between Royal City and Pasco. Closest known burrow is 156 m (513 feet) from pipeline corridor. Others possible.
flamulated owl (<i>Otus flammeolus</i>)	SC	Requires open, mature ponderosa pine forests with open canopies.	No known nests sites in vicinity of the project, but potential habitat exists in Kittitas County.
sandhill crane (<i>Grus canadensis</i>)	SE	Nest sites, regular large concentrations, migration staging areas.	Project would cross major spring and fall staging area in the Lower Crab Creek Valley, where large flocks congregate to feed, rest, and seek shelter on their way to and from breeding and wintering areas.
long-billed curlew (<i>Numenius americanus</i>)	PHS	Breeding areas and regular concentrations in spring and summer.	Present in vicinity of project from Vantage to Pasco. Potential breeding may occur near proposed construction route.
loggerhead shrike (<i>Lanius ludovicianus</i>)	SC	Breeding areas and regular concentrations. Uses shrub-steppe habitats.	Nesting may occur in shrub habitat from Ellensburg to Pasco.
sage sparrow (<i>Amphispiza belli</i>)	SC	Breeding areas. Sagebrush obligates.	May be present in sagebrush communities.
sage thrasher (<i>Oreoscoptes montanus</i>)	SC	Breeding areas. Sagebrush obligates.	May be present in sagebrush communities.
sharptailed snake (<i>contia tenuis</i>)	PHS	Forested areas near streams	May be present in the Cle Elum area.

Table 3.5-3. Sensitive Animal Species Likely Present in the Vicinity of the Proposed Pipeline Project

Species	Status	Key Habitats and/or Decision Factors	Potential for Using Specific Areas Proposed for Development
striped whipsnake (<i>Masticophis taeniatus</i>)	SC	Any occurrence. Hibernation sites most vulnerable to disturbance.	Present along Columbia River area.
night snake (<i>Hypsiglena torquata</i>)	PHS	Any occurrence. Hibernation sites most vulnerable to disturbance.	Present along Columbia River area.
Washington ground squirrel (<i>Spermophilus washingtoni</i>)	SC	Regular large concentrations.	Known near the project in the Saddle Mountains area, north of the proposed Othello Pump Station. Possible anywhere between Vantage and Pasco.
olive-sided flycatcher (<i>Cantopus borealis</i>)	SpC	Breeding areas. Montane and northern coniferous forest with low percentage canopy cover (USFS 1991).	Present throughout forested portions of the project area.
turkey vulture (<i>Cathartes aura</i>)	PHS	Nest sites	Present throughout project area but most common in Clear Elum area. Nest near the South Cle Elum Ridge (700 m [2,296 feet] distant).
Swainson's hawk (<i>Buteo swainsoni</i>)	PHS	Nest sites. Uses isolated trees in open country.	Present from Cle Elum east. A nest east of Ellensburg (478 m [1,569 feet] distant).
tailed frog (<i>Ascaphus truei</i>)	SpC	Turbulent mountain streams (Leonard et al. 1993).	Documented near Keechelus Lake (Cold and Mosquito Creeks and near an unnamed creek at crossing 103). Assumed present in and near all stream crossings within the MBS and Wenatchee National Forests.
harlequin duck (<i>Histrionicus histrionicus</i>)	MBS, PHS, FSS	Clear, clean, swiftly flowing second to fifth order streams (Leonard et al 1993).	Presumed present. Project crosses over 50 streams with potential habitat, although few if any of these are likely to actually support breeding pairs, especially at the point of intersection (based on probability).
pileated woodpecker (<i>Dryocopus pileatus</i>)	MBS,MI S, SC	Mature forests with large amounts of snags and downed woody material (Bull 1987).	Present in habitats adjacent to pipeline corridor but little use within corridor due to lack of mature timber.

Notes:

- FSS = Forest Service Sensitive Species
- SpC = U.S. Fish and Wildlife Species of Concern
- SM = Survey and Manage
- MBS = Mt. Baker - Snoqualmie National Forest Sensitive Species
- MIS = Management Indicator Species
- SC = State Candidate
- ST = State Threatened
- PHS = General WDFW Priority Species
- SE = State Endangered

Cliff. Cliffs provide secure habitat for nesting hawks and falcons as well as a variety of other wildlife, such as lizards, snakes, and upland game birds (e.g., chuckar). These areas provide important refuges for wildlife, in part because the steep terrain limits human and predator access. Both sides of the Columbia River contain cliffs that have been mapped by WDFW as priority habitats.

Riparian. Riparian habitat consists of vegetation along streams and rivers. These areas provide cover, food, water, and breeding habitat for many wildlife species. Because of the wet climate in western Washington, riparian habitat is often indistinguishable from undisturbed upland

habitat. However, where logging or development has removed upland habitats, forested riparian strips can become refuges and travel corridors for wildlife.

In the much drier eastern Washington, shrubby thickets and forest groves within riparian areas often contrast sharply with dry, grass and/or cropland dominated uplands. Breeding birds and other wildlife depend on the shelter, water, and food provided by these riparian habitats.

The pipeline corridor would cross many riparian areas along streams and rivers. Many of the larger streams and rivers include floodplains supporting cottonwoods, willows, alders, and a dense assortment of shrubs. Examples include the shorelines of the Tolt, Snoqualmie, and Yakima Rivers, as well as many smaller streams. These areas typically support healthy populations of birds, mammals, and amphibians. Section 3.7, Fisheries, contains additional information regarding riparian habitat.

Wetlands. Wetlands provide habitat for many types of wildlife, some of which depend on wetlands for some or all of their life requirements, such as amphibians, waterfowl, and several species of wetland-obligate birds. The pipeline corridor crosses many wetlands, as detailed in Section 3.4, Wetlands. Wetlands are common in the Snoqualmie Valley, where they provide habitat for nesting waterfowl and other birds. Wetlands are also common in the lower Crab Creek area, where many ponds and larger wetlands are major nesting and brood rearing areas for waterfowl.

Woody Cover. East of the location for the proposed Beverly-Burke Pump Station, the pipeline corridor would cross several draws containing thickets of greasewood and other shrubs that provide important breeding and shelter habitat for pheasants and other wildlife.

Natural Open Space. Natural open spaces are remnant patches of wildlife habitats left within areas that have been mostly developed, either by urban development or by agriculture. These areas provide refuge to many species that would not otherwise be present. The pipeline corridor would cross three areas designated as Natural Open Space: a forested hillside near the Tolt River, a habitat patch near Lower Babcock Ridge, and another habitat patch along the Snake River near the Northwest Terminalling Facility at Pasco.

Oak Woodland. Oak woodlands have always been rare in Washington, and support some species that are equally rare. The pipeline corridor would require cutting some trees in an oak woodland in the Swauk Creek area.

Old-Growth/Mature Forests (Late-Successional Forest). Many animal species require old-growth or mature forests, including several species of woodpeckers and owls, salamanders, bats, and furbearers (e.g., marten, mink). No old-growth forest is within areas that would be cleared, although patches of old-growth and/or mature forest are present in the general vicinity of the pipeline corridor throughout most USFS lands, including near Tinkham Road, Snoqualmie Pass, and near Keechelus Lake; however, much of the timber in the Upper Yakima Watershed has been previously harvested (USFS/USFWS 1997) and most old-growth anywhere near the pipeline corridor is present in the Cle Elum Watershed and north of the pipeline corridor within the Alpine Lakes Wilderness Area.

3.5.1.2 General Wildlife Species and Habitats (Not Considered to be Special-Status)

General Habitat Types. The pipeline corridor crosses a wide range of habitat types, as described in Section 3.3. Table 3.5-4 describes these habitat types, in order of abundance within the pipeline corridor, along with typical wildlife species associated with them. Section 3.3, Botanical Resources, contains more information regarding plant communities. See also the Dames & Moore (1997b) vegetation technical report.

Table 3.5-4. General Habitat Types and Examples of Typical Common Wildlife Species within Proposed Pipeline Corridor

Plant Community	Approx. % of Corridor	Examples of Typical Common Wildlife Species
shrub-steppe	41	western skink, Say's phoebe, red-tailed hawk, northern harrier, common raven, chukar, great basin pocket mouse, bushy-tailed woodrat, Nuttall's cottontail, northern pocket gopher, yellow-bellied marmot, badger, mule deer
agricultural areas (cropland, hay/pasture, grass/forb)	33	European starling, Brewer's black-bird, brown-headed cowbird, ring-necked pheasant, gray partridge, horned lark, killdeer, northern flicker, red-tailed hawk, northern harrier, American kestrel, black-billed magpie, coyote, striped skunk, deer mouse
scrub-shrub (shrubby plant communities, usually within maintained rights-of-way or recently harvested forest)	16	western fence lizard, northwestern garter snake, dark-eyed junco, song sparrow, mountain beaver, Townsend's mole, Townsend's vole, vagrant shrew, eastern cottontail
coniferous forest, west of the Cascade Crest	3	northwestern salamander, Pacific treefrog, chestnut-backed chickadee, bushtit, brown creeper, red-breasted nuthatch, varied thrush, bobcat, Douglas= squirrel, black bear
coniferous forest, east of the Cascade Crest	<1	common raven, hairy woodpecker, Clark's nutcracker, white-breasted nuthatch, chipping sparrow, Cassin's finch, yellow-pine chipmunk, porcupine, elk
deciduous/mixed forest, west of the Cascade Crest	<1	American robin, American/northwestern crow, Stellar's jay, black-capped chickadee, winter wren, downy woodpecker, western screech owl, ruffed grouse, racoon, eastern gray squirrel, black-tailed deer
vegetated urban/developed areas	1	white-crowned sparrow, American robin, European starling, Norway rat, deer mouse

General Wildlife Species Groups - Birds

Raptors. Raptors, which include hawks, falcons, owls, eagles, and vultures, are important species in that (1) they are protected under the Migratory Bird Treaty Act, (2) they are very visible to the public, and (3) people tend to highly regard raptors; they enjoy and appreciate seeing them and are often concerned about raptors being harmed by human activities, especially disturbance of nest sites.

Swainson's hawk, bald eagle, peregrine falcon, osprey, ferruginous hawk, prairie falcon, and turkey vulture are special-status species. Other raptors that may nest and/or feed within the vicinity of the proposal include red-tailed hawk, northern harrier, sharp-shinned hawk, Cooper's hawk, American kestrel, great horned owl, pygmy owl, saw-whet owl, and barn owl.

Cavity-Nesting Birds. Cavity-nesting birds nest within tree holes. Examples include woodpeckers, American kestrel, red-breasted nuthatch, western flycatcher, and black-capped chickadee. These species generally require large-diameter trees (generally greater than 30 cm [12 inches]). Most of the pipeline corridor does not contain habitat for cavity-nesting birds, although any of the forest types may contain some suitable nesting trees. In the arid portions of eastern Washington, cavity-nesting species may use old telephone poles or even fence posts as nest sites.

General Wildlife Species Groups - Mammals

Deer and Elk. Deer and elk occur throughout the project area. Important winter ranges occur at three areas identified by the WDFW: (1) the Taneum elk winter range west of the Yakima River crossing, (2) the Ellensburg mule deer winter ranges from the Yakima River crossing to about 24 km (15 miles) east, and (3) the Quilomene mule deer winter ranges from the pipeline corridor near Ryegrass Pass to east of the Columbia River crossing.

Deer and elk winter range are important because (1) deer and elk provide important recreational opportunities to people (e.g., hunting and wildlife observation) and are also a high public profile species, (2) winter range is often very limited due to development within lower elevation areas, and (3) the availability of winter range is a major factor in determining population levels, because most natural mortality occurs during winter (Thomas and Towell 1982, Wallmo 1981). Protection of winter range is most critical during severe winters, when deer and elk have low energy reserves and cannot afford to expend energy to flee from disturbances.

Large Carnivores/Omnivores. This species group includes American marten, fisher, and Canada lynx (fisher and Canada lynx are also classified as sensitive species. See Tables 3.5-2 and 3.5-3.). American martens are fairly common in the Snoqualmie Pass area and are likely to occur within the project area anywhere within USFS lands, although they are most likely to occur within old-growth forest types. Fishers are much more closely tied to late-successional forests than martens and, due to the relative lack of such forests near the project area, are expected to occur relatively infrequently. Lynx are essentially absent from the project area and may have never been present in large numbers. Individual lynx may occasionally pass through the project area, but with such infrequency as to be considered absent from the affected environment.

Small Mammals. Many species of shrews, mice, voles, and moles are present within the affected environment. While small and often unnoticed by people, these species are often

the most abundant wildlife within a given habitat, including early-successional habitats present within much of the project area.

Burrowing Mammals. Burrowing mammals such as northern pocket gopher and ground squirrels are known to occur in the Columbia Basin. Northern pocket gophers are plentiful throughout the region and are likely present throughout most of the proposal area from Ellensburg east. Badgers are closely associated with burrowing mammals and are an important wildlife component of shrub-steppe and agricultural lands. Because burrowing animals usually require deep loose soil, areas containing deeper soils are the most suitable habitat for these species.

Bats. Many species of bats may be present within the project vicinity, including big brown bat, little brown bat, silvery-haired bat, yuma myotis, and California myotis. These bats breed and roost in trees, caves, or other habitats that provide shelter and relatively stable temperatures. No caves are known to be present near the pipeline corridor, and the forest communities that would be crossed are generally too young to provide the mature trees typically used by these species. However, bats could roost or breed within the cliff habitats near the Columbia River or possibly in the Snoqualmie Tunnel in the summer, although human use of the tunnel reduces the possibility.

Wildlife Travel Corridors. The Northwest Forest Plan identified the Snoqualmie Pass area as an important north-south travel corridor for wildlife, although current conditions greatly compromise this corridor. Recreational developments, logging, and I-90, as well as the barriers created by Cle Elum, Kachess, and Keechelus Lakes, create barriers to north-south movements. The project crosses the Snoqualmie Pass Adaptive Management Area where the USFS has proposed numerous actions to enhance north-south connections with a major emphasis on restoring old-growth forest.

3.5.2 Environmental Consequences

3.5.2.1 Proposed Petroleum Product Pipeline

Most impacts on wildlife would occur during construction. Impacts would include direct loss of habitat, temporary disturbance of habitat, disturbance caused by project noise and activities, and potentially direct mortality during construction. With ardent revegetation efforts, the direct loss of habitat could be greatly mitigated, potentially enhancing wildlife habitat values in some areas where existing vegetation is sparse or dominated by non-native species, such as within degraded shrub-steppe communities located on the eastern portion of the corridor.

Construction Impacts - Overall Proposal

Threatened, Endangered, and Other Sensitive Species and Habitats. Overall, the proposal would have minor to negligible impacts on species listed under the ESA because no regular use areas or currently suitable key habitats (e.g., primary breeding, feeding, or shelter areas) would be disturbed.

Should blasting be used as part of project construction, then northern spotted owl, marbled murrelet, and other sensitive species may be disturbed beyond the 0.4 km (0.25 mile) range. Timing restrictions would serve to minimize this impact, as described in the mitigation section.

The proposal would require removing habitat that may meet the definition of designated critical habitat for northern spotted owl and/or marbled murrelet. The habitat that would be removed is not currently suitable for these species, and this impact could be mitigated by improving habitat or by other measures identified through informal consultation between the USFS and the USFWS, as required under the ESA.

Some sensitive wildlife species and habitats (i.e., those species of concern to the agencies but not protected under the ESA) would be impacted through habitat removal and temporary disturbance during construction. Impacts would be limited to the site of action, with negligible effects on local or regional populations. In other words, the proposal may impact individuals of species considered sensitive, but it is not likely to trend toward federal listing or loss of viable populations.

Northern Spotted Owl and Marbled Murrelet. Northern spotted owl and marbled murrelet nest sites would not be disturbed because:

- # Construction would not take place within 0.4 km (0.25 mile) of nest sites or suitable nesting habitat during the nesting period unless approved by the USFWS (with U.S. Fish and Wildlife Service concurrence) as having no effect on spotted owls, on a case-by-case basis (see mitigation section).
- # No nest sites or habitat suitable for nesting would be removed or otherwise altered (Dames & Moore 1997a).

The proposal would remove 0.74 ha (1.82 acres) of approximately 40-year-old western hemlock forest that may meet the definition of designated critical habitat for marbled murrelet. The impact would occur within an approximate 0.8 km by 9.1 m (0.5-mile by 30-foot) new corridor between the Annette Lake Trailhead area and the John Wayne Trail. While currently unsuitable for marbled murrelet nesting (using definitions identified in Hamer [1995]), this forest may meet the criteria of designated critical habitat due to the possible presence of: (1) forests with a canopy height of at least one-half the site-potential tree height within the pipeline corridor, and (2) potential nesting trees within 0.8 km (0.5 mile) of the pipeline corridor (as defined in the final rule for marbled murrelet critical habitat designation, 50 CFR Part 17 [Federal Register, May 26, 1996]).

The USFS will determine whether or not this habitat meets the definition through informal consultation with the USFWS under Section 7 of the ESA. Because the forest that would be disturbed is young and may not meet the minimum one-half site-potential tree height to qualify as critical habitat, it is reasonable to assume that this impact is not likely to affect designated critical habitat and could be readily mitigated through habitat improvements or other measures identified through informal consultation. However, maintenance of the 9.1 m (30-foot) corridor would preclude the future development of the 0.74 ha (1.82 acres) area into suitable habitat. Nevertheless, with mitigation, this impact would be negligible (see the mitigation section).

This same area between the Annette Lake Trailhead and the John Wayne Trail is within designated critical habitat for northern spotted owl. Because only immature trees (which provide little or no current habitat value for northern spotted owl) would be removed, immediate impacts would be minimal. However, over the long term, the 9.1 m (30-foot) maintenance corridor be maintained may reduce the value of the CHUs that would be crossed, including potentially increasing risk of predation to northern spotted owls using the area, once habitat in the surrounding forest becomes suitable. Northern spotted owls are believed to be vulnerable to predation from great horned owls, which often occur along roads and other cleared ROWs, such as would occur with the project.

As described in the mitigation section, the value reduction of the CHUs could likely be offset by silvicultural prescriptions or other actions that may improve habitat values elsewhere within the CHUs, which could result in a net gain in habitat value within the CHUs. As is the case with designated critical habitat for marbled murrelet, this determination must be made through the ESA rather than through NEPA, since the USFWS must concur with the determination.

For impact disclosure and decisionmaking under NEPA, the permanent loss of habitat within the 30-foot-wide corridor is considered major without mitigation, since the impact may result in a significant adverse modification of designated critical habitat. With mitigation, the impact would be considered moderate. The actual damage of about 0.74 ha (1.82 acres) represents a small portion of a northern spotted owl's territory (territories are generally between 809 ha [2,000 acres] and 2,024 ha [5,000 acres] in size). Because of this, this damage would not likely affect viable populations of northern spotted owls either locally (i.e., within the CHUs) or within the population. However, as stated earlier, creation of a 30-foot-wide gap in habitat would result in a moderate increase in risk of predation to northern spotted owls that should eventually use this area.

Bald Eagle. No bald eagle nests would be disturbed because the proposal would not be within the 0.8 km (0.5-mile) maximum buffer recommended to protect bald eagle nests from disturbance (Rodrick and Milner 1991). Wintering bald eagles may be disturbed if work is conducted within 100 m (328 feet) of major water bodies from November 1 through March 15. These areas include the Snoqualmie River Valley, Tolt River, South Fork Snoqualmie River, Keechelus Lake, Yakima River, Columbia River, and lower Crab Creek. Timing restrictions and/or avoidance strategies recommended in the mitigation section would avoid these impacts.

The proposal may require the removal of potential perch trees along the Tolt and Yakima Rivers. This impact would be minor because perch trees in the areas that would be affected are relatively common, and the potential loss of these trees is not expected to substantially interfere with the ability of wintering bald eagles to feed or seek shelter. However, due to the federal threatened status of bald eagles, specific mitigation is recommended in the mitigation section to minimize this potential impact.

Construction activities, if conducted between November 1 and March 15 of any given year, may disperse waterfowl concentrations near the Columbia River. Waterfowl are an important food stock of bald eagles in the area. This impact is considered minor because the disturbance would be temporary and waterfowl are expected to continue to stay in the vicinity, with no notable reduction in bald eagle feeding abilities. Potentially, waterfowl disturbed by construction may be more vulnerable to capture by bald eagles, thereby increasing feeding ability, but this effect would likely

be negligible, again because the impact would be temporary. Construction may not even occur during winter in this area, in which case construction of the pipeline would have no effect on wintering bald eagles along the Columbia River.

Gray Wolf and Grizzly Bear. Construction is not likely to adversely affect gray wolf or grizzly bear because these species are not substantial elements of the affected environment. The proposal would not increase human presence or disturb habitat, in the context of the existing and past level of disturbance caused by I-90, recreation, and forestry. While individual grizzly bears or gray wolves could possibly wander into the area during construction and then be frightened off, the significance of such an event is minor because the impact would be temporary, would affect a transient individual, and would occur where existing human activities preclude the area from being an important use area.

Peregrine Falcon. Cliffs above the Columbia River contain potential peregrine falcon nest sites, although none have been reported there. Crossings and construction within any of the crossing options would disturb potential habitat. If construction occurred between February and July of any given year, then any nest sites present could be disturbed. Clearance surveys for peregrine falcon and other raptors would fully mitigate this potential impact (see mitigation section). The proposal would not cross any peregrine falcon nesting areas outside of the Columbia River zone, so no other impacts to peregrine falcon nest habitat would occur during construction.

No peregrine falcon foraging area would be significantly disturbed. Potentially, migrant and/or foraging peregrine falcons may be disturbed during construction, but such disturbance would be negligible, since peregrine falcons are very wide ranging and impacts would occur in a small area at any one time. No estuaries or mudflats (the preferred foraging areas of peregrine falcon in Washington) would be disturbed.

Sensitive Species. Several sensitive species may be impacted during construction. Impacts could include direct loss of nests or dens, disturbance of nest sites or dens leading to abandonment or reduced productivity, temporary displacement, and temporary and/or permanent habitat loss.

Should construction take place during the nesting season of sensitive species (generally April 1 through July 15 of any given year), then nest and/or den sites of sensitive and other species could be directly lost. This impact would not occur within the 45 km (28 miles) that would be constructed within existing roads or trails. Impacting nests would be considered a major impact because most birds are protected under the Migratory Bird Treaty Act and, therefore, are legally protected from ~~Atake,~~ which includes destroying nests or eggs. This impact can be avoided by timing restrictions and/or clearance surveys, as described in the mitigation section.

Specific examples of sensitive species that could be disturbed include:

- # Northern goshawks have been documented near Tinkham Road. Suitable habitat occurs near the pipeline corridor throughout USFS lands. No nesting habitat would be removed, but construction could lead to disturbance and/or reduced productivity of northern goshawks nesting nearby (within approximately 100 m [328 feet]). Impacts could be

avoided by conducting clearance surveys and applying appropriate timing restrictions (see the mitigation section).

- # Without mitigation, nesting prairie falcon, ferruginous hawk, and other raptors could be impacted during construction. Most impacts would be limited to disturbance, rather than direct removal of nest sites. Impacts could be avoided by conducting clearance surveys and applying appropriate timing restrictions (see the mitigation section).
- # Burrowing owls exist in the eastern portion of the project area, from approximately Kittitas to Pasco. Construction between March 15 and August 15 of any given year could disturb nesting burrowing owls and potentially destroy nesting burrows because complete inventories have not been recently conducted in the area. Disturbance during construction could be avoided through clearance surveys and timing restrictions, as described in the mitigation section.
- # Long-billed curlews nest throughout the Columbia River Basin and may nest within or near the area proposed for construction. Disturbance during construction could be avoided through clearance surveys and timing restrictions, as described in the mitigation section.
- # Sandhill cranes may be temporarily disturbed during construction in areas mapped by the WDFW as sandhill crane staging areas, should construction take place during the spring (early March through mid-May) and fall (mid-September to early November) migration period. Disturbance during construction could be avoided through timing restrictions, as described in the mitigation section.

Other known raptor nests near the proposal would not be disturbed because they are sufficiently far from where construction would occur. These include an osprey nest near Keechelus Lake (377 m [1,237 feet] distant), a turkey vulture nest near the South Cle Elum Ridge (700 m [2,296 feet] distant), and a Swainson's hawk nest east of Ellensburg (478 m [1,569 feet] distant).

Sensitive wildlife other than birds could be disturbed as well:

- # Tailed frogs have been found near streams feeding Keechelus Lake and are assumed present on stream crossings 44 to 134, which are the rivers and streams with the cold, turbulent water favored by this species. In addition, Cascades frogs exist in and near wetlands and streams in the same vicinity. Crossing could cause temporary disturbance and some incidental mortality to these species; however, the overall effect of construction would be minor because only a minor fraction of habitat would be disturbed and the impacts would be temporary. Clearance surveys, as indicated in the mitigation section, would minimize potential mortality.
- # Night snake and striped whipsnake occur near the Columbia River crossing. In addition, the pipeline corridor crosses habitat identified by the WDFW as important snake habitat on the eastern side of the Columbia River. The shrub-steppe habitat type identified as sagebrush/spiny hopsage/grasses by Dames & Moore (1997b) is also likely habitat for

these species. The primary impact that could occur to these species, as well as other species, would be disturbance of hibernacula, which are dens where snakes communally gather over winter. However, the likelihood of this impact is low because hibernacula are generally widely dispersed. Risks of disturbance could be minimized through timing restrictions and/or clearance surveys conducted in coordination with the WDFW (see mitigation section). Habitat loss and disturbance would be minimal because the proposal would not substantially alter key habitat components for these species.

- # Washington ground squirrels occur in open grassland habitats from Vantage south to Pasco. Impacts cannot be avoided, although surveys of shrub-steppe and grassland areas containing burrows could be effective in identifying areas to avoid. Timing restrictions would be difficult for Washington ground squirrel. The species is generally either below ground and inactive, where they would be vulnerable to direct mortality during construction, or else they are breeding where breeding dens would be vulnerable to disturbance. Mitigation should be identified in cooperation with the WDFW (see mitigation section).

Priority Habitats. Construction would result in a moderate impact on shrub-steppe habitats. Approximately 0.8 ha (2 acres) of high-quality shrub-steppe habitat along the steep banks on the east side of the Columbia River would be impacted. No areas mapped as priority shrub-steppe habitat by the WDFW would be affected. In addition, because of the disturbed condition of 74 percent of the shrub-steppe habitats to be removed, most would not meet the WDFW definition of priority shrub-steppe habitat.

Cliff habitat along both sides of the Columbia River would be affected during construction. The impact is expected to be minor, in terms of actual habitat loss, because the linear path required by the proposal would take up only a very small fraction of available habitat and the resulting habitat within the pipeline corridor would likely provide habitat value similar to pre-project conditions. As with all habitats, construction within cliff areas during the breeding season could impact breeding wildlife, including nesting hawks and owls. This impact could be avoided by conducting clearance surveys and applying timing restrictions as necessary to prevent incidental disturbance of nest sites (see mitigation section).

Riparian habitat would be cleared in 9.1 m (30-foot) swaths at most stream crossings. The loss would be most notable in areas where riparian habitat contrasts sharply with adjacent upland habitats, such as where logging has removed adjacent forest or, as in many eastern Washington areas, riparian areas provide shrubby cover that contrasts sharply with the dry grassland and cropland of adjacent uplands. In these areas, more wildlife species depend on the riparian habitat for food, shelter, and breeding habitat, since adjacent uplands may lack key habitat requirements. Clearing and trenching across streams could expose soils to moving water, thereby eroding streambanks and jeopardizing restoration efforts. Mitigation measures for water resources and quality (Section 3.6) would serve to minimize this impact. While food, cover, and nesting habitat would take up to 50 years to replace, riparian habitat values would likely return within a few years of clearing, assuming that banks would remain stable. Overall, the impact on riparian habitat is considered moderate, because (1) it is considered an important habitat type, (2) only a small portion of any one

riparian area would be removed, and (3) restoration of habitat values is expected except for within the 10-foot-wide corridor that would be kept in a low-growing vegetation type.

During construction, many wetlands would be trenched, as detailed in Section 3.4, Wetlands. Impacts would include temporary loss of vegetation, which in turn would reduce wildlife food and cover within affected wetlands. Loss of larger trees or snags (e.g., greater than 20 cm [8 inches] in diameter) would represent a long-term loss of habitat value, because trees are generally slow growing and take a long time to replace.

Within the Snoqualmie Valley, where several of the potentially impacted wetlands are located, habitat would be temporarily reduced for many wetland-associated species. This impact would be minor because only a small fraction of any one wetland would be disturbed and habitat values are expected to become reestablished within a few years.

Within the lower Crab Creek area, where many ponds and larger wetlands are major nesting and brood rearing areas for waterfowl, habitat loss may result in decreased breeding habitat and associated reductions in productivity for some affected wetlands. Assuming construction would not take place during the breeding season, this impact is considered minor because only a minor portion of available habitat would be disturbed, and the areas disturbed would be revegetated soon after project construction.

East of the Beverly-Burke Pump Station, the pipeline would cross several draws containing thickets of greasewood and other shrubs. Clearing within these areas would result in a moderate, temporary loss of breeding and shelter habitat for pheasants and other wildlife.

The proposal would require habitat removal within three areas designated as Natural Open Space: a forested hillside near the Tolt River, a habitat patch near Lower Babcock Ridge, and another habitat patch north of the Pasco Terminal. Loss of trees within the forested hillside near the Tolt River would result in long-term impacts, because trees take over 50 years to replace. Otherwise, habitat values would return with restoration, as proposed by OPL.

Only minor impacts would occur within the oak woodland crossed by the pipeline corridor near Swauk Creek, east of Cle Elum. The pipeline corridor would avoid the majority of oak stands, although a few (less than five) individual oak trees may be removed.

General Wildlife Species and Habitats. Should construction take place during the spring nesting season (generally April 1 through July 15 of any given year), nest and/or den sites of wildlife could be directly lost. This impact would not occur within the 45 km (28 miles) that would be constructed within existing roads or trails. Impacting nests would be considered a major impact because most birds are protected under the Migratory Bird Treaty Act and, therefore, are legally protected from ~~Atake,~~ which includes destroying nests or eggs. This impact can be avoided by timing restrictions and/or clearance surveys, as described in the mitigation section.

Habitat Loss. Temporary habitat loss is the most direct impact that would occur to general wildlife communities. Construction would require full clearing, generally within the 18.3 m (60-foot) construction corridor. Wildlife habitats would be directly and completely removed by

digging and grading within the central portions of the construction corridor, and somewhat less disturbed toward the edges of the construction corridor, where wildlife habitats would be incidentally damaged by vehicles, construction materials, and workcrews.

Approximately 41 percent (218 ha [540 acres]) of the wildlife habitat that would be lost would be within shrub-steppe, although only one stand of relatively undisturbed shrub-steppe habitat would be impacted. About 26 percent of this cover type along the pipeline corridor contains mostly native shrubs and grasses and is expected to provide moderate to good wildlife habitat, especially during winter when food and cover are scarce. The temporary loss of these habitats represents a moderate impact because it could result in small-scale, localized population reductions for small mammals, game birds, and other wildlife due to reduced breeding success and/or increased winter mortality. The other stands of shrub-steppe that would be disturbed have a high amount of non-native species. Disturbance of these areas would have a minor impact on wildlife due to the existing reduced habitat values of these areas and relative abundance of similar habitats in the project vicinity.

OPL proposes to seed the construction corridor within shrub-steppe habitats using a native seed mix. However, restoration of pre-project communities may not be achievable without restoration plans that include specific restoration targets, the use of established plants, long-term monitoring, and periodic replanting in response to monitoring results (see mitigation section). With only seeding, the long-term impact could be to replace shrub-steppe habitats dominated by native species with those dominated by (1) non-native species, including cheatgrass, and (2) native but aggressive shrubs, such as rabbitbrush, which tend to quickly colonize disturbed areas within the shrub-steppe vegetation zone.

The second most affected cover type would be agricultural land (e.g., cropland, hay/pasture and orchard), of which 173 ha (432 acres) would be temporarily lost due to construction. This loss would represent a minor impact on wildlife because (1) these habitat types represent the most common habitat type available near where impacts would occur, (2) overall, these habitat types provide little value to wildlife other than a seasonal source of food and cover, and (3) wildlife species that would be affected are generally very common or even considered pest species (e.g., European starling and brown headed cowbird).

While shrub-steppe and agricultural lands are generally non-forested, patches of trees are present within these cover types. Because trees are rare east of the Yakima River, any patch of trees can provide breeding habitat and cover for birds and other wildlife. Many species of mammals may seek shelter from sun or inclement weather within forest groves. Even individual trees can be important shade or nest sites. Therefore, clearing of trees east of the Yakima River would be considered a moderate impact, and mitigation is suggested later in this chapter.

Scrub-shrub habitats, which occur in BPA transmission line easements and other areas where vegetation is controlled, represent 16 percent of the total vegetation impact (83 ha [207.6 acres]). This would have a moderate impact during construction, because these areas are used by numerous types of wildlife. However, over the long term, this impact would be negligible because this cover type can recover to pre-project conditions, in terms of habitat value, within 5 to 10 years.

Forest cover types represent 8 percent of the total vegetation impact (42 ha [104.3 acres]). Specific forest types that would be removed include second-growth western hemlock forest, deciduous forest, silver fir, Douglas-fir, mixed forest, and young coniferous forest. This impact, in terms of wildlife, would be relatively minor because these forested habitat types are relatively common, as are the species that inhabit them. Wildlife use of forests is generally lowest within **A**middle-aged@ forest stands, such as most of those along the pipeline corridor. Wildlife use is generally highest within recent clearcut and within old-growth stands. Impacts within forested areas would be similar to those that occur as part of commercial timber harvest. The Washington Department of Natural Resources routinely harvests second-growth forest throughout the state, and such actions are almost always permitted with a Determination of Nonsignificance under SEPA. However, the effects of habitat removal would be long term because much of the forest communities would not regrow to pre-project conditions until 50 or more years.

Construction Impacts - Columbia River Approach Options

Threatened, Endangered, and Other Sensitive Species and Habitats. The proposed route north of I-90, through Ginkgo State Park, would cross within approximately 180 m (591 feet) of a Swainson's hawk nest. Other nest sites may be present in the area as well. Burrowing owls and striped whipsnake are known to be within the vicinity of the northern YTC option. With mitigation, the impacts of the northern route would be minor. The southern YTC options do not cross any priority habitat identified by the WDFW, although environmental concerns for sensitive species would still apply. These options would also result in a minor level of impact, with mitigation.

General Wildlife Species and Habitats. A large portion of the route through Ginkgo State Park is outside of but adjacent to mule deer winter range identified by the WDFW, so timing restrictions may be necessary to avoid disturbing deer during winter. During severe winter conditions, when wintering deer are most susceptible to disturbance, construction would most likely be halted in this area due to logistical problems regardless of the presence of winter range, so this impact is not a major concern.

The northern YTC option would remove 9.3 ha (22.9 acres) of degraded shrub-steppe community, 1.4 ha (3.5 acres) of hay/pasture, and 1.1 ha (2.7 acres) of grass cover types. Overall, the difference results in a minor increase in habitat loss over the proposed pipeline corridor.

Construction Impacts - Columbia River Crossing Options

Threatened, Endangered, and Other Sensitive Species and Habitats. All of the Columbia River crossing options require construction within cliff habitat on both sides of the river. This habitat is used by nesting prairie falcons and other hawks, nongame birds, and diverse communities of reptiles, including striped whipsnake and night snake. The options do not differ substantially in impacts to sensitive animals, because similar types and amounts of habitats would be disturbed. Because cliff habitat is used by a variety of species, including many sensitive species, the impact of disturbing cliff habitat is considered moderate.

General Wildlife Species and Habitats. All of the Columbia River crossing options require construction within cliff habitat on both sides of the river. This habitat is used by

birds and diverse communities of reptiles. The Burlington Northern Beverly Railroad Bridge crossing option would require 17 ha (42 acres) more shrub-steppe impact than the proposed pipeline corridor. This area is grazed and provides moderate habitat value for wildlife. Overall, the options do not differ substantially in impacts to wildlife, because similar types and amounts of habitats would be disturbed.

Operational Impacts - Overall Proposal

Threatened, Endangered, and Other Sensitive Species and Habitats.

ROW Maintenance. Overall, operation would have little effect on threatened, endangered, or sensitive wildlife species under normal conditions. The primary effect would be the long-term maintenance of the ROW through vegetation control, which would involve manual cutting of trees in forested parts of the pipeline corridor to allow aerial viewing of the corridor. Use of chainsaws during the breeding season of northern spotted owls, marbled murrelets, or other birds could disturb nest activities and reduce nest site productivity. In some cases, nests may be located in trees being removed. Clearance surveys and timing restrictions would minimize this potential impact (see mitigation section).

ROW Inspections. Ground patrols and aerial inspections would occur approximately every 2 weeks. Because most of the pipeline corridor would be adjacent to existing roads and cleared ROW, the additional human presence would have little or no effect on threatened, endangered, or otherwise sensitive species. Some areas may be sensitive to regular entry and/or low-level fixed wing airplane flights, including nest sites, deer and elk winter range, and the sandhill crane migration area in the lower Crab Creek area. Site-specific management plans, developed and implemented through consultations with the WDFW, would mitigate potential impacts to minor or negligible levels (see mitigation section).

Spills. Impacts of a spill are uncertain because the location and extent of a potential spill are unpredictable, except in terms of risk (see Appendix A, Spill Risk Information, and Section 3.18, Health and Safety). Refined product spills could impact wildlife through (1) physical contact, (2) toxic contamination, and/or (3) destruction of food resources.

Of the threatened, endangered, and other sensitive species within the affected environment, bald eagle, osprey, peregrine falcon, and all species of amphibians are most vulnerable to the effects of a spill. These species feed and/or live within and near rivers, streams, ponds, and lakes, where spilled product is most likely to collect. Bald eagles are carrion feeders; if they feed on fish killed by a spill, eagles may subsequently become ill or die. However, bald eagles may avoid fish tainted with sufficient product to harm the eagle. Ospreys also feed on fish, and could ingest contaminated fish and/or become contaminated themselves. Peregrine falcons are less likely to be affected by a spill because very few, if any, are located near the project. Amphibians are particularly susceptible to contaminants because their skin is permeable. Spills that contaminate amphibian-bearing waters are likely to kill some or all of the amphibians within the affected area. Cleanup operations could also impact wildlife habitat and disturb wildlife. This impact is also uncertain and cannot be fully predicted.

General Wildlife Species and Habitats. Impacts would be the same as those described above for special-status species.

Cumulative Impacts. The project would not cause significant cumulative impacts on threatened or endangered species. Loss of shrub-steppe habitat would be additive to the large amount of shrub-steppe habitat that has already been lost due to large-scale conversion of native habitats to crop and range lands. The proposal would take place within areas that have already been significantly impacted by human activities, including roads, trails, commercial forestry, forest fires, and cleared utility corridors. The short- and long-term habitat loss associated with the project would be additive to these past and ongoing disturbances to wildlife and wildlife habitat. However, because of these past disturbances, the impacts of the proposal, considered individually, are lower in intensity because pristine habitats are not being disturbed.

3.5.2.2 No Action

None of the impacts from construction or normal operation of the proposal would occur. Because No Action would result in continuing use of trucks on the highway, it would result in a minor amount of additional highway mortality for wildlife. The frequency of expected spills from the combined increase of truck and barge traffic would likely exceed the frequency of pipeline spills. Although most spills from any of these sources would be minor, major spill volume could be released from barge or tanker ship under No Action, or from the pipeline, potentially totaling thousands of barrels. Threatened, endangered, and other sensitive species are at risk with or without the project, due to alternate transport modes. A tanker truck could spill 8,000 gallons of the same product (jet fuel, gasoline, or diesel) in many of the same areas that would be occupied by the proposed pipeline.

The No Action Alternative would remove no wildlife habitat, while the proposal would remove 524 ha (1,310 acres) during construction and maintain 67 ha (174 acres) in low-growing form during operation.

3.5.3 Additional Proposed Mitigation Measures

3.5.3.1 Construction Mitigation and Subsequent Impacts

The following mitigation measures focus on protection of important habitats and use areas for wildlife during construction. If applied, the following mitigation measures would reduce impacts of disturbance to minor or negligible. Where the term **Avoid** is used, the impact would be essentially eliminated by the proposed mitigation measure. Where the term **Minimize** is used, impacts may still occur, as indicated.

- # Unless clearance surveys have been completed and accepted as sufficient by the USFWS, do not use blasting techniques within 1.6 km (1 mile) of (a) a known nest site for marbled murrelet and/or spotted owl, or (b) habitat that is potentially suitable for marbled

murrelet, northern spotted owl, and/or peregrine falcon nesting, or (c) known or likely bald eagle winter use area from November 1 through March 15.

- # To comply with the ESA and to mitigate impacts on threatened and endangered species, marbled murrelet CHUs, and northern spotted owl CHUs, conduct informal consultation with the USFWS, as specified under Section 7 of the ESA (see 50 CFR Part 402.12, Federal Register, June 3, 1986). To address CHUs, provide to the USFWS locations, numbers, size, species, and specific area impacted within CHUs, along with other information that may be requested by the USFWS, including survey data if necessary. If necessary (as determined through consultation with the USFWS), develop and implement silvicultural prescriptions to offset value reductions caused by creation of the pipeline corridor.
- # To avoid disturbing nesting northern spotted owl, prohibit construction within the range of the northern spotted owl during the nesting period (March 15 through August 1) anywhere suitable nesting habitat occurs within 0.4 km (0.25 mile) unless surveys have been completed according to USFS protocol and specific written authorization is provided by the USFWS.
- # To avoid disturbing nesting marbled murrelets, prohibit construction within the range of the marbled murrelet during the nesting period (April 1 through September 15) unless specific written authorization is provided by the USFWS on a case-by-case basis. In addition, prohibit blasting anywhere within USFS lands during the marbled murrelet nesting season unless the USFWS concurs in writing that such blasting would not likely affect marbled murrelets. With mitigation, impacts on marbled murrelet would be negligible.
- # To minimize disturbance of wintering bald eagles, do not conduct work within 100 m (328 feet) of the Snoqualmie River, Tolt River, South Fork Snoqualmie River, Keechelus Lake, Yakima River, Columbia River, or lower Crab Creek from November 1 through March 15 of any given winter unless clearance surveys are conducted daily to determine that no bald eagles are present within 100 m (328 feet) of construction activities (or 1.6 km [1 mile] from any blasting). In addition, identify potential perch trees that would be removed, including any trees greater than 30 cm (12 inches) in diameter at breast height. If perch trees regularly used by bald eagles are to be removed, then trees should be planted to eventually replace lost trees. With these two measures, impacts on wintering bald eagles would be minor to negligible, although specific measures and impact levels must be determined through consultation with the USFWS.
- # To minimize disturbing or destroying nests or eggs of peregrine falcon, prairie falcon, ferruginous hawk, northern goshawk, and other raptors (e.g., red-tailed hawk), construction should not take place during the nesting season (March 15 to July 15) of any given year unless clearance surveys are conducted to demonstrate that no raptor nests are present within 0.4 km (0.25 mile) of construction areas. To prevent the taking of nests of other birds protected under the Migratory Bird Treaty Act, limit vegetation clearing to after July 15 and prior to March 15, unless clearance surveys are conducted within

3 meters (10 feet) of vegetation clearing areas. Survey protocols should be approved by designated USFS staff. With this measure, impacts on raptors and other birds listed under the Migratory Bird Treaty Act would be minor to negligible. Site-specific plans for nest site protection should be conducted in consultation with the USFWS and WDFW. Because peregrine falcons are federally listed as endangered, consultation with the USFWS under Section 7 of the ESA will be required prior to construction.

- # To avoid disturbing nesting burrowing owls, conduct clearance surveys prior to construction from Kittitas to Pasco. In addition, curtail construction activities from March 15 through August 15 within 0.4 km (0.25 mile) of active nesting burrows (including accessory burrows). Should construction require burrows to be destroyed, do so outside of the nesting season (above). To minimize the impact, construct replacement burrows per WDFW direction. Replacement burrows have been shown to effectively mitigate for unavoidable loss of burrowing owl nesting areas. With this mitigation measure, the impact of removing a nest burrow would be minor.
- # To avoid disturbing nesting long-billed curlews, conduct clearance surveys prior to construction from Kittitas to Pasco. Avoid construction within 100 m (328 feet) of nest sites during the breeding season. With this mitigation measure, the impact on long-billed curlews would be negligible.
- # To avoid disturbing sandhill cranes, suspend construction activities within areas mapped by the WDFW as priority sandhill crane habitat during the spring (early March through mid-May) and fall (mid-September to early November) migration periods, unless specific clearance is provided by the WDFW, due to different use and timing patterns that may occur from year to year. With this mitigation measure, the impact on sandhill cranes would be negligible.
- # To minimize incidental killing of tailed frogs, Cascades frogs, and other amphibians, conduct clearance surveys immediately prior to construction in wetland, stream, river, and riparian habitats and remove individuals from areas that would be disturbed. Destruction of amphibian eggs may be minimized by conducting clearance surveys and relocating any eggs found to suitable habitat. Storage and/or relocations of adults and/or eggs should be conducted in accordance with a mitigation agreement prepared in cooperation with the WDFW and as approved by the USFS and/or applicable land owner/manager. Continue surveys each day prior to construction. With this mitigation measure, the impact of potentially killing sensitive amphibians would be minor.
- # To minimize risks of disturbing snake hibernacula, do not clear rocky areas from approximately October 15 through May 1 of any given year. Where such timing conflicts with timing restrictions to protect nesting raptors or other birds, coordinate with the WDFW and submit consultation letters to the USFS for review and approval. With this mitigation measure, the risk of potentially disturbing snake hibernacula would be minor.
- # Mitigation for impacts on Washington ground squirrels should be identified in cooperation with the WDFW.

- # To minimize disturbing or destroying nests or eggs of birds other than raptors protected under the Migratory Bird Treaty Act, construction should not take place during the nesting season (between March 15 and July 15) of any given year unless clearance surveys are conducted to demonstrate that no nests are present. Surveys should be conducted according to recognized USFS and/or WDFW protocols or, in the absence of established protocols, survey protocols should be approved by designated USFS staff. With this measure, impacts on nesting birds would be minor to negligible.
- # To ensure habitat values are replaced as part of restoration efforts, follow mitigation guidelines for Botanical Resources (Section 3.3). In addition, develop specific performance standards for restoration within each cover type that would be impacted and monitor for achievement of each standard. Performance standards would be approved by the USFS. Where monitoring indicates failure, plant additional vegetation or adjust methods/species as necessary to meet performance standards. Seeding would likely require some augmentation by planting established plants.
- # To offset loss of cover in shrub-steppe and in agricultural lands, plant patches of shrubs within the ROW in adjacent parcels in cooperation with landowners. OPL could also coordinate with habitat restoration/improvement projects that may be ongoing near the pipeline corridor.
- # Replace any trees removed east of the Yakima River with a 2:1 ratio of established nursery stock (5- to 10-year-old trees), using species acceptable to the WDFW. Conduct monitoring and maintain as necessary to ensure survival for 10 years.
- # To prevent loss of riparian habitat values through erosion, follow mitigation measures identified in Section 3.6, Water.
- # To minimize disturbance of wintering deer and elk, develop specific timing restrictions with WDFW. Timing restrictions may vary with weather conditions, so such restrictions would likely be made on a case-by-case basis.
- # To minimize disturbance to roosting and/or breeding bats, conduct clearance surveys for bats prior to disturbing habitat within cliff areas. Establish appropriate timing restrictions should bat roosts/breeding areas be found within the impact corridor.

3.5.3.2 Operational Mitigation and Subsequent Impacts

- # To avoid potential disturbance or removal of nest sites, tree cutting for maintenance of the ROW should not take place during the nesting season (March 15 to July 15) of any given year unless clearance surveys are conducted to demonstrate that no nests are present. Surveys should be conducted according to recognized USFS and/or WDFW protocols or, in the absence of established protocols, survey protocols should be approved

by designated USFS staff. With this measure, impacts on nesting birds would be minor to negligible.

- # To minimize the potential impacts on sandhill cranes, aerial and driving inspections of the pipeline corridor should be done so as not to disturb the flocks. To minimize potential impacts on wintering deer, do not drive through wintering range when snow cover averages greater than 0.61 m (2 feet). Develop and implement site-specific management plans, in consultation with the WDFW and USFWS (for species listed under the ESA and/or Migratory Bird Treaty Act), to mitigate potential impacts of ground patrols and aerial inspections of the pipeline corridor. With these measures, impacts on cranes or wintering deer during operation would be minor or negligible.

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