Fish

Affected Environment

The 84-mile corridor crosses 89 streams. However, the majority of these streams (55) are ***ephemeral*** non-fish-bearing streams that contain flowing water only during relatively brief periods following snow melt or rain storms. The remaining 34 streams within the corridor are considered to be ***perennial*** and contain some water year-round during normal rainfall years. The corridor crosses four waterways (Hawk Creek, Coulee Creek, Deep Creek, and the Spokane River) that contain sufficient water flow to support seasonal or year-round fisheries.

Hawk Creek is a perennial stream that flows northward across the corridor between corridor miles 39/1 and 39/2. The section of the creek within the corridor is approximately 7.7 miles upstream of where the creek discharges into Franklin D. Roosevelt (FDR) Lake. Hawk Creek Falls, which is located just upstream of the mouth of the creek, forms an impassible barrier to upstream fish movement. No fish surveys have been published in the recent scientific literature describing habitat or fish populations in the section of creek upstream of Hawk Creek Falls. However, the sections of creek above and below Hawk Creek Falls are thought to support populations of brook trout and rainbow trout (DeLorme 2001). Bull trout may occasionally move into the section of Hawk Creek below Hawk Creek Falls from FDR Lake but the falls prevent bull trout from moving further upstream. Riparian habitat along Hawk Creek has been designated as priority habitat for fish and wildlife by the Washington Department of Fish and Wildlife (WDFW) (Figure 3-39).

Coulee Creek is an ephemeral stream that flows generally eastward, crossing the corridor between corridor miles 75/6 and 75/7. The section of creek within the corridor is approximately 0.6 miles upstream from where the creek discharges into Deep Creek. Deep Creek is an ephemeral stream that flows northeastward, crossing the corridor between corridor miles 75/8 and 76/2. The section of creek within the corridor is approximately 1.3 miles upstream from where the creek discharges into the Spokane River. These creeks may contain pockets of spring water that might seasonally support fish. No recent surveys have been conducted to document fish use of the creeks; however, rainbow trout and brook trout may utilize the creeks during periods of water flow (personal communication, J. Whalen, WDFW, June 12, 2002).

The corridor crosses the Spokane River at the head of Nine Mile Pool Reservoir between corridor miles 77/3 and 77/4. The Spokane River supports fish species adapted to both riverine and ***lacustrine*** environments. Salmonid species include rainbow trout, brown trout, and mountain whitefish. Other fish species may include largemouth sucker, sculpins, dace, redside shiner, and northern pikeminnow. Riparian habitat along the Spokane River has been designated as priority habitat for fish and wildlife by the WDFW (Figure 3-39).

Threatened and Endangered Species

The U.S. Fish and Wildlife Service (***USFWS***) has identified the bull trout as the only Endangered Species Act (ESA) listed fish species that may occur in the vicinity of the project. This species, which was listed as threatened by USFWS in 1999, may occur in lower Hawk Creek downstream of Hawk Creek Falls and in the Spokane River.

The project corridor crosses Hawk Creek approximately 7.7 miles upstream from Hawk Creek Falls, which forms an impassible barrier to upstream fish movement. Thus, bull trout are not present in the vicinity of the corridor in the Hawk Creek watershed.

Bull trout that may occur in the Spokane River in the vicinity of the project are believed to be migrants from the Pend Oreille bull trout stock as water temperatures in the Spokane River are considered to be too high to allow the fish to successfully reproduce. Although the Pend Oreille stock is regulated under ESA, bull trout within FDR Lake or its tributaries are not regulated under ESA (Deeds, 2002).

Environmental Consequences

Routine operation of the transmission line is expected to have no impacts to fish. Construction and maintenance of the new transmission line and access roads, including culvert replacements, could have short- and long-term impacts to fish. Construction could cause short-term and localized increases in turbidity and sediment in fish-bearing streams due to the erosion of exposed soils entering the streams. Increases in turbidity could result in avoidance of immediate work areas by fish. Increases in sediment during the spawning and incubation period (April to June for rainbow and brook trout) could result in sediment deposition over spawning areas, suffocating eggs and fry. Removing riparian vegetation during construction and maintenance could increase water temperatures above those preferred by fish, reduce vegetative cover along stream banks, and reduce rates of wood recruitment into the stream. Implementation of best management practices during construction would greatly reduce the quantity of sediment introduced into streams and avoid low to moderate impacts to fish populations.

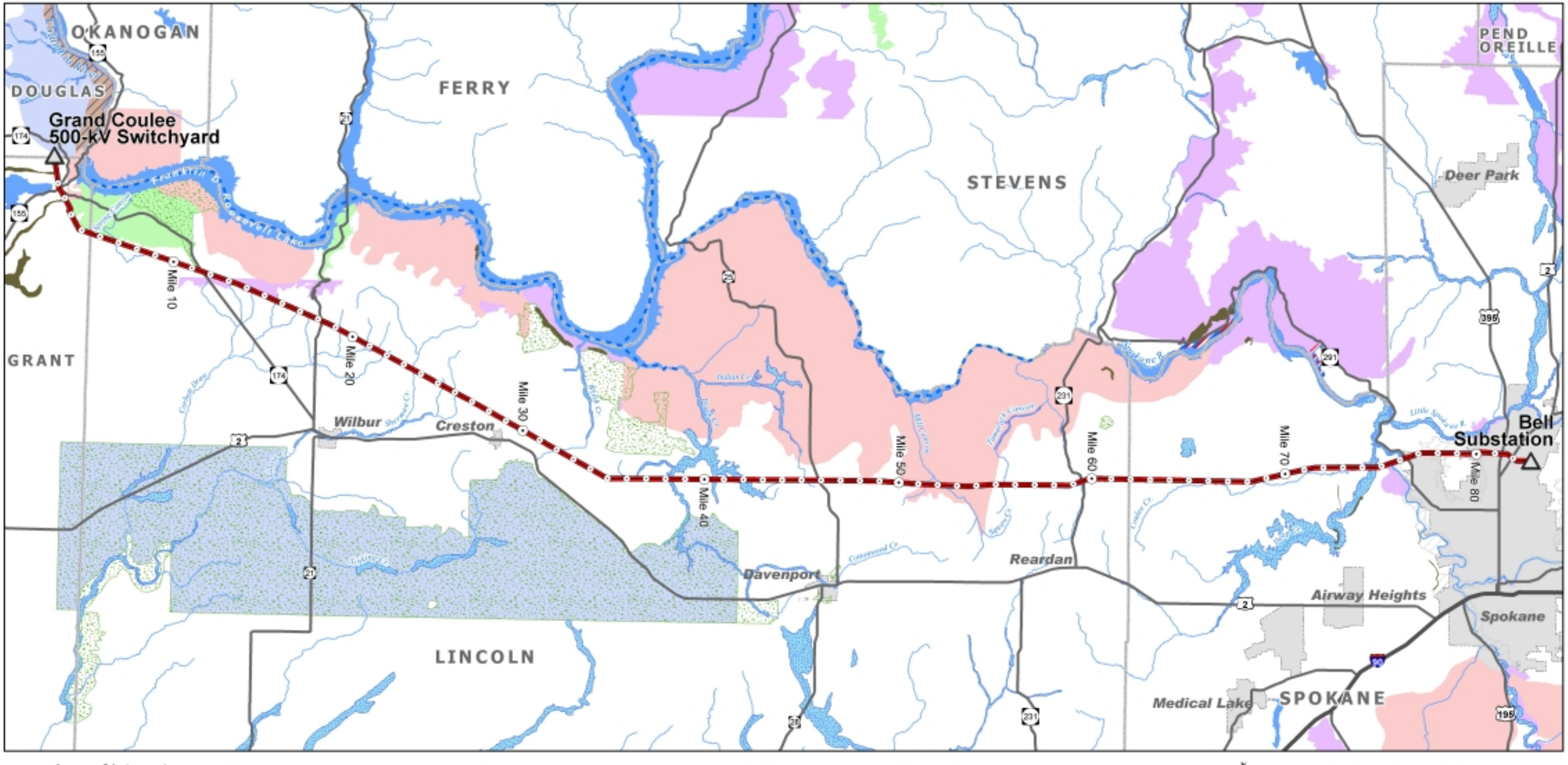
Impact Definitions

A **high** impact would occur under the following circumstances:

- Construction activities directly adjacent to or across fish-bearing streams release sediment into the streams during critical spawning and incubation periods for trout.
- Removal or modification of riparian vegetation results in increased water temperatures in fish-bearing streams.
- Removal or modification of riparian vegetation results in substantially reduced rates of large woody debris recruitment or vegetative cover along stream banks.

GRAND COULEE - BELL 500kV TRANSMISSION LINE PROJECT

PRIORITY HABITAT/SPECIES



Area of Interest

- Mile Marker
- Substation or Switchyard
- Major Road
- Grand Coulee-Bell Corridor
- Rivers/Stream w/ ESA Listed Species
- COUNTY BOUNDARY

- City or Town
- Cliff
- Shrub
- Mule Deer
- Chukar
- Bald Eagle
- Riparian Zone
- Rocky Mtn. Elk
- Sharp-tailed Grouse
- Urban Natural Open Space
- Northwest White-tailed Deer

Data Source: U.S.G.S Digital Line Graphs, Washington Dept. of Fish and Wildlife, Bonneville Power Administration Regional GIS Database.

SCALE 1:325,000

0 2 4 8 12 16 Kilometers

0 2 4 8 12 16 Miles

FIGURE3-39

A **moderate** impact would occur under the following circumstances:

- Construction activities release sediment into fish-bearing streams outside of the critical spawning and incubation periods for resident trout.
- Removal or modification of riparian vegetation results in locally reduced vegetative cover along stream banks but does not change stream water temperature. However, fish abundance and distribution may change in the immediate vicinity of modifications to riparian vegetation.
- Removal or modification of riparian vegetation results in reduced rates of large woody debris recruitment or vegetative cover along stream banks.

A **low** impact would occur under the following circumstances:

- Construction activities release small volumes of sediments into spawning streams outside of the critical spawning and incubation periods for resident trout.
- Construction and line maintenance activities result in minor modifications to riparian vegetation but do not affect stream water temperature or fish abundance or distribution.
- Removal or modification of riparian vegetation does not result in reduced rates of large woody debris recruitment or vegetative cover along stream banks.

No impact occurs if fish would not be affected by towers and related construction, access roads, or operation and maintenance of the transmission line.

Impacts

Towers and Related Construction

Removal of existing wood pole structures would not result in direct impacts to fish because no structures are located within streams. The removal of the existing structures would, however, have indirect impacts to fish. Indirect impacts could result from exposed soils eroding into fish-bearing streams or riparian vegetation being damaged during structure removal. Typically, existing wood pole structures would be excavated or cut off two feet below ground level and holes backfilled with native material. However, structures located adjacent to fish-bearing streams would be cut off at ground level. The wood poles in these locations would be dragged out or lifted out by crane to avoid bringing in construction equipment near the stream. Sediment introduced to fish-bearing streams could have a low to high impact level, depending on the amount and timing of sediment entering the stream. To reduce potential impacts due to sedimentation, best management practices, such as the installation of a silt fence or the use of geotextile fabric, would be followed during construction to prevent or reduce the amount of sediment introduced into fish-bearing streams.

Construction areas around towers would not have direct impacts to fish because no towers would be located in streams. These areas could, however, result in indirect impacts to fish. Indirect impacts could result from exposed soils eroding into fish-bearing streams or riparian vegetation being damaged during tower installation. Sediment introduced to fish-bearing streams could have a low to high impact level, depending on the amount and timing of sediment entering the stream. Removal of riparian vegetation within construction areas would have a low to moderate impact level.

Construction of new tower pads would not have direct impacts to fish because no towers would be located in streams. The construction of new tower pads could, however, result in indirect impacts to fish. Indirect impacts could result from exposed soils eroding into fish-bearing streams or riparian vegetation being damaged during tower pad installation. Sediment introduced to fish-bearing streams could have a low to high impact level, depending on the amount and timing of sediment entering the stream. Removal of riparian vegetation within construction areas would have a low to moderate impact level.

Conductor tensioning sites and staging areas would not result in direct or indirect impacts to streams. Although the exact locations are unknown, these areas would not be placed within 400 feet of streams. The impact level from conductor tensioning sites and staging areas would be low.

Road Construction

Construction of new access roads would have indirect impacts to fish. Indirect impacts would result from the removal of riparian vegetation, disturbance of soils and the introduction of sediment into fish-bearing streams. Removal of riparian vegetation and soil disturbance could introduce sediment into streams. Removal of riparian vegetation could also cause increases in stream temperatures. The existing access road between corridor miles 75/1 to 75/8 is located to the south outside of the right-of-way. This section of road, which crosses over Coulee Creek between corridor miles 75/6 and 75/7, may be relocated within the right-of-way. Potential impacts to Coulee Creek fisheries during construction of the new access road would depend on the timing of construction activities. The greatest potential for adverse impacts to fish would occur if construction occurs during periods when water is present in Coulee Creek. Implementation of best management practices for erosion control during access road construction and construction timing would result in low to moderate impact levels to fish in Coulee Creek. No new access roads are proposed in the vicinities of Deep Creek or the Spokane River, therefore no impacts to fish would occur.

Construction of temporary spur roads would not have direct impacts to fish because no spur roads are proposed to be built across fish-bearing streams. Construction of temporary spur roads could have indirect impacts to fish from soil entering fish-bearing streams. Sediment introduced to fish-bearing streams could have a low to high impact level, depending on the amount and timing of sediment entering the stream.

Improvements to existing access roads would not have direct impacts to fish because no access road improvements are proposed across fish-bearing streams. Indirect impacts to fish would result from soil entering fish-bearing streams. The existing access road from corridor miles 39/1 to 39/6 would be improved to reduce existing road runoff and erosion. Improvements may include grade modifications, addition of rock, or construction of drain dips. This section of access road crosses over Hawk Creek between corridor miles 39/1 and 39/2. Potential impacts to Hawk Creek fish during access road improvements would depend on the timing of construction activities. If access road improvements occurred during the April-June spawning and egg incubation interval for trout, impact levels would be high; otherwise impacts would be low to moderate. To reduce potential impacts due to sedimentation, best management practices, such as the installation of a silt fence or the use of geotextile fabric, will be followed during access road improvements to prevent or reduce the amount of sediment introduced into fish-bearing streams. The planned improvements to the access road in this section of the corridor are expected to have long-term beneficial effects on fish populations by reducing the amount of road runoff and erosion that is currently occurring in the vicinity of Hawk Creek.

Installing/replacing culverts could have indirect impacts to fish. Although culverts would be replaced or new culverts installed at a number of locations where access roads cross ephemeral streams, no culverts will be placed in fish-bearing streams. Indirect impacts could result from sediment being introduced into intermittent streams that are tributaries to a fish-bearing stream and transported into the fish-bearing stream. The impacts to fish would depend on the water flows in the intermittent channel, distance from the source of sediment to the fish-bearing stream, and timing of the sediment release. Impacts would likely range from low to moderate as a result of culverts being installed in ephemeral streams.

Operation and Maintenance

Operation of the new transmission line would have no direct or indirect impacts to fish.

Maintenance of the new transmission line would have direct and indirect impacts to fish. Direct impacts would result from culvert replacements that may occur if existing culverts become damaged. Indirect impacts would result from habitat alteration due to cutting of riparian vegetation, use of pesticides, changes in runoff and infiltration patterns (from upland vegetation clearing), sedimentation from cleared areas, and maintenance access across streams. Since riparian areas are extremely important in providing stream shading and cover for fish, and are a source of large woody debris in streams, any clearing of stream-side riparian vegetation would likely cause moderate to high impacts to fish-bearing streams. Impacts would be minimized with the implementation with standard maintenance practices described in Transmission System Vegetation Management Program.

Threatened and Endangered Species

No federally protected stock of bull trout exists within the project area; therefore, no impacts to bull trout would be expected. Although not federally regulated, the Franklin D. Roosevelt Lake stock of bull trout may occur in the Spokane River and lower Hawk Creek. Because no high to moderate impacts to these aquatic systems would occur, no adverse impacts to local stocks of bull trout are expected.

Environmental Consequences of the Alternative Action

Impacts to fish would be the same for the alternative action.

Cumulative Impacts

In the Columbia River Basin ecosystem, fish distribution and population have been reduced by loss, fragmentation, and degradation of streams. Species such as salmon and trout have declined dramatically in the region since the conversion of rivers to reservoirs. Erosion and sedimentation of streams and loss of riparian habitat within the study area has increased over the past 100 years due to land use practices such as grazing, agriculture, road building, land clearing, military operations, and other disturbances. This has contributed to a reduction in the quality and availability of fish habitat in many streams. No fish barriers would result from the project and important migration corridors would not be impacted. Some riparian habitat would be lost as a result of the proposed project, adding cumulatively to the degradation of fish habitat. The planned improvements to the access road in the vicinity of Hawk Creek are expected to have long-term beneficial effects on fish populations by reducing the amount of road runoff and erosion that is currently occurring in the vicinity of this creek.

Mitigation

To reduce potential construction impacts to fish, mitigation recommended by WDFW that minimizes the quantity of sediments deposited into rivers and streams would be implemented, such as:

- Use silt fences and straw bales to separate construction activities from watercourses and drainages.
- Limit disturbance to the minimum necessary when working adjacent to fish-bearing streams.
- Avoid mechanized land clearing within riparian areas to avoid soil compaction from heavy machinery, destruction of live plants, and potential alteration of surface water patterns.

- Deposit and stabilize all excavated material not reused in an upland area. No used material would be deposited in environmentally sensitive areas such as streams, riparian areas, wetlands, and floodplains.

- Apply erosion control measures such as silt fence, straw mulch, straw wattles, straw bale check dams, or other soil stabilizers in the vicinity of fish bearing streams.

- Coordinate with the WDFW on placement or replacement of suitable-sized culverts at all drainage crossings.

- Revegetate all construction-caused, exposed soils with native plants.

- Avoid refueling and/or mixing hazardous materials where accidental spills could enter surface or groundwater.

In addition, construction activities near streams should be avoided to the extent possible when there is water present in the streams and during the April-June period of trout egg incubation.

No mitigation would be implemented for operation or maintenance activities.

Environmental Consequences of the No Action Alternative

Current levels of disturbance to fish resources associated with ongoing maintenance activities for the existing transmission line, substations, and right-of-way would continue under the No Action Alternative. This would include localized soil disturbance and potential sedimentation of streams due to vehicular traffic, transmission structure replacement, vegetation management activities, and access road improvements. The management and clearing of vegetation within riparian areas along the corridor, which could impact fish cover, wood recruitment to streams, and water temperatures, would also continue under this alternative. In addition, vehicle and machinery use and vegetation management practices could contribute minor amounts of pollutants that could be transported to streams. No new impacts to fish resources are expected under this alternative.

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