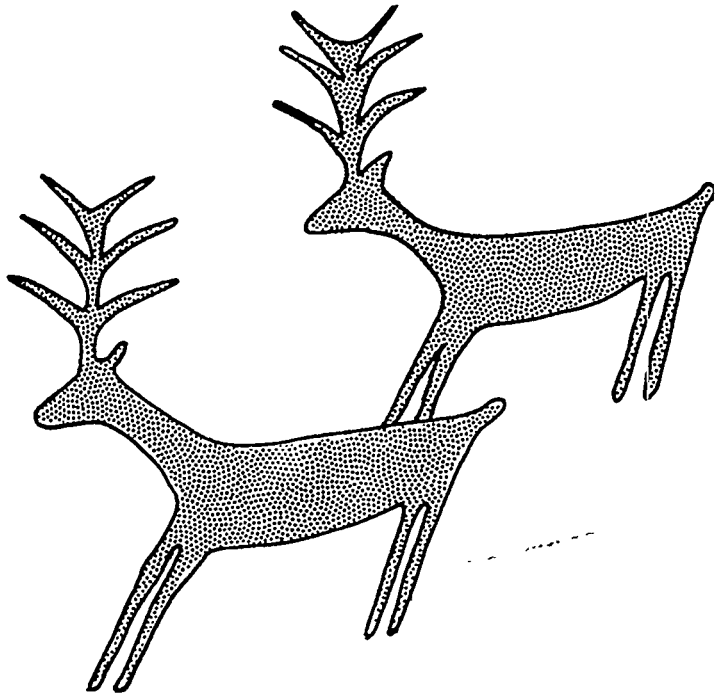
Hellsgate Winter Range: Wildlife Mitigation Project

Final Environmental Assessment



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Bonneville
POWER ADMINISTRATION

Colville
Confederated Tribes

Bureau
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CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

1.1 Proposed Action

Bonneville Power Administration (BPA) proposes to fund the Hellsgate Winter Range Wildlife Mitigation Project (Project) in a cooperative effort with the Colville Confederated Tribes and the Bureau of Indian Affairs (BIA). The proposed action would allow the sponsors to secure property and conduct wildlife management activities within the boundaries of the Colville Indian Reservation.

This Final Environmental Assessment (EA) examines the potential environmental effects of acquiring and managing property for wildlife and wildlife habitat within a large project area. This area consists of several separated land parcels, of which 2,000 hectares (4,943 acres) have been purchased by BPA and an additional 4,640 hectares (11,466 acres) have been identified by the Colville Confederated Tribes for inclusion in the Project. Four proposed activities (habitat protection, habitat enhancement, operation and maintenance, and monitoring and evaluation) are analyzed.

1.2 Purpose of and Need for Action

The proposed action is intended to meet the need for mitigation of wildlife and wildlife habitat that was adversely affected by the construction of Grand Coulee and Chief Joseph Dams and their reservoirs.

The purposes of the proposed action are to:

- Increase quality and quantity of riparian, and upland wildlife and wildlife habitat on the Colville Indian Reservation;
- Maintain consistency with interim Washington Wildlife Agreement; and
- Maintain consistency with the Northwest Power Planning Council's 1989 Fish and Wildlife Program Wildlife Rule, and the 1993 Phase IV Resident Fish and Wildlife Program Amendments.

1.3 Background

1.3.1 Mitigation Process under the Northwest Power Act

Under provisions of the Pacific Northwest Electric Power Planning and Conservation Act of 1980, BPA has the authority and obligation to fund wildlife mitigation activities approved by the Northwest Power Planning Council (Council) and included in the Council's Fish and Wildlife (F&W) Program. The initial phase of mitigation planning for wildlife habitat losses was submitted to the Council for amendment into the F&W Program

in 1989. The F&W Program includes a process for review of habitat losses and design of mitigation plans for each of the Federal hydro projects in the Columbia River Basin (Section 1002).

In 1989, the Council amended the F&W Program to include wildlife habitat losses resulting from construction and operation of Grand Coulee and Chief Joseph Dams. The Council adopted an interim goal, for a 10 year period of addressing up to 35 percent of the wildlife habitat losses due to construction of the Federal hydropower system on the Columbia River and its tributaries (Section 1003, Measure (1) (C)).

Consistent with Section 1003(7) of the F&W Program's Wildlife Mitigation Rule, BPA proposes to fund projects that will help reach the Council's mitigation goals. In 1990, the Council reviewed and approved the Colville Confederated Tribes' proposed Hellsgate Winter Range Project.

1.3.2 Relationship to Other Actions

The Final EA incorporates concepts from and is consistent with the following Colville Confederated Tribes resource plans:

- Interim Timber Management Plan (CBC 1990-469; 1990-585)
- Integrated Resource Management Plan (in progress)
- Colville Water Quality Management Program (208) (CBC 1985-20)

Potential activities proposed in the Final EA are also consistent with the goals and policies of the following Federal and Regional plans, programs, and agreements:

- Washington Wildlife Mitigation Agreement -- Among Members of the Washington Wildlife Coalition of Resource Agencies and Tribes and the BPA (1993); and
- Columbia River Basin Fish and Wildlife Program and Amendments (Northwest Power Council, 1982)

CHAPTER 2: ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 Introduction

This Chapter describes a No-Action Alternative (Alternative A), and a Habitat Enhancement Alternative (Alternative B). Alternative B presents proposed habitat protection enhancement, operation and maintenance, and monitoring and evaluation activities.

2.2 No-Action: Alternative A

In Alternative A, BPA **would not fund** activities on the Colville Indian Reservation that are necessary to partially mitigate for wildlife and wildlife habitats adversely affected by the construction of Grand Coulee and Chief Joseph Dams and reservoirs. To protect wildlife and key riparian and upland wildlife habitats within the Reservation project area, the Colville Confederated Tribes and the BIA could pursue limited funding opportunities with others.

Selection of Alternative A could reduce opportunities for BPA to receive credit for wildlife mitigation under the Council's F&W Program, and would limit the ability of BPA to meet terms and conditions of the Washington Wildlife Mitigation Agreement.

2.3 Land Acquisition and Habitat Enhancement: Alternative B

In Alternative B, BPA **would fund** activities on the Colville Indian Reservation that are necessary to partially mitigate for wildlife and wildlife habitats adversely affected by the construction of Grand Coulee and Chief Joseph Dams and reservoirs. BPA reimbursement would enable the Colville Confederated Tribes to secure Reservation lands for wildlife habitat and to enhance, maintain, and monitor site-specific conditions to increase wildlife values.

Selection of Alternative B would increase opportunities for BPA to receive credit for wildlife mitigation under the Council's F&W Program, and provide the means for BPA to meet the terms and conditions of the Washington Wildlife Mitigation Agreement. Selection of Alternative B would allow BPA to reimburse the Colville Confederated Tribes for land acquisition costs, and fund long-term wildlife habitat enhancement, operation and maintenance (O&M), and monitoring and evaluation (M&E) activities; and the BIA to convert all fee patent properties acquired for the Project into trust status. Alternative B would allow the Colville Confederated Tribes to secure two additional properties of high priority lands of approximately 4,640 hectares (11,466 acres) and initiate or subcontract the development of about 25,000 habitat units within the next five years.

2.3.1 Alternative B Description

2.3.1.1 Project Area Location

The project area encompasses about 6,640 hectares (16,408 acres) of upland and riparian habitats in the vicinity of the Columbia and Sanpoil Rivers. As previously discussed, the project area vicinity includes 2,000 hectares (4,943 acres) purchased by BPA, and an additional 4,640 hectares (11,466 acres) identified by the Colville Confederated Tribes. As shown in Figure 1, the project area is made up of several separated parcels in the State of Washington and located totally within the boundaries of the Colville Indian Reservation.

2.3.1.2 Colville Confederated Tribes Acquisition Guidelines

As provided in the Washington Wildlife Mitigation Agreement (See Appendix A), all lands acquired for the Project by BPA would transfer upon request to the Colville Confederated Tribes. Unless different funding arrangements between the Colville Confederated Tribes and the BPA are agreed on, all additional land identified for inclusion into the Project would be initially secured with non-Federal Tribal funds. Reimbursment by BPA will be based on fair market values as established through Federal land value appraisals. The following conditions would apply to any such proposed land acquisition:

- The Colville Confederated Tribes may acquire (through purchase, lease, or conservation easement) fee patent lands, trust lands or individual allotments and their associated water rights for the Project. Fair market values of all land parcels would first be established through Federal land value/lease appraisals, and then secured through existing Tribal/BIA purchasing, leasing or conservation easement procedures or agreements (25 C.F.R. 151.3).

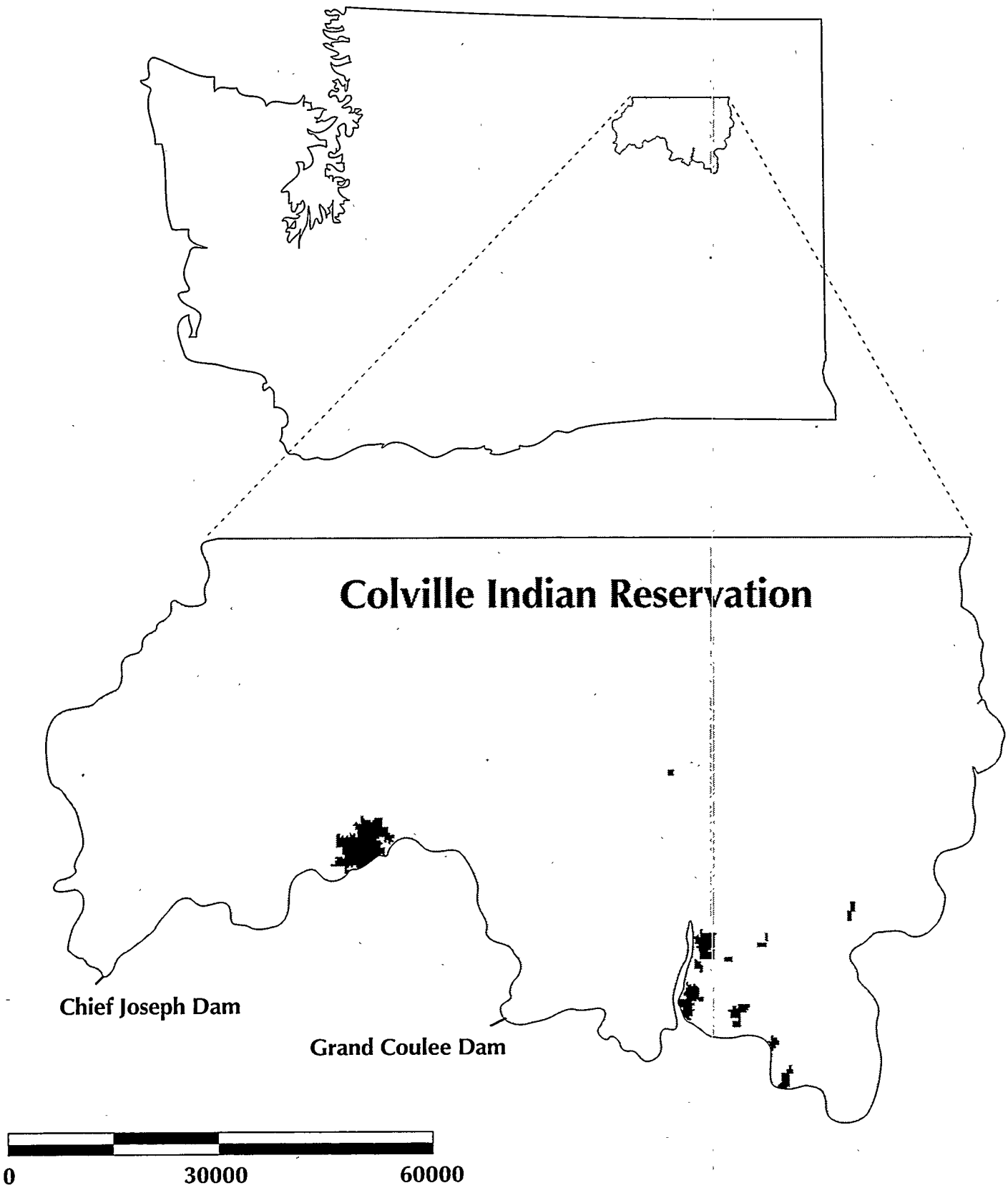
- Large contiguous Reservation parcels and acreage highly suitable for wildlife habitat mitigation would be identified and prioritized for inclusion into the Project.

- Land acquisitions for the Project would be on a voluntary basis and would not involve land condemnations.

- Suitable properties presently outside of the project study area could be determined eligible for acquisition on a case-by-case basis.

- After transfer or purchase, a Colville Agency BIA application would be immediately filed to turn all fee patent properties into trust status. The BIA would notify local and county governments of such proceedings and/or transactions as established through existing BIA procedures (25 C.F.R. 151.8 through 25 C.F.R. 151.12).

Figure 1. Wildlife Mitigation Project Area



2.3.1.3 Colville Confederated Tribes/BPA Management and Funding Agreement

- The Colville Confederated Tribes and BPA would finalize and formally stipulate the terms and conditions of a long-term management and funding agreement for the Project. By signing the agreement, BPA would agree to reimburse acquisition or other protection costs associated with securing the land, and to fund long-term wildlife management activities within the project area. The Colville Confederated Tribes would agree to protect and conduct long-term wildlife and wildlife habitat enhancement, O&M, and M&E activities. A specific Colville Confederated Tribes/ BPA management and funding agreement would be established for each individual property when approved for the Project.

- Terms and conditions of the BPA/Colville Confederated Tribes management and funding agreement should include but are not limited to total land protection costs and the length in years of the agreement.

2.3.2 Managing Land for Wildlife Habitat

2.3.2.1 Site Planning and Enhancement

A long-term management plan (Site Plan) would be developed for each individual property acquired for the Project. The Site Plan would document the site-specific management and enhancement activities, O&M, and M&E operations to be implemented at each property (See Sections 2.3.2.2, 2.3.2.3, and 2.3.2.4 below). Exhibits may include but are not limited to engineering specifications of all planned habitat enhancement activities, time schedules, equipment, and personnel needs.

Completed Site Plans may be subject to further National Environmental Policy Act (NEPA) review prior to implementation. This may include further coordination with BIA, appropriate Tribal programs, BPA, and other Federal agencies to ensure consistency with Federal environmental legislation and Tribal program requirements. All site-specific NEPA analysis and decisions would be tiered to this Environmental Assessment.

2.3.2.2 Proposed Habitat Protection and Enhancement Activities

Proposed enhancement and protection activities within the project area (by habitat type) include:

All habitats:

a) removal of domestic livestock to reduce risk of overgrazing;
b) road closures to reduce wildlife disturbance, poaching, vandalism;
c) fencing of project area perimeter with appropriate materials to control domestic livestock trespass;
d) chemical applications to control noxious weeds;
e) fire suppression to protect wildlife habitat resources;

f) prescribed burning (frequent low intensity burns in dry forest habitats; and hotter broadcast burns in wetter sites) to simulate the natural role of fire in the plant successional process; and
g) enhancement of springs to increase summer and fall water sources for riparian vegetation and wildlife species.

Coniferous forest:

a) silvicultural practices for wildlife objectives (conifer tree planting, selective tree harvesting, thinning, prescribed burning) to improve forest canopy characteristics for optimum wildlife habitat conditions.

Riparian/Mixed Forest/Shoreline:

a) establishment of perennial vegetation to increase wildlife habitat values;
b) removal of competing vegetation to improve vertical and structural habitat diversity; and
c) placement of 20-30 small 0.9-1.2 meter (3-4 foot) wide, 0.6 meter (2 foot) high rock structures in Nine Mile and Sclome creeks to raise water tables and stabilize stream bottoms.

Agricultural lands:

a) irrigated and non-irrigated wildlife food plot establishment and cultivation to improve wildlife winter food sources;
b) conversion of pasture and croplands to increase wildlife habitat;
c) controlled burning to improve wildlife habitat values; and
d) restoration of 4-6 small 0.1 hectare (1/4 acre) wetland areas to support additional aquatic/riparian vegetation and provide wildlife water sources.

Shrub-steppe and grassland:

a) weed control (herbicide applications, mechanical, and hand pulling) along roadways and within the project area to slow spread of noxious weeds;
b) planting of perennial vegetation (bunchgrasses, sagebrush, bitterbrush and grasses) to improve wildlife habitat values; and
c) controlled burning to improve wildlife habitat values.

2.3.2.3 Proposed Operation and Maintenance Activities

As part of this alternative, BPA funding of O&M would continue for the number of years as defined in the terms of the Colville Confederated Tribes/BPA Management and Funding Agreement. Proposed O&M activities within the project area (by habitat type) may include:

All habitat types:

a) fence maintenance to control domestic livestock trespass;
b) weed control (herbicide applications, mechanical, and hand pulling) along roadways and within the project area to slow spread of noxious weeds

into the project area and eventual control and elimination of weed species;
c) road management, including installation and maintenance of main access gates, cattle guards, road maintenance, including permanent or seasonal closures to control public access;
d) amendment and update of management plans;
e) fire suppression to protect wildlife habitat resources;
f) prescribed burning (frequent low intensity burns in dry forest habitats; and hotter broadcast burns in wetter sites) to simulate the natural role of fire in the plant successional process; and
g) spring maintenance to increase summer and fall water sources for wildlife and riparian vegetation.

Coniferous Forest:

a) vegetation management (controlled burning, thinning of young age tree classes) to maintain optimum habitat values;
b) silvicultural practices as necessary to maintain forested habitats in sustainable wildlife habitat conditions; and
c) fertilization of forest vegetation to maintain optimum wildlife habitat conditions.

Riparian/Mixed Forest/Shoreline:

a) vegetation management (controlled burning, mowing, grazing or herbicide applications) as necessary to maintain optimum habitat values; and
b) fertilization of perennial vegetation to maintain optimum wildlife habitat conditions.

Agricultural lands:

a) cultivation, planting and irrigation of croplands including food plots of grains and alfalfa; or cover plots of grass/herbaceous plant mixtures;
b) vegetation management (controlled burning, mowing, grazing ,and herbicide applications) as necessary to maintain optimum habitat values in converted habitat plots;
c) maintenance of pumping and sprinkling equipment to maintain wildlife habitat and/or food plot values; and
d) fertilization of perennial vegetation to maintain optimum wildlife habitat conditions.

Shrub-steppe and grassland:

a) vegetation management (controlled burning, mowing, grazing or herbicide applications) as necessary to maintain optimum habitat values; and
b) fertilization of perennial grass plots to maintain optimum wildlife habitat conditions.

2.3.2.4 Proposed Monitoring and Evaluation Activities

As part of this alternative, BPA funding of M&E would continue for the number of years defined by the terms of the Colville Confederated Tribes/BPA Management and Funding Agreement. M&E of a site would begin immediately after land is secured for the Project. Initial baseline surveys to document the land's current condition and maps of existing vegetation and habitat types are required. Additional long-term monitoring to evaluate changes in site-specific and/or overall project area conditions may include:

a) wildlife population trends and habitat use;
b) vegetative community composition; plant succession stage and associated changes;
c) public use;
d) winter wildlife population trends;
e) historic, prehistoric and traditional cultural use sites;
f) snag and other nesting cavity availability;
g) forest health; and
h) food plot use and longevity.

CHAPTER 3: AFFECTED ENVIRONMENT

3.1 Physical Environment

3.1.1 Climate

The Colville Indian Reservation is located in Okanogan and Ferry Counties in northeastern Washington State. Summers near the project area are characterized as warm to hot in most valleys and much cooler in the higher mountain elevations. Typically, July and August are the hottest months. The average daily maximum temperature is around 29 ^{0}C (85 ^{0}F) at Chief Joseph Dam and 28 ^{0}C (83 ^{0}F) at Coulee Dam and Inchelium. The highest recorded temperature of 43 ^{0}C (110 ^{0}F) occurred at two locations, Coulee Dam and Nespelem on August 4, 1961. Winter temperatures are typically cold in the mountains, and because of cold air drainage patterns winter valley temperatures are usually colder than the slopes. The average daily minimum temperatures for the Chief Joseph Dam and Coulee Dam locations are around -6 ^{0}C (22 ^{0}F), while about -7 ^{0}C (20 ^{0}F) at Inchelium and Nespelem. The lowest recorded temperature of -39 ^{0}C (-38 ^{0}F) occurred at Republic on December 30, 1968.

The average yearly precipitation at Nespelem, Washington, located 11.3 km (7 mi) east of the project area, is 48.3 cm (19 in). From 1924 to 1960, 16 of the 37 years received over 51 cm (20 in) of precipitation while six received less than 38 cm (15 in). At the project area, drier conditions are documented. The average annual rainfall ranges from 28 to 51 cm (11 to 20 in), and in normal years the average annual precipitation is approximately 36 cm (14 in). Overall, the precipitation patterns in this area of eastern Washington are typically light during the spring and summer, then increase in the fall and peak in winter. The maximum precipitation in winter coincides with the greatest frequency of Pacific storms crossing the State. An appreciable portion of the winter precipitation occurs as snow. Typically, winter storms are of light intensity and long duration. Late spring and summer rainfall frequently occurs as showers or thunderstorms, and amounts are variable. Generally, prevailing winds are from the southwest (Campbell and Rolf, 1986).

3.1.2 Physiography

Most of the Colville Indian Reservation is located within the geographic province known as the Okanogan Highlands. The remainder is within the Columbia Plateau, known locally as the Okanogan Plateau which occupies the southwest portion of the Reservation. Elevations range from 238 m (780 ft) at the mouth of the Okanogan River to 2,065 m (6,774 ft) at the summit of Moses Mountain.

Portions of the project area located within the Okanogan Highlands are influenced by two major north-south trending mountain chains. These are the Kettle River Range and the Nespelem Range. The topography of the mountain ranges varies between glaciated and non-glaciated landforms. Those formerly glaciated areas are characterized by smooth,

rounded mountain summits and wide U-shaped valleys. Exposed bedrock resulting from the glacial scouring is very evident. This is in contrast to the non-glaciated areas of the Highlands which are V-shaped in nature, with steep slopes and narrow valleys. The Kettle River Range is in the eastern part of the project area and forms the divide between the Columbia River to the east and south, and the Sanpoil River to the west. Grizzly Mountain, with an elevation of 1,950 m (6,397 ft), is the highest peak in this range. The Nespelem Range is in the central portion of the Reservation and forms the divide between the Sanpoil River to the east and the Columbia and Okanogan Rivers to the south and west. The Okanogan Plateau in the southwest portion of the Reservation represents the northernmost extension of the Columbia Plateau. Elevations range from 610 to 884 m (2,000 to 2,900 ft). Typically, those portions of the project area located in the Okanogan Plateau are characterized by nearly level to gently sloping relief and many small lakes and ponds that resulted from Pleistocene era glaciation processes (Campbell and Rolf, 1986).

The rivers and most of the major creeks are flanked by flood plains and terraces of recent alluvium, with higher terraces of glacial outwash and glacial lake sediments.

3.1.3 Soils

Residual soils of the project area are derived from the weathering of underlying granite, basaltic, and metamorphic bedrock formations. Soil depths generally vary with the rate of weathering and degree of slope. Because the parent material in the project area is varied and diversified, several different soil types within a comparatively small area have been produced. Most soil types in the non-glaciated areas are thin and are described as course or well-drained. On steep slopes they are prone to mass movement or sliding.

Range and forest soils located on the terraces, terrace escarpments, dunes, hills, and mountains in the glaciated portion of the project area are usually deeper, and well drained. The group of soils that occupy the Columbia River terraces, the main valley floor, and a few of the lateral valleys that are tributary to the main valley trough, were formed by the Pleistocene era glacial outwash that resulted from streams flowing from the ice front. These alluvial soil types are characterized by accumulations of variable textures mixed with varying proportions of gravel, pebbles, and boulders. Derived from weathered bedrock materials and glacial ground materials, these soils vary greatly in texture but are mostly coarse (sandy to gravely) and well drained. Specific Soil Conservation Service descriptions of the individual soils series found in the project area can be obtained in the *Soil Survey of Stevens County Washington* (1982).

Soil permeability of the overall project area is generally moderate to rapid, and water retention ranges from low to very high. Runoff can be slow to rapid depending upon the percent of slope: on 0 to 25 percent slopes, runoff is slow to medium and water erosion potential is slight to moderate; on 25 to 40 percent slopes, runoff is rapid and the hazard of water erosion is high; and on 40 to 65 percent slopes, runoff is extremely rapid and the hazard of water erosion is very high. Certain areas along the river terraces and the banks of Lake Roosevelt experience the highest degree of mass movement. At steeper locations

in the project area, slumping, earthflows, debris flows, rockslides, and rockfalls have occurred at road cutbacks and fills, and sidecast debris sites.

3.1.4 Water

3.1.4.1 Water Quantity

The Columbia River is impounded by Chief Joseph and Grand Coulee dams in the project area vicinity. Roughly 3.2 km (2 mi) of frontage on the Rufus Woods reservoir and 14.5 km (9 mi) of the Franklin Roosevelt reservoir are included in the project area. In 1994, the U.S.Geological Survey reported an average discharge of the mainstem Columbia River at Grand Coulee Dam at about 97,486 million m^3/year (79 million acre-ft/year). An additional 3.2 km (2 mi) of project area acreage fronts on the Sanpoil River and Nine Mile Creek, the two most significant tributaries in the project vicinity. The Sanpoil River drains an area of about 2,539 km^2 (980 mi^2) of which an area of about 1,373 km^2 (930 mi^2) is within the Reservation (Beak Consultants, 1980). The median annual flow is reported at 6.9 m^3/s (243 cfs), with a minimum flow in late summer or early fall of less than 0.3 m^3/s (10 cfs). Peak flows normally occur in April and May. Larger perennial streams such as Nine Mile Creek typically report average annual flows of around 0.9 m^3/s (32 cfs) and minimum flows of 0.1 m^3/s (3.77 cfs) (Halfmoon,1978). The Tribal Geographic Information System depicts 13 perennial springs and numerous intermittent streams within the project area. Water quantity data is unavailable, however, for these smaller streams and springs.

3.1.4.2 Water Quality

Mainstem Columbia River: Point sources of pollution from Canadian reaches of the Columbia River affecting Lake Roosevelt and other downstream reservoirs are the Celgar Pulp Mill located near Castlegar, B.C., and the Cominco Lead and Zinc smelter located in Trail, B.C. Pulp mill products containing large amounts of dioxin, furans, and fiber have been directly discharged into the river over the past 30-40 years. The Cominco plant has been discharging 272,160- 362,880 kg (300-400 tons) of slag per day in the river for at least the same time period. Other sources of pollution are the Cominco fertilizer plant which discharges phosphorous and the Trail Sewage Treatment plant that occasionally dumps raw sewage into the river. Past and present studies both in Canada and in the U.S. at Lake Roosevelt have found large amounts of heavy metals and trace elements in the water. Studies showing dioxin and furans in fish also indicate a significant problem. More studies have been recommended by federal, state, and regional entities to determine the level of dioxin and furans in the deeper sediments and to determine how operation of the reservoir may distribute the toxins further into the food chain (BPA, 1994).

Point sources of pollution in the U.S. entering Lake Roosevelt come mainly from old and new mines and untreated storm sewage entering from the Spokane River. Non-point sources are added to the Columbia and Spokane Rivers from past and present agricultural and forestry practices. Although the magnitude of non-point pollution affects are

unknown at this time, studies are underway to better determine the levels of water quality impact from these sources (BPA, 1994).

Sanpoil River: Water quality above the Sanpoil Arm is considered good in this drainage with no known point sources of pollution entering the river from the upstream reaches. The water is moderately alkaline, however, ranging from 58 mg/l to 93 mg/l $CaCO_3$. Snow-melt in the months of April and May is responsible for producing relatively low alkalinity values during spring season periods (Beak Consultants, 1980).

Land use practices within the watershed include BIA range management and timber management activities. The current level of cattle grazing is set at roughly 2000 animal units. The low to moderate levels of nutrient loading in the river, and existing bank erosion problems are primarily due to cattle that freely roam the riparian areas. Presently, annual timber harvest levels for the overall sub-basin are established at a 10-12 million board foot cut (BIA, Sanpoil District, 1994). Over the past 20-30 years the sustained level of timber harvesting has contributed to a moderate to high increase in stream sedimentation levels. The Sanpoil River currently falls within (the Tribal) Type 1 stream category (CCT, Environmental Trust Dept., 1980).

Ninemile Creek: Water quality of Ninemile Creek is considered good although nutrient loading from livestock use on both sides of stream can occur in localized areas. Presently, 80 percent of the stream surface area is in small, shallow pools with little vegetative cover. Because of the lack of shading, these shallow areas can experience extreme summer stream temperatures (Halfmoon, 1978). Ninemile Creek segments currently fall within either Type 2 or Type 3 (fish bearing) stream categories (CCT, Environmental Trust Dept., 1980).

3.1.5 Air

The remote location, steep mountainous terrain, daily wind patterns, and westerly maritime storm patterns influence the Reservation project area. These conditions produce optimum atmospheric mixing conditions that help to maintain excellent air quality conditions over most of the year.

The Colville Reservation is a Class II airshed under the Clean Air Act (42 U.S.C. Section 7474(c)). The Environmental Protection Agency's (EPA) regulations for the prevention of significant deterioration of air quality allow for only small increases in ambient levels of particulate matter and sulfur dioxide. Presently, the Class II designation does not affect Tribal and other agricultural and timber industry waste disposal methods presently occurring within Okanogan or Ferry Counties in the State of Washington.

The State of Washington has a State Implementation Plan for administering, monitoring, and enforcing the Clean Air Act in its Eastern Division of the Department of Ecology. Presently, the State of Washington does not monitor PM-10 conditions (particulate matter common in smoke and dust) in Okanogan or Ferry Counties (McGuire, 1994). However,

the Colville Agency of the BIA works in cooperation with the State of Washington for all prescribed burning operations conducted on the Colville Indian Reservation.

3.2 Biological Resources

3.2.1 Vegetation and Noxious Weeds

3.2.1.1 Vegetative Cover Types

Seven general cover types exist within the three-ranch project area. Shrub-steppe, agricultural, coniferous forest, mixed forest, riparian, rock, and shoreline acreage's are shown for each of the properties in Table 3.1.

Table 3.1 Existing Habitat Cover Type Acreage.

Cover Type	Wm Kuhne	Henry Kuhne	Berg Brothers	Total (Acres)	% of Total
Shrub-Steppe	1,985	1,974	5,062	9,021	55
Agricultural	1,137	1,064	625	2,826	17
Coniferous forest	1,620	1,325	255	3,200	20
Riparian	147	99	20	266	2
Rock	35				
Shoreline	14	26	90	130	1
Mixed forest	4	678	248	930	5
TOTAL	4,943	5,166	6,300	16,408	100

Shrub-steppe: Shrub-steppe habitat in the project area is defined by drier sites that are occupied by shrubs and herbaceous vegetation. Typically, the ground surface is dominated by grasses, bare ground, litter, rock, and erosion pavement. The shrub-steppe zone is primarily rangeland, devoid of tree canopy closure, and dominated by understory species such as bitterbrush, sagebrush, rabbitbrush, cactus, serviceberry, and currant. Project area grass species within this cover type include bluebunch wheatgrass, needle-and-thread, Idaho fescue, basin wildrye, and some annuals like cheatgrass. Presently, this cover type dominates the project area and is roughly 3651 hectares (9,021 acres) or 55 percent of the three ranch area. Reduced diversity and productivity of native shrub-steppe communities, as described by Daubenmire (1970), is a result of the high level of cattle and horse densities associated with the past and present cattle ranching activities.

Ecologically, the Ponderosa pine savanna cover type closely resembles the shrub-steppe classification because of the high degree of shrub density. Because of this similarity, these individual cover types were combined for purposes of this assessment. Shrubs, especially antelope bitterbrush, are the most common understory species, although Columbia hawthorn, red-osier dogwood, common snowberry, serviceberry, rose, mockorange and Oregon grape can be found in some areas. The dominant tree is the Ponderosa pine, typically found scattered over the area in clumps or standing alone. Bluebunch wheatgrass and Idaho fescue bunchgrasses are also common understory species. Microclimate

conditions are commonly too harsh in this cover type for successful tree establishment. High levels of past and present cattle and horse densities associated with cattle ranching have also reduced the diversity and productivity of the native plant communities of this cover type.

Agricultural: Agricultural cover types are 17 percent of the total project area or 1,144 hectares (2,826 acres). This habitat cover type is characterized by production of crops such as cereal grains, alfalfa hay; and land taken out of production for the Conservation Reserve Program (CRP) (See Section 3.3.2.3). As crops are cultivated and harvested, habitat quality is limited by the large seasonal variations in vegetative structure. Today, CRP lands make up a majority of the agricultural lands in the project area and are typically planted in alfalfa, intermediate wheatgrass, and crested wheatgrass. Other annual species such as cheatgrass and Japanese brome are also present in these areas.

Coniferous Forest: Coniferous forest habitat is characterized by intermixed stands of Ponderosa pine, Douglas fir, larch, and/or grand fir with varying understory vegetation. Understory species may include oceanspray, current, redstem ceanothus, ninebark, snowberry, bitterbrush, and Myrtle boxwood. This cover type presently makes up 1,295 hectares (3,200 acres) or 20 percent of the total project area.

Riparian: Riparian habitat consists of areas that are directly influenced by water year-round including streams, lakes, ponds, ephemeral springs, or meadows that may or may not contain deciduous trees and shrubs. Common trees and shrubs of this cover type can include: alder, aspen, cottonwood, red-osier dogwood, Columbia hawthorn, willow, water birch, serviceberry, chokecherry, smooth sumac, blue-berry elder, snowberry, and rose species. On wet sites devoid of trees and shrubs, herbaceous hydrophytes such as cattail, bulrush, pondweed, sedge, and watermilfoil can be found. This cover type occupies 108 hectares (266 acres) or 2 percent of the total area but is extremely important for food, shelter, and nesting habitat for a wide variety of wildlife species.

Rock: Rock habitat is located on rocky, steep, or difficult topography and occurs mainly on talus, scree or boulder strewn slopes, or major rock outcrops along Lake Roosevelt. Typical vegetation includes deep rooted shrubs of serviceberry, mockorange, and chokecherry. Grasses include bluebunch wheatgrass, sandberg bluegrass, and cheatgrass. Forbs include arrowleaf balsamroot, buckwheat, and bitterroot. This cover type, only 14 hectares (35 acres), is 0.7 percent of the William Kuhne total. Rock habitat acreage for the other two properties is unavailable at this time.

Shoreline: Shoreline cover types are essentially the drawdown zones of Lake Roosevelt and Rufus Woods Lake and are best described as narrow beaches or barren strips of land bordering the reservoirs. While low water levels expose long, wide stretches of this cover type, full pool levels severely limit suitable shoreline habitats. Project area beaches are typically composed of sand, gravel, cobble, rock, or boulders. Depending on gradient and soils, this cover type may contain some vegetation such as grasses, herbs and shrubs. This small cover type of approximately 53 hectares (130 acres) at full pool elevations is roughly

one percent of the project area and is dependent upon water levels controlled by Grand Coulee and Chief Joseph Dams.

Mixed Forest: Serving as a transition zone between riparian and coniferous forest, mixed forest habitat is characterized by areas covered in both coniferous and deciduous trees and with a variety of understory vegetation and grasses. Presently, 376 hectares (930 acres) or 5 percent of the project area contains this cover type.

3.2.1.2 Noxious Weeds

Concentrated in patches or strung out along roads, moderate to heavy noxious weed populations occur throughout the project area. Although noxious weeds are increasing, large portions of the project area are still relatively free of noxious weed problems. The primary noxious weed species of concern are knapweeds. Spotted, diffuse, and Russian knapweeds commonly occur although St. Johnswort (goat weed), Canada thistle, and Scotch thistle are also frequent. At this time,the knapweeds are rapidly spreading, largely due to vehicle travel within the area, while the thistle species appear more static to slowly spreading (Berger, 1994).

3.2.2 Wildlife

The following description of existing wildlife resources is based on published and unpublished literature and studies conducted on the Colville Reservation. Appendix B is a representative list of plants, birds, mammals, amphibians and reptiles occurring in the project area.

3.2.2.1 Existing and Affected Wildlife

Wildlife resources on the project lands include mammals, birds, reptiles, and amphibians. Wildlife distribution and productivity is dependent on suitable habitat as defined by cover type conditions. Vegetative cover types, as described above, provide the requirements for necessary life functions including breeding, nesting, hiding, loafing, feeding and traveling. Important game species commonly found in all vegetative cover types of the Reservation are white-tailed and mule deer. Presently, moderate populations of deer use the project area year round, although deer numbers increase dramatically when migrating animals move onto winter range locations. Recent data from ongoing deer population surveys indicate that the present mule deer to white-tail ratio is about 1:1 (1993). Currently, deer population levels are relatively stable, although fawn to doe ratios are in decline because of ongoing drought conditions (Judd, 1994). Currently, there is a good population of Rocky Mountain elk that use portions of the project area on a seasonal basis. Black bear are abundant throughout the Reservation and are a common resident of project lands. Furbearers and predators such as coyote, bobcat, cougar and badger also occur in moderate numbers.

The project area vicinity offers good habitat for a variety of bird species. Habitat features associated with existing vegetation zones are adequate to support moderate populations of

nesting raptors such as goshawk, American kestrel, Cooper's hawk, red-tailed hawk, great horned owl, osprey, and golden eagle, and upland game species such as California quail, gray and chukar partridge and a few Merriam's turkey. Moderate populations of forest grouse occur and portions of the project area also support a small population of sharp-tailed grouse (see Appendix B).

Distribution of waterfowl on the project area is limited, due to the minor extent of riparian and wetland habitat. Canada geese regularly use the reservoir and shoreline areas, however, and commonly feed on adjacent project lands. Although the Sanpoil River receives considerable seasonal use by ducks and other waterfowl, a limited number of ducks use the reservoir and shoreline areas. Small beaver ponds and creeks of the project area are also frequented by waterfowl, but to a much lesser extent. Colonial nesting birds, such as Great blue herons, are sometimes observed feeding on small fish, amphibians, and insects along the shallower margins of the rivers and small ponds. Presently, the status of reptile and amphibian populations is unknown.

3.2.3 Threatened and Endangered Species

The bald eagle, gray wolf, and peregrine falcon are federally listed species identified by the U.S. Fish and Wildlife Service (USFWS) as occurring within either the project area or vicinity. Wintering bald eagles are often observed eating fish and deer carrion along the Columbia and Sanpoil River portions of project area and the shores of nearby large inland lakes. Bald eagle nesting activity also occurs in two adjacent locations from about January 1, through August 15. Gray wolf and spring and fall migrating falcons may also occur in the vicinity of the Project.

There is one known State Species of Special Concern, the western bluebird (Siala mexicana). Typically, Western bluebirds feed on insects in open woodlands, pastures, burned areas with snags, and other open areas with scattered trees. The population limiting factor is the availability of nest cavities located in or near open feeding areas. Nests are built in abandoned woodpecker holes and natural tree cavities.

3.3 Social, Economic, and Cultural Resources

3.3.1 Cultural Resources

The Berg Ranch portion of the project area is located in the lower reaches of the prehistoric and historic area of the Okanogan Tribe and Bands. The project area vicinity has been and is shared to this day with the Nespelem Tribe to the east. Archaeological information now extends the past occupation of this area from 9,000 to 11,000 years. Past land uses have included the hunting of large and small game for meat, gathering of roots, berries, fiber resources and other materials for tools. Summer months were spent fishing, hunting, and collecting roots, berries and materials used for baskets, bags, and medicines. Subsistence fishing for food and trade was done along the rivers.

Traditionally, some of the Okanogan and Nespelem people ranged widely to hunt sheep, buffalo, and other large game animals as well as to the coast to trade for materials, tools, and medicines. In winter months, the people usually traveled south to collect and trade for fine materials to make their stone tools. During this time, the people would process buckskin, furs, blankets, tools, baskets, bags, and other things needed for harvesting and collecting roots and berries. Typically, camps were open to accommodate travelers from other tribes, their relatives and in-laws. Today, subsistence hunting and fishing, and the gathering of many types of roots and berries on the Reservation, are still an important supplement to family income (Fredin, 1994).

The Kuhne portion of the project area was equally important to the Sanpoil people. Similar to the activities and conditions described for the Okanogan and Nespelem tribes and bands, typical land uses included fishing, hunting, digging roots, collecting berries, medicines, and materials. Of key importance, however, was the confluence area of the Sanpoil and Columbia Rivers. Traditionally, this was an important gathering place of the people for trading, gambling, socializing, and competing in games and races. Even 30 years ago, there were people who could remember and describe the confluence gathering area before Lake Roosevelt inundated the site in the 1930's. After the reservoir filled, the Sanpoil River gathering place was moved to a new location further upstream.

3.3.1.1 Archaeological Sites

Numerous ethnoarchaeological reconnaissance field surveys by Jaehnig and others (1981), Chance (1970-1980), Cleveland (1976), McClure (1978) and others have been conducted in the project area vicinity. The field surveys and other research has confirmed the presence of cultural resource sites close to the Columbia and Sanpoil Rivers and their tributaries and confirms that the project vicinity was heavily used by the Sinkaietk (Southern Okanogan), Nespelem, and Sanpoil people in the past (Fredin, 1994). While some sites have been damaged or destroyed through present activities such as reservoir operations, logging, road construction, and grazing, evidence is sufficient to conclude that the Columbia River area below Grand Coulee Dam to Chief Joseph Dam was likely used for winter villages and seasonal hunting camps. An Archaeological District on Rufus Woods Reservoir includes portions of the Berg property shorelines.

The streams, springs, and creeks in the higher elevations of the Sanpoil drainage produced enough water to support full occupation of two-five seasonal hunting camps. Although the higher elevation camp sites have not been surveyed, physical evidence has been observed and collected from these sites. Some of these former campsites are important to the people today for religious and ceremonial purposes. At present the entire project area is considered by the Colville Confederated Tribes to have a high potential for discovery of cultural sites (Fredin, 1994).

3.3.1.2 Native Food, Fiber, and Medicine Plants

Native food, fiber, and medicine plants are important cultural resources to the Colville Confederated Tribes. In the past, the seasonal movement of the Tribe was closely tied to harvest times of certain native plant species. After harvesting, native plant materials (bulbs, berries, lichen) were eaten fresh, cooked, or dried and stored for later use. Today, many of these same foods and medicines are used by Tribal members, particularly the elders.

The project area once contained some unique native raw plant materials needed for traditional purposes. A limited variety of native food and medicinal plants are presently found in project area habitats due to the extensive grazing and farm related land use practices. The specific native plant species used for food and materials by Tribal members are discussed at length by Nancy J. Turner et. al. in *Ethnobotany of the Okanagan-Colville Indians of British Columbia* (1980).

3.3.2 Current Land Use

3.3.2.1 Agricultural Practices

Application of a wide variety of chemical fertilizers, herbicides, and pesticides is a common farm practice in the State of Washington. Presently, the type and application of farm chemicals used within the Reservation boundaries is regulated by land category. The BIA and the Colville Confederated Tribes regulate Tribal trust property and allotments, while fee title lands generally fall under State regulation. The EPA, BIA, and State of Washington require individual farmers to record and report chemical usage on a seven-year basis. Two handbooks, Pacific Northwest Weed Control Handbook, and the Crop Protection Chemical Reference, provide guidance on what chemicals can be used in the State. Restricted chemicals, and label restrictions (when and where applied) are also provided.

The EPA and the BIA restrict the use of several chemical herbicides on the Reservation due to residual soil effects and moderate to high potential for leaching into surface and/or ground water (Cleveland, 1994). To avoid adverse effects, Tribal and State regulations apply to all aerial applications and applications of restricted chemical pesticides and herbicides near streams. Individual training and a State applicators license is required prior to the use of a restricted chemical.

It is reported by the current land owners that project area croplands, roughly 17 percent of the total project area, receive a very low level of chemical fertilizers, herbicides or pesticides on an annual basis. Presently, grain crops are the only category of agricultural lands [24-49 hectares (60-120 acres)] which annually receive chemical fertilizer and/or herbicide (2,4,D and Tordon) applications (Judd, 1994).

3.3.2.2 Range Management

Although carrying capacity of the privately held rangelands has not been calculated, by BIA Range Management staff or others, the following level of annual cattle grazing use was reported by the landowners:

Bill Kuhne 400-600 head;
Henry Kuhne 400-600 head;
Berg Bros. 300-500 head.

The level of range management practices is unknown, although some of the project area range has been fenced.

3.3.2.3 Conservation Reserve Program (CRP)

The CRP is a U.S. Department of Agriculture, Agricultural Stabilization Commodities Service program. Individual farmers voluntarily agree to take highly erodable soil types out of production and to plant them with perennial grasses and/or trees over a ten-year period. The renewable ten-year CRP contract provides annual compensation of about $50 per acre for crop harvesting, grazing, and other restrictions to the individual landowners participating in the Program. The CRP agreement is transferable when land is sold or ownership is changed. Presently, a total of 400 hectares (987 acres) within the project area is designated as CRP land. Ongoing CRP compensation of $23,000 for the 187 hectares (463 acres) of the former Bill Kuhne property (purchased by BPA) was transferred to the Tribal F&W Department custodians and is dedicated to partially offsetting the former ranch's annual maintenance budget. As reported by Henry Kuhne, (1994) the CRP contract for 212 hectares (524 acres) on his property will terminate on December 31, 1996. The Berg brothers are not involved at this time in the CRP program. As potential owners of the project area properties, the Colville Confederated Tribes would be interested in transferring existing CRP contracts in the future.

3.3.2.4 Prime Farmlands

Currently, there are 10-15 soil types on the Reservation that are designated as unique and prime farmland when irrigated. It is estimated that approximately 405-810 hectares (1000-2000 acres) of these highly productive soil types are located within the three ranch project area. Presently, none are known to be irrigated (Rolf, 1994).

3.3.2.5 Forestry Practices

Currently, all project area forest lands are in private ownership or have been recently purchased for the Project. At the present, timber as a merchantable crop occurs on approximately 560 hectares (1,383 acres) of the former Bill Kuhne property purchased by BPA. The preponderance of the timber volume lies in young-growth Ponderosa pine

(60 percent of the stand composition) which comprises the highest species stumpage value. The average volume per acre of 2.57 thousand board feet (from all species) represents only a residual of the former timber stands that were heavily logged over the past 10-12 years. BPA timber appraisal records (1992) indicate a total remaining volume on this property of around 3.55 million board feet of small diameter trees. For federal appraisal purposes, the BPA Land Branch (1992) estimated the stumpage value at $162 per 1000 board feet or a total commercial forest value of about $2.3 million.

Due to low precipitation rates, tree regeneration (140 to 240 trees per acre) is rather low in the lower elevations of the benches and terraces overlooking the FDR Reservoir. With increased precipitation rates in the higher elevations, regeneration success is higher, ranging from 280 to 320 trees per acre. East side Washington State forest practices call for a minimum stocking level of 150 trees per acre which could leave some parcels a little short at 140. Although a significant threat is not implied, the timber cruise revealed some incidence of mountain pine beetle in small pockets of the lower stands. Also revealed was a widespread infestation of dwarf mistletoe which was probably thwarted to some degree by recent harvests. Growth measurements in higher elevation Ponderosa pine stands show good growth rate response as a result of the past logging practices that opened the forest canopy (BPA, 1992).

Tree thinning and other tree farm activities have occurred at the Henry Kuhne property where approximately 536 timbered hectares (1,325 acres) are located. Although some timber harvesting has occurred in the past on this property, it has been reported a larger portion of the older tree age-classes have been retained. Similar in physical character to the William Kuhne property, a Federal land appraisal and a timber cruise to better determine the amount of available commercial timber and its economic value will be forthcoming (Judd, 1994).

Although 103 hectares (255 acres) of the Berg Brother ranch is classified as scattered density coniferous forest, little to no forest practices or timber harvest activity is reported for this portion of the project area. A Federal land appraisal and a timber cruise to better determine the amount of commercial timber and its economic value will be forthcoming (Judd, 1994).

3.3.2.6 County Revenues Produced

Presently, property taxes are paid to Ferry and Okanogan Counties for all deeded (fee patent) lands located on the Reservation. This includes about 70 percent of the project area or 4,640 hectares (11,466 acres). The Ferry and Okanogan County Assessor Offices and the Washington Department of Revenue report several tax codes for these privately held lands, and taxes that are assessed at various rates. After examination of public tax records, it is estimated a reduction of less than one percent of either county's budget could be attributed to conversion of H. Kuhne or Berg fee patent lands to trust status. Presently, neither Colville Confederated Tribes nor BPA is paying Ferry County property taxes for the former William Kuhne property (Stay, 1994).

3.3.2.7 Transportation

Although public access is limited on private lands, road density is moderate to high in the project area. Most primitive farm and logging roads were originally constructed to provide access to farm fields and timber. County and BIA System Roads are part of the permanent transportation system and are estimated to receive low to moderate use. The following breakout provides current road types and approximate mileage for the individual ranches (Berger, 1994).

- Bill Kuhne:
  County Roads: 805 m (1/2 mi);
  BIA Forest Roads: 6.4 km (4 mi); and
  Farm Roads/Logging Access Spur Roads: 17.7 km (11 mi).

- Henry Kuhne:
  County Roads: 6.4 km (4 mi);
  BIA Forest Roads: 4.8 km (3 mi); and
  Farm Roads/Logging Access Spur Roads: 11.3 km (7 mi).

- Berg Brothers:
  BIA Forest Roads: 9.7 km (6 mi); and
  Farm Roads/Logging Access Spur Roads: 11.3 km (7 mi).

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

No-Action: Alternative A

Alternative A would allow the continuation of the wildlife trends and project area conditions as established in Chapter 3. With or without the proposed actions, human use will continue to grow, increasing strain on the natural resources of the project area vicinity. Without wildlife habitat restoration, further declines in native vegetation and wildlife populations can be predicted. Agricultural and forestry land management trends would continue to fluctuate with local, regional, and national economic patterns. Preferred lifestyles and practices of traditional Tribal members would continue to decline as more and more natural areas are converted to other uses or developed for recreational purposes. If no action is taken, the tax base of Okanogan and Ferry Counties would not be affected, as fee patent (private) land within the Reservation would not be converted to trust status unless acquired through other Tribal programs.

The effect of ground disturbing activities associated with Alternative A, such as continued farming, grazing, and timber harvesting, would have a high potential for sustaining adverse impacts on wildlife habitat and cultural resources. Continued cattle grazing at existing or higher levels would sustain the adverse impacts to native bunchgrasses, which are part of the basis of winter elk forage. Other more long-term effects are potential increases in soil compaction, soil erosion levels, and the reduction of total grassland production that would limit winter forage and other wildlife habitat values. Under Alternative A, early successional plant species that naturally pioneer revegetation of newly created openings would be favored. The result of intensive grazing and logging practices would be the continued decline of those native plants, at the end of the successional process, that require near-climax and old-growth habitat conditions for survival.

The continued commercial logging activities in Alternative A would result in increased amounts of disturbed soils and thus a greater amount of seedbeds for noxious weeds. The potential for the spread of noxious weeds would be accelerated as increased amounts of soils are disturbed and the incidence of site reentry is increased. In the long-term, continued commercial timber harvesting activities may result in noxious weed population levels that cannot be eliminated economically. As noxious weeds increase in number and displace desirable vegetation, forage production levels of the native bunchgrasses, and in some cases tree regeneration levels, could be decreased.

Alternative A ground disturbing activities would have a high potential for impacting undiscovered cultural resources. The degree of site-specific disturbance, however, would depend on the type of activity, weather condition, soil type, and the number of times the ground was disturbed. Direct impacts to artifacts could include alteration of an artifact through compositional changes, breakage, vertical and horizontal displacement, and loss or removal from the archaeological record. Indirect impacts could be caused by increased

soil erosion and the uncovering of a site after grazing, cultivation, or harvesting activities have ceased. Potentially, this could occur a month later or even years afterwards.

Land Acquisition and Habitat Enhancement: Alternative B

The objective of Alternative B is to protect and enhance the long-term quality of wildlife habitat within the project area. If implemented, Alternative B would result in microclimate conditions more suitable for wintering wildlife and an increase of riparian and upland perennial plant communities throughout the project area. Presently, project area riparian and upland conditions are less than desirable for wildlife habitat purposes. This is primarily due to the extent of logging, farming and livestock grazing practices that have reduced native vegetation diversity and productivity. The proposed riparian and upland wildlife habitat enhancement activities in this alternative would be the first step in the rehabilitation of a large core area for wildlife management. Other anticipated resource benefits would include cleaner surface water, increased protection for cultural resources, and a more diverse natural landscape.

4.1 Physical Environment

4.1.1 Climate

Although Alternative B activities would have no known effect on regional climatic patterns, key objectives of the Project are dependent on how effectively microclimates can be changed to benefit wildlife species. Microclimate effects of enhancing or thinning the forest canopy, for example, would directly benefit wintering wildlife species by increasing or optimizing thermal retention on the forest floor, and by decreasing snow accumulations beneath the trees. Wildlife species would benefit from the moderated temperatures and the increased winter accessibility to understory forage and browse plant species. In early spring months, the increased shading would result in a slower snow melt period. This is desirable because the water can be absorbed into soils over a longer period, rather than quickly running off. In summer and early fall seasons increased shading in riparian areas would help to reduce air and stream temperatures. In the long-term, the microclimate processes contribute towards reduced soil erosion, increased soil moisture conditions, and increased water quantity and quality benefits in localized subwatersheds and stream courses (See Section 4.1.4.1. Water Quantity).

4.1.2 Physiography

Proposed Alternative B activities would have no known effect on the overall landforms located within the project area. Physiography (slope, aspect, and elevation) would continue to have a direct effect on microclimatic conditions, the plants that have evolved to match them, and ultimately the success of proposed revegetation efforts (Satterlund, 1972).

4.1.3 Soils

Alternative B objectives include prescribed burning, enhancement of riparian areas near springs and streams, and restoration of 4-6 former wetland areas of about 0.1 hectares (1/4 acres) for wildlife habitat purposes. In the long-term, wetter or increased soil moisture conditions could be expected, as wetland and riparian areas are enhanced or returned to their former condition. Of potential concern are activities that may disturb or expose areas on steep slopes or on poorly drained soils near water bodies where care must be given to avoid an increase in the rate of soil transport and stream sedimentation. In project areas with steep slopes (greater than 25 percent) or poorly drained soil types the quick re-establishment of native or other perennial vegetation communities, and development of water bars and/or other techniques would occur as appropriate to reduce the hazard of water erosion.

The timing of shoreline, riparian, and upland enhancement activities is also important to avoid potential soil compaction, increased sedimentation in streams, and other adverse effects on aquatic organisms. To avoid potential adverse water quality effects, enhancement activities near existing springs and streams would take place only in the driest portion of the year when streamflows and water levels are at their lowest. Enhancement activities would be planned and constructed in coordination with Colville Confederated Tribes Environmental Trust, Fish and Wildlife, Land Operations, or other divisions of the Department of Natural Resources, as necessary, to ensure compliance with Tribal water quality standards.

4.1.4 Water

4.1.4.1 Water Quantity

In Alternative B, commercial timber harvesting and livestock grazing would end, trees and shrub-steppe/grassland cover types would be protected and enhanced, and several miles of road would be closed. Overall, these activities would have no measurable effect on the net amount of surface water leaving the project area. Potentially, some differences may be observed in the timing and return of localized streamflows as upland and riparian vegetation is re-established. In the long-term, more vegetation should increase the evapotranspiration rate, slow surface water runoff, and increase water infiltration into uncompacted soils. Ground water levels could become higher in localized areas as the amount of riparian and wetland acreage increases. Over time, Alternative B could result in lower peak streamflows and longer streamflow periods for the project area tributaries.

An adverse effect on water quantity is not expected because irrigated wildlife food plots in the agricultural cover types (adjacent to the Columbia River) would be limited in number and very small in comparison to existing irrigated croplands. At the most, the amount of surface water used to irrigate project area properties for wildlife purposes would be less than the amount currently pumped for crop production. Observable changes, in water quantity, as a result of the Project are unexpected.

4.1.4.2 Water Quality

Long-term protection of existing riparian systems and restoration of damaged riparian areas, as proposed in Alternative B, would increase bank stabilization, increase shading, lower stream temperatures, and reduce inputs of sediment and pollutants into project area streams (Sclome, Ninemile, other creeks, and the Sanpoil River). The installation of check dam structures, water source developments, and vegetation re-establishment, however, may temporarily increase sedimentation in water courses to some degree during the time of construction. These effects are predicted to be local and of short duration. All construction work performed in or near bodies of water would be planned and completed in coordination with the Colville Confederated Tribes Environmental Trust, Fish and Wildlife, Land Operations, or other divisions of the Department of Natural Resources necessary to ensure compliance with Tribal water quality standards.

4.1.5 Air

In Alternative B, the halt of commercial logging and grazing and an overall reduction of general road use (in the project area) would decrease dust, smoke, and vehicle engine emissions from current levels. Prescribed burning and other near-term enhancement activities to improve habitat conditions could produce smoke or expose mineral soils to wind action and result in temporary reductions in air quality in localized areas. Although more frequent springtime underburning could be implemented, in the near-term, smoke quantity would be less over time, as desirable wildlife habitat conditions are reached and outdoor burning requirements are lessened. To avoid the potential for adverse air quality effects, standard BIA fire protocols involving timing and distribution of burns would be followed prior to and during burning activities. In the long-term, ambient air quality would improve under this alternative and Class II attainment would be preserved.

4.2 Biological Resources

4.2.1 Vegetation and Noxious Weeds

Important components of Alternative B are the re-establishment of native vegetation communities, vegetation management to improve habitat diversity, site protection by fencing, and termination of land use practices harmful to native vegetation. Re-establishment of native vegetation would provide the greatest habitat value possible, with long-term benefits for wildlife populations and traditional cultural uses. Fencing the perimeter of the project area and terminating grazing and logging practices harmful to native vegetation could increase wildlife habitat benefits within a single growing season. Potentially, management activities may be required to control weed infestations in disturbed areas or areas with exposed soils. Enhancement activities that restore large and vigorous native plant communities, combined with road closures, should provide the most cost-effective and practical means of future weed control. Proposed O&M activities

would focus on increasing native vegetation communities. Proposed M&E would guide these activities to ensure that success is achieved.

Near-term effects of native vegetation restoration may include the potential disturbance of wildlife populations presently using the existing vegetative cover types. For example, potential effects to ground nesting birds could result from the removal of non-native weed species in spring and early summer. To avoid adverse effects on wildlife species, management activities that include burning or herbicide treatments would be timed to avoid key nesting and reproduction seasons.

4.2.1.1 Potential Effects on Vegetation by Cover Type

Conifer Forest: In Alternative B, commercial harvest activities would be greatly reduced from existing practices. Harvesting or thinning of trees would only occur to manipulate canopy cover characteristics necessary to optimize wildlife habitat conditions. In the long-term, tree planting, harvesting, thinning, and controlled burning activities should increase the quality and diversity of plant species that make up the forest overstory and understory. Depending on localized site conditions, it is expected that habitat improvement could take from 1-3 years for an observable response. In the near-term, potential adverse effects to native vegetation are not predicted. This is because all age classes of trees and other native plant species would be protected and increased over time. Burning or herbicide treatments would be conducted at appropriate seasons and timed to avoid adverse impacts to existing wildlife populations.

Riparian/Mixed Forest/Shoreline: The establishment of perennial vegetation, removal of vegetation to improve vertical and structural habitat diversity, placement of small rock check dams in streams, enhancement of hillside springs, and control of noxious weeds, should increase the quality and diversity of the riparian, mixed forest, and shoreline cover types now present. Control of grazing practices within riparian corridors and around springs would allow for quicker restoration of native shrubs and herbs, and allow hardwood trees to propagate. Quaking aspen recruitment and planting could increase habitat benefits within a relatively short time frame (5-10 years) as the young trees grow in height. Cattle removal and shrub revegetation would promote stabilization of streambanks to varying degrees and lessen soil erosion problems.

In those areas with existing native riparian shrub and herb communities, habitat improvement may be observable within 2-5 years. The increase in groundwater tables, river and creek surface flows, and water quality factors, including reduced soil transport and stream temperatures, should improve submersed macrophyte populations and increase substrate for macroinvertebrates, fish and wildlife. Thinning and underburning would speed development of large trees in the overstory and increase desired canopy cover levels for deer. Ceanothus and other fire dependent shrub species preferred as deer browse would respond positively to controlled burning. In heavily degraded areas where land use practices have decreased habitat values for most of the riparian cover types, longer periods may be required to restore native plant communities. Depending on localized site

conditions, it is expected that vegetation replanting and control of cattle grazing would increase wildlife habitat benefits over a much longer period. In degraded areas, habitat improvement may require a minimum of 10-20 years and could take at least 3 years for an observable response.

Due to the presence of water, restoration of native plant cover types at riverine and creek bank zones could improve wildlife habitat quality in a relative short period or to the point of observable results within 2-5 years. Any work in or near water bodies to enhance streams or springs could involve the potential for soils entering streams or water. Although increases of stream sedimentation would be localized to construction sites and of short duration, the use of heavy equipment would be avoided to the extent possible to minimize potential water quality impacts. Work activities would comply with terms and conditions established in Federal permits or the Tribal Environmental Trust Division water code requirements to ensure Tribal water quality standards are maintained.

Shrub-steppe and grassland: Depending on specific site conditions, the quantity of shrub-steppe and grassland vegetation and the quality of wildlife habitat under Alternative B could be increased in 2-3 years. Observable improvements in habitat suitability could result within 3 years in some areas. By excluding cattle from existing native grass pastures, an immediate improvement in native plant productivity, especially in species such as bluebunch wheatgrass, should be observed. As a result, the habitat quality of ground nesting birds could be increased within a 1-2 year timeframe. Controlling competing weed species such as thistles and knapweed, that increase with livestock grazing use and vehicle traffic, would also favor native plant productivity. Potentially, native grass and shrub communities could be partially restored in heavily disturbed sites within 3-5 years. In areas close to a water source and with high soil productivity, restoration of perennial shrub and grass communities could be expected to occur at a quicker pace.

Controlled burning in this cover type could provide increased habitat benefits by reducing the amount of available fuel sources. This is beneficial for decreasing the risk of large uncontrolled wildfires, and for increasing regeneration of fire-dependent shrubs, such as ceanothus, that are valuable as deer browse species. Although bitterbrush is an additional shrub preferred by deer as a winter food, it is not a fire-sprouting species and can be severely reduced or destroyed by fire. Care would be given to prevent and suppress wild fire in this cover type to avoid potential adverse affects to existing deer winter range.

Because weed control, and other revegetation efforts would take place only in areas that have either been disturbed in the past or contain large non-native plant communities, negative effects to existing native vegetation species are not predicted. To avoid any potential impact to remnant native plant communities, however, areas not requiring restoration would be identified and protected.

4.2.1.2 Noxious Weeds

It is nearly impossible to predict the rate of spread of noxious weeds within the project area. The spread of noxious weeds such as knapweed occurs primarily by vehicle traffic carrying seed and plant parts from one site to another. Logging, road maintenance, and earth-moving equipment operated in infested areas also contribute to the increase in the rate of collection and transportation of seeds. Noxious weed control, including the use of herbicides, would be pursued in Alternative B. To avoid adverse effects on non-targeted species and to avoid transportation of chemicals to ground water or surface water, all chemical applications would be coordinated with BIA-Lands Operations. The purpose would be to ensure that EPA, BIA, and State of Washington chemical and label restrictions are followed and that the public is advised when and where chemicals are used.

The proposed wildlife management activities in Alternative B may help to immediately control the rate of spread of noxious weeds in a number of ways. First, less soil disturbance and fewer seedbed sites would be expected due to the halt of commercial logging and grazing activities. Second, reduced road traffic levels due to proposed road closures would mean less collection and transportation of seeds by vehicles. In the long-term, the amount of herbicide application would decrease due to the lesser degree of soil exposed to seed sources and the crowding or shading out of weed species as native plant communities expand.

4.2.2 Wildlife

The process of securing and enhancing land for wildlife, as proposed in Alternative B, would provide both immediate and long-term benefits for wildlife populations. Immediate benefits would be realized by maintaining the habitat qualities now present. The halt of agricultural, grazing, and logging practices that decrease wildlife habitat values and enhancement of existing conditions would provide long-term benefits by ensuring that wildlife habitat values are maintained and increased.

Noxious weed removal, revegetation and other habitat enhancement activities, as proposed in Alternative B, would be completed in a manner and time frame that would least disturb the wildlife present. Disturbances due to construction and other enhancement activities are expected to be of short duration, and localized in nature. Near-term disturbance of wildlife should be offset within one growing season by the greatly increased habitat values. To avoid recurring disturbances, reconstruction of habitats would be designed to the extent possible for minimizing the amount of annual operation and maintenance required. Monitoring and evaluation, although an integral part of Alternative B, would be performed in the most non-invasive manner feasible.

4.2.2.1 Potential Wildlife Effects by Cover Type

Riparian/Mixed forest: The removal of domestic livestock should increase plant cover and wildlife benefits within a single growing season. As native hardwood and coniferous trees

re-establish and mature over time, cavity dependent birds such as bluebirds and Lewis' woodpeckers would benefit from the increased nesting habitat. Perching birds and raptors would also benefit from the increased diversity of forest layers. Improved riparian shrub and herb conditions would increase nesting, feeding and cover habitat for bird species such as yellow warblers and California quail, and for mammals such as mule deer and cottontail rabbits.

Restoration of riparian vegetation adjacent to riverine areas could contribute to increased water quantity and quality. In the long-term this could increase the amount of submersed macrophytes and invertebrates in the river and creek systems. Waterfowl and other avian species which feed on these plants and animals would benefit in direct proportion to the amount of food supply available. Because a large number of wildlife species use riparian areas for a portion of their life cycles, restoration of even a small amount of riparian habitat should begin an upward trend in a large number of wildlife populations. In the long-term, the increase of riparian habitat types should result in increased wildlife species diversity in the river and creek vicinities.

Agricultural: Many species of wildlife would benefit from conversion of croplands back to native vegetation. Establishment of perennial grasses on some existing cropland areas would increase available ground nesting habitat within a single growing season. For many upland bird and waterfowl species, this would also increase food availability during critical winter and reproductive seasons. Cereal grain and forage crops beneficial for wintering wildlife would continue to be grown at some existing cropland sites to augment winter food sources. Over time, restoration of small wetlands and ponds on formerly leveled and drained farmlands would increase the amount of shorelines, riparian, and aquatic vegetation. This would benefit many wetland associated species, such as American bittern, spotted sandpiper, and muskrat.

Shoreline: Restoration of small wetland systems would increase shoreline habitat for waterfowl production, shorebird feeding and use by colonial nesting birds in areas which are not influenced by Columbia River reservoir operations. Proposed wetland restoration activities such as digging or blasting could create short-term disturbances to wildlife populations presently using the agricultural cover type. Construction and other habitat enhancement activities would be planned to avoid critical nesting and brood-rearing seasons. Disturbance of existing site vegetation (even though of cultivated plants) could temporarily reduce the habitat quality of the existing project area. To avoid potential impacts to breeding waterfowl, shorebirds, colonial nesting birds, or other wildlife populations, restoration activities would be timed to occur from mid-summer to late-winter.

Coniferous Forest: In contrast to the tree farming and timber harvesting practices of the present, securing the project area and safeguarding the remaining forest cover types would protect existing wildlife habitat values and allow for improvement in wildlife populations. Raptor populations, for example, should respond very quickly to improved habitat conditions and in direct proportion to the increase in small mammal and other prey

populations. In the long-term, the existing old-growth age class pine and fir tree densities could be maintained and ultimately increased. Over time, the development of dense, multi-layered stands of older trees with interlocking canopies would improve winter thermal conditions and increase body heat retention of the wildlife species below. The availability of older aged tree classes would increase nesting and hunting perches for bald eagle, osprey, and other raptors. Two corvid species, gray jay and Clark's nutcracker, would also benefit for the same reasons. Primary cavity nesters, such as pileated and other woodpeckers, would increase with the added numbers of larger snags, and old-growth trees that are used for foraging perches and nest sites. Secondary cavity nesters, including the western bluebird, would benefit in the same manner.

Restoration activities such as silvicultural practices (tree planting, selective tree harvesting, thinning, prescribed burning) to improve forest canopy characteristics, would be completed in a manner and time frame that would least disturb wildlife species present. Disturbances due to noise or construction are expected to be of short duration, and localized in nature. Near-term disturbance of wildlife should be offset within one growing season by the greatly increased habitat values. To avoid recurring disturbances, reconstruction of forest habitats would be designed to minimize the amount of annual O&M activities required. M&E activities such as visual surveys of wildlife populations and wildlife habitat conditions would have no known adverse environmental effect.

Shrub-steppe/grassland: Improving the condition of the shrub-steppe and grassland plant communities by fencing and removal of free roaming cattle should increase the quantity and quality of habitat available for a wide variety of wildlife species within a single growing season. In the long-term, ground nesting bird populations, such as western meadowlark, northern harrier, and mallard, should increase in direct proportion to the increase of undisturbed shrub-steppe and grassland cover. Small mammal populations and raptors are also expected to increase. To avoid potential impacts to ground nesting bird populations, all groundwork, including weed control and controlled burning, would be avoided during the spring reproductive season when feasible.

4.2.3 Threatened and Endangered Species

Federally listed species that may occur in the project area are bald eagle, gray wolf, and peregrine falcon (Frederick, 1994). To date, gray wolves and peregrine falcons have not been observed in the project area vicinity. Near-term disturbance from enhancement and other project activities is therefore unexpected. Two bald eagle nests, however, are located adjacent to the project area and wintering bald eagles are commonly observed. To minimize any potential adverse effects on nesting bald eagles, public access by motorized vehicle would be limited. With fewer vehicles and people in the project area the potential disturbance of nesting bald eagles would be reduced.

As the old-growth forest and riparian habitat conditions improve over time, bald eagle, peregrine falcon and other raptor populations should directly benefit from the improved perching and foraging opportunities. An increase of bald eagle nesting sites could result in

increased nesting activities. It is anticipated that near term adverse effects on wintering bald eagles would be minimal because the majority of initial habitat enhancement work in riparian areas would occur from late April through October (a time when bald eagles are not present). All activities that would increase prey species would be beneficial for peregrine falcon in both the near and long-term. Endangered Species Act consultation with the USFWS has been completed. In a letter dated September 15, 1994, the USFWS concurred that no adverse effects on listed species are anticipated as a result of the Project.

4.3 Social, Economic, and Cultural Resources

4.3.1 Cultural Resources

Archaeological, cultural, and historic resources must be carefully managed to prevent resources from being destroyed. In addition, information collected from sites discovered during management activities must be properly handled to preserve historic and cultural values.

In accordance with the requirements of the Colville Confederated Tribes Integrated Resource Management Plan (in progress), Tribal cultural resource staff shall participate in the site planning process and coordinate the cultural resource survey and all other efforts required to protect cultural resources. Upon acquisition of property for the Project, the Site Plan developed for each location should document how proposed activities:

- Affect any known prehistoric, historic, or ethnographic site;
- Protect, preserve, stabilize, and enhance through education, respect, and restoration, native North American peoples' traditional values and places;
- Comply with cultural resource objectives or provide direction for how they can be made compatible including development of alternative strategies or locations for various developments or actions if the need should arise;
- Comply with the accepted cultural resource management and research protocols established for the Project; and
- Provide for precedence of cultural resources over all other intended uses in the event of a conflict.

4.3.1.1 Archaeological Sites

The wildlife enhancement activities, as proposed in Alternative B, would have a reduced potential for affecting cultural resources because fewer ground disturbing activities would occur. In the long-term, native and perennial vegetation restoration and silvicultural activities designed to increase wildlife habitat could simultaneously serve to protect, preserve, stabilize, or enhance archaeological sites. In Alternative B, cultural surveys would be conducted by Colville Confederated Tribes cultural and historical staff prior to ground disturbing activities to prevent adverse effects and to meet Federal and Tribal

requirements. As discussed below in greater detail, four categories of mitigative actions are recommended when or if cultural resource sites are identified: (1) total avoidance of known cultural resources by wildlife enhancement actions; (2) the creation of buffer zones designed to protect sites from looting and/or other negative impacts; (3) stabilization of endangered sites and locations; and (4) revegetation of those areas impacted by logging, cattle grazing, and/or other development activities.

Cultural Resource Mitigation Actions

(1) Avoidance (Protection): Site-specific surveys shall be used to determine which areas must be totally avoided because of their historic or cultural importance to the Colville Confederated Tribes. In such areas, either no activities would be allowed or activities would be restricted to specific actions identified by the Tribal Cultural Representative. For example, areas where pit houses or burial sites are located would be avoided.

(2) Buffer Zones (Preservation): Buffer zones shall be established to increase protection of sensitive sites where little human activity is desired. The establishment of thick native shrub and forest species is recommended for establishing these barriers. Because the buffers would be composed of natural vegetation, they should not draw undue attention to the areas they are protecting.

(3) Stabilization: Stabilization of sensitive cultural resource sites should be used in areas where the sites are in danger of being lost because of past land use practices. Such sites could be stabilized to varying degrees by the re-establishment of perennial vegetation. Wildlife enhancement activities as proposed in Alternative B should be designed whenever possible to provide wildlife benefits while stabilizing historic or cultural sites. Such opportunities would provide an example of the compatibility of wildlife habitat restoration goals with those that increase protection for the historic and cultural resources of the Colville Confederated Tribes.

(4) Revegetation (Enhancement): Revegetation could be conducted in a manner similar to stabilization, but would be used in areas where logging, cattle grazing, or other land use activities have removed the ground cover. The goal of revegetation would be to provide wildlife habitat and to protect a cultural resource site from looting or vandalism. Food, medicine, and materials sites could also be revegetated with appropriate species to provide sites within the project area that could be used for traditional gathering. This strategy would provide an opportunity for wildlife and historic and cultural resource goals to be achieved simultaneously.

4.3.1.2 Native Food, Fiber, and Medicine Plants

Overall, Alternative B would provide a wider range of habitat, especially for native plants associated with climax succession. Although plants with seral (mixed shrub and tree) habitat requirements may decline in riparian zones, use of fire would continue to provide some early successional age-classes. In the long-term, Alternative B would provide increased food and medicine plants associated with the older age-class of forest, which is more limited on the Reservation than early successional vegetative types. In this alternative, road management and chemical control would reduce noxious weeds in the near-term, thus favoring native food and medicinal plants. Increased riparian and wetland acreage as a result of this alternative should result in increased plant diversity and an increase in the number of plants required for traditional uses.

4.3.2 Current Land Use

4.3.2.1 Agricultural Practices

The extent of fertilizer and herbicide applications, as proposed in Alternative B, is expected to be limited in amount and to decrease over time. In the long-term, site-specific chemical use would decrease due to the lesser extent of soils being exposed to noxious weed seed sources and the crowding or shading out of weed species as desirable native plant communities expand. When used to control noxious weeds, site-specific herbicide selections would conform to EPA and BIA requirements regarding chemical and label restrictions. Use of chemical fertilizers would occur only to enhance soil conditions when plots are established or plants are young. Use of chemical fertilizers would decrease as newly established plantings gain in vigor. To avoid adverse effects on non-targeted species and to avoid transportation of chemicals to ground water or surface water, all chemical applications would be coordinated with BIA-Lands Operations. The purpose would be to ensure that EPA, BIA, and State of Washington chemical and label restrictions are followed and that the public is advised when and where chemicals are used.

4.3.2.2 Range Management

Alternative B would terminate almost all grazing by domestic livestock to preserve range and open lands for wildlife purposes. Limited grazing by domestic livestock would be allowed in Alternative B, but only as a management tool. Potential adverse effects are not predicted for grazing of limited numbers of livestock in controlled situations for wildlife purposes. Near and long-term benefits for wildlife would be provided in a number of ways from enhancing goose pasture and spring brooding conditions, to the trampling of tall grain or corn forage plants for easier accessibility by wintering waterfowl.

4.3.2.3 Conservation Reserve Program (CRP)

Neither Alternative would have a known effect on the continuing CRP. Landowners in Alternative A are interested in maintaining existing contracts to reduce or maintain soil

4.3.2.4 Prime Farmlands

Because long-term restoration of wildlife habitat is not an irreversible process, irreversible adverse effects on designated prime farmlands or unique soil designations are not expected as a result of implementing Alternative B. Restoration of wetland, riparian, or upland wildlife habitat is viewed by the Soil Conservation Service and the BIA as a beneficial activity that would help to preserve, stabilize, and enhance soil productivity levels. Habitat restoration would not change the prime and unique farmland designations or preclude farm use in the future if required through the declaration of a national emergency (Rolf, 1994).

4.3.2.5 Forestry Practices

Alternative B would dramatically change private forestry practices. Future timber harvests would occur only to meet wildlife objectives. Trees would be cut only to thin dense stands, speed development of old-growth conditions, or to create openings for species such as sharp-tailed grouse. Prescribed burning would be used by BIA staff to simulate the natural role of fire in the successional process. No long-term adverse effects on vegetation, air quality, or wildlife are expected because the burns at any given time would be quite limited in area and timed to avoid weather conditions that might fail to facilitate smoke dispersal. Controlled burning in this alternative would provide habitat benefits by creating or maintaining openings and would help to reduce the amount of available fuel sources, thus reducing the risk of large uncontrolled wildfires. In Alternative B, BIA staff would be responsible for suppression of project area wildfires. This would provide organized fire protection for both the existing and restored wildlife habitats.

4.3.2.6 County Revenues Produced

After examination of public tax records, it is estimated a reduction of less than one percent of either Ferry or Okanogan County's budget could be attributed to project area conversions.

4.3.2.7 Transportation

Adverse road closure effects are not expected in Alternative B because public access has been limited in the past due to private ownership of the project area. Although an approximate 40 km (25 mi) of farm and logging access spur roads could be closed with soil berms and steel gates, road surfaces would not be ripped or re-contoured as part of this alternative. This is an important factor in retaining their use for emergency fire management access. Seasonal closures of BIA Forest roads could occur in some areas December 1 through March 31 during the peak of eagle, deer, and elk winter use. No adverse effects are predicted because little or no recreational use occurs during this time period.

CHAPTER 5: COMPLIANCE WITH ENVIRONMENTAL PROTECTION STATUTES

Consistent with the requirements of NEPA and the implementing regulations issued by the Council on Environmental Quality (40 C.F.R. 1500), this assessment includes a review of project compliance with relevant statutes and the executive orders listed below.

5.1 Federal Statutes Applicable to the Proposed Action

- **Endangered Species Act, 16 U.S.C. 1531 et seq.**

BPA consultation with the USFWS pursuant to Section 7 of the Endangered Species Act has been completed. The USFWS concurred in a letter dated September 15, 1994, that adverse effects on listed species are not anticipated.

- **Cultural Resource Legislation, Executive Order 11593; Archaeological and Historical Preservation Act of 1966 as amended, 16 U.S.C. 469 et seq., Public Law No. 92-291**

Numerous cultural resource reconnaissance surveys by Jaehnig and others (1981), Chance (1970-1980), Cleveland (1976) McClure (1978) and others have been conducted in the project area vicinity. Their reports indicate a high probability of the presence of prehistoric and historic resources of significance within project area locations (Fredine, 1994). BPA has contacted the Washington State Historic Preservation Office (SHPO) to request a search of the State data base. Cultural resource field surveys of the project area will be undertaken prior to any habitat enhancement activities. These surveys will follow the Colville Confederated Tribes management and research protocols, and the Federal and state guidelines established for such surveys. No ground disturbing activities will be conducted until field surveys are completed. If a cultural or historical resource is discovered during a field survey, BPA, Colville Confederated Tribes, and BIA will report findings and discuss mitigation measures with the appropriate SHPO authorities. The Colville Confederated Tribes, BPA, and BIA will avoid enhancement activities that will adversely impact historical or cultural resources.

- **Clean Air Act, as amended, 42 U.S.C. 7609 et seq.**

Prescribed burns and vegetation management activities would be limited in extent or size and conducted in accordance with EPA Class II airshed guidelines. Prescribed burning activities would continue to be coordinated with the Eastern Regional Office of the Washington Department of Ecology and the local Fire Districts. No permanent emission sources would be constructed as a result of this Project.

- **Resource Conservation and Recovery Act, 42 U.S.C. 6910 et seq.**

This Act regulates the storage, use, and disposal of solid and hazardous waste. It is the policy of the Colville Confederated Tribes, BPA, and BIA to perform an Environmental Land Audit (ELA) or equivalent examination prior to the purchase of any real property (e.g., fee title, easements, or leases as appropriate). The purpose of the ELA is to determine whether contaminants are located within the boundaries of the subject property or whether there is a risk of offsite contaminants migrating onto the subject property. To ensure that contaminant concerns have been addressed adequately, the highest level of ELA (Level I, II, III or combination) would be conducted, as appropriate, prior to securing property for the Project.

- **Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. 136 et seq.**

This Act regulates the manufacture and use of pesticides. Herbicides (a form of pesticide) would be used to control incompatible weedy vegetation within the project area. Only EPA approved herbicides would be used, and only according to manufacturers' labels. Herbicides would be employed by licensed applicators only on an as needed basis.

- **Farmland Protection Policy Act: 7 U.S.C. 4201 et seq.**

No irreversable effects to project area "Unique or Prime Farmland" designations are expected because wildlife habitat enhancement and restoration activities are reversible land use conditions that would not preclude future farming practices if required.

5.2 Tribal Requirements Applicable to the Proposed Action

All activities would occur in compliance with requirements of the forthcoming Colville Confederated Tribes Integrated Resource Management Plan. Activities that may affect natural resources would be done in compliance with the policies and programs of the Colville Confederated Tribes.

The Project would be conducted in consultation and coordination with the following Tribal programs and departments falling within the Department of Natural Resources:

- Colville Confederated Tribes, Department of Natural Resources:
  - Forestry
  - Land Operations
  - Environmental Trust (water resources)
  - Fish and Wildlife
  - Cultural Resources

CHAPTER 6: CONSULTATION AND COORDINATION

6.1 Coordination

The Preliminary EA was sent to the State of Washington Department of Ecology Clearinghouse, the Colville Confederated Tribes, and the interested public for review and comment on January 18, 1995. The comment period closed on February 6, 1995. BPA received no comments addressing the Project.

6.2 Agencies and Persons Contacted

The following individuals were contacted for information regarding the development of this document:

Bonneville Power Administration	Joe DeHerrera, Linda McKinney, Robert Shank, John Taves, Robert Walker, Nancy Weintraub
Colville Confederated Tribes	Matt Berger, Gary Dunlop, Adeline Fredin, Steve Judd, Alan Stay, Patty Stone
Bureau of Indian Affairs	June Boynton, William Cleveland, Jim Orwin, Steve Rolf, Stanley Speaks, Bill Stevens
U.S. Fish and Wildlife Service	Jodi Bush, Dave Frederick, Kristi Swisher
U.S.D.A., Soil Conservation Service	Bill McGuire
Washington Department of Ecology	Susan Billings, Pat McGuire
Washington Office of Archaeology and Historic Preservation	Robert Whitlam

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APPENDICES

APPENDIX A: WASHINGTON WILDLIFE MITIGATION AGREEMENT

WASHINGTON WILDLIFE MITIGATION AGREEMENT
among members of
the WASHINGTON WILDLIFE COALITION OF RESOURCE AGENCIES
AND TRIBES
and
the BONNEVILLE POWER ADMINISTRATION

This WASHINGTON WILDLIFE MITIGATION AGREEMENT (Agreement) is made among the members of the Washington Wildlife Coalition of Resource Agencies and Tribes and the Bonneville Power Administration.

WITNESSETH

WHEREAS Federal dams were constructed in the Columbia River in, or along the border of, the State of Washington;

WHEREAS construction of these dams adversely affect wildlife in the State of Washington, including Indian reservations, ceded lands, and other lands located within the State of Washington;

WHEREAS, section 4(h) of the Pacific Northwest Electric Power Planning and Conservation Act, Pub. L. 96-501 (Northwest Power Act) includes provisions for the protection, mitigation, and enhancement of fish and wildlife affected by the development, and operation of hydroelectric facilities of the Columbia River Basin;

WHEREAS, Section 4(h)(10)(A) of the Northwest Power Act authorizes the Administrator of the BPA to use the BPA fund to

protect, mitigate, and enhance fish and wildlife affected by the development and operation of hydroelectric facilities of the Columbia River Basin;

WHEREAS, the Northwest Power Planning Council (Council) in its Columbia River Basin Fish and Wildlife Program (Program), identified the need for wildlife protection, mitigation, and enhancement with respect to hydroelectric facilities in the Columbia River Basin;

WHEREAS, the Coalition is an organization of certain entities interested in wildlife in the State of Washington (Coalition Members), and these Coalition Members have authority to engage in protection, mitigation and enhancement of fish and wildlife described by this Agreement;

NOW, THEREFORE, the Coalition and BPA agree as follows:

1. Purpose

The purpose of this Agreement is to (a) establish a budget of money by BPA for Projects proposed by Coalition Members and approved by BPA for the protection, mitigation, and enhancement of wildlife and/or wildlife habitat within the State of Washington affected by the construction of the following Federal dams in the Columbia River: Grand Coulee, Chief Joseph, Bonneville, The Dalles, John Day, and McNary (hereinafter "Federal dams"); (b) to establish a method for the expeditious use of this budget; and (c) secure a commitment to negotiate a long-term agreement..

2. Definitions

a. Agreement means this agreement among BPA and Coalition Members.

b. Bonneville Power Administration or BPA means the Bonneville Power Administration, a Federal power marketing agency created by the Bonneville Project Act.

c. Coalition means the Washington Wildlife Coalition of Resource Agencies and Tribes when the Coalition Members are acting as a body.

d. Coalition Member or Coalition Members means any of the following entities:

i. the Washington Department of Wildlife (WDW);

ii. the Confederated Tribes of the Colville Reservation (CCT);

iii. the Confederated Tribes of the Umatilla Indian Reservation (CTUIR);

iv. the Yakima Indian Nation (YIN);

v. the United States Fish and Wildlife Service (USFWS); and

vi. the Spokane Tribe of Indians.

e. Congress means the Congress of the United States or any of its committees, including the House and Senate Appropriations Committees.

f. Council means the Pacific Northwest Electric Power and Conservation Planning Council created by Section 4 of the Pacific Northwest Electric Power Planning and Conservation Act, Pub. L. No. 96-501.

g. Executive Branch means the President of the United States, and any of the departments, agencies or offices responsible to the President.

h. Fiscal Year means the Federal fiscal year beginning October 1 and ending September 30.

i. Fish and Wildlife Program means the Fish and Wildlife Program developed and as amended by the Council pursuant to the Northwest Power Act to protect, mitigate, and enhance fish and wildlife on the Columbia River and its tributaries.

j. Land means real property, and interest in the real property, including any improvements to or on the land.

k. Mitigate includes to protect, mitigate, and enhance wildlife and/or wildlife habitat, and Mitigation includes the protection, mitigation, and enhancement of wildlife and/or wildlife habitat.

l. Monitoring and Evaluation means the methodology developed by Coalition Members and BPA to assess wildlife and/or wildlife habitat benefits resulting from Projects under this Agreement.

m. Pacific Northwest Electric Power Planning and Conservation Act, or Northwest Power Act means the Pacific Northwest Electric Power Planning and Conservation Act, Pub. L. 96-501, 16 U.S.C. 839 et seq., and as it may be amended.

n. Parties means the entities that have signed this Agreement.

o. Project or Projects mean all mitigation activities undertaken pursuant to this Agreement, including acquisitions and enhancements.

p. Term means the period of time the Agreement is in effect.

q. Wildlife or Associated Wildlife means any and all wildlife species associated with the habitat within the State of Washington affected by the construction of Federal dams in the Columbia River.

3. Agents and Addresses

Written notices given pursuant to this Agreement shall be mailed by first-class mail, postage prepaid, to each Party at the address listed below or such subsequent address as a Party shall identify by written notice to all other Parties. Notices shall be deemed to be given five (5) days after mailing. The addresses of the Parties and the names of the current addressees are:

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Portland, OR 97232-4181

4. Term

This Agreement shall become effective on the day the last Party signs. This Agreement, together with all responsibilities incurred pursuant to this Agreement, shall terminate on September 30, 1997, or when all of the funds budgeted pursuant to this Agreement have been expended, whichever date is later, *provided, however*, that the termination of this Agreement shall not affect the obligation of BPA in section 5.b.xi to continue funding for the operation and maintenance of projects approved during the term of this Agreement. The Parties may enter into other agreements that create responsibilities continuing beyond the term of this Agreement.

5. Provision of Funds

a. Budget

i. In its annual budget submitted to the Executive Branch, BPA shall include and support the amounts shown for the five fiscal years identified in the following Wildlife Budget Table to mitigate wildlife and/or wildlife habitat in satisfaction of the purpose described in section 1(a) of this Agreement.

Wildlife Budget Table
(Annual and Total Budget Amounts)

Fiscal Year Ending September 30:					
1993	1994	1995	1996	1997	5-Yr. Total
$8.3 million	$ 5.5 million	$5.5 million	$12.85 million	$13.35 million	$45.5 million

ii. The amount budgeted by BPA for a specific fiscal year shall not be available for obligation until the beginning of that fiscal year unless BPA, at its option, agrees to make the funds available earlier.

iii. Expenditures and obligations by BPA to implement Projects approved by BPA shall not exceed the total budget amount ($45.5 million) set forth in the Wildlife Budget Table in section 5.a.i of this Agreement, except for continued operation and maintenance of Projects pursuant to section 5.b.xi.

iv. Expenditures and obligations by BPA to implement Projects approved by BPA shall be consistent with the following percentages of the annual and total budget amounts set forth in the Wildlife Budget Table in section 5.a.i of this Agreement:

aa. 48% of the annual and total budget amounts shall be available for projects proposed by WDW and approved by BPA;

bb. 20% of the annual and total budget amounts shall be available for projects proposed by CCT and approved by BPA;

cc. 11.3% of the annual and total budget amounts shall be available for projects proposed by CTUIR and approved by BPA;

dd. 10.7% of the annual and total budget amounts shall be available for projects proposed by YIN and approved by BPA;

ee. 6% of the annual and total budget amounts shall be available for projects proposed by USFWS and approved by BPA; and

ff. 4% of the annual and total budget amounts shall be available for projects proposed by Spokane Tribe and approved by BPA;

Provided, however, that Coalition Members may agree to change these percentages.

v. If BPA expenditures and obligations during a fiscal year for projects proposed by a Coalition Member are less than the product of the annual budget amount for that fiscal year multiplied by the percentage associated with that Coalition Member in section 5.a.iv of this Agreement, then the difference shall be available for projects proposed by that Coalition Member and approved by BPA during the remainder of the term of this Agreement.

vi. BPA shall keep a record of budget amounts available for obligation and of expenditures and obligations for Projects proposed by Coalition Members and approved by BPA.

b. Review of Projects

i. BPA shall use the budgeted amounts to implement wildlife mitigation Projects in the State of Washington that have been approved by BPA consistent with this Agreement, unless affirmatively restricted by Congress or the Executive Branch of the United States.

ii. BPA has already approved, subject only to analyses in compliance with applicable environmental laws, the Projects described in the following table.

Proposing Coalition Member	Approved Project
YIN	Lower Yakima Valley riparian Wetlands
WDW	Vancouver Lowlands
WDW	Douglas County Pygmy Rabbit
CCT	Hellsgate Big Game Range
Spokane Tribe	Blue Creek Winter Range
WDW	Lincoln County Sharp Tailed Grouse

This Agreement applies to these Projects. Expenditures for these Projects shall be from the budget amounts set forth in the Wildlife Budget Table in section 5.a.i of this Agreement. However, the cost of BPA's environmental review, if any, shall be borne by BPA and shall not be paid from the budget amounts in the Wildlife Budget Table in Section 5.a.i. The extent of implementation shall be consistent with the budget principles in Section 5.a.

iii. Coalition Members may propose to BPA for implementation Projects in addition to the Projects identified in section 5.b.ii. Coalition Members may propose individual projects.

multiple projects, or a plan for implementation of Projects. Projects and plans proposed by Coalition Members may be coordinated among the Coalition Members and shall not violate the budget principles set forth in section 5.a of this Agreement, and shall satisfy the general conditions set forth in section 5.c of this Agreement.

iv. A Coalition Member, at or prior to the time of submitting a proposal to BPA, may engage in a public involvement process where the public is given an opportunity to comment on the proposal. If a Coalition Member undertakes a public involvement process, the Coalition Member shall give notice to interested persons, including the Council and members of the Policy Review Group, and shall provide all interested persons a reasonable opportunity to comment. All parties to this Agreement and the Council may participate in the process, and the Coalition Member shall reasonably make available copies of documents developed in connection with the process. The Coalition Member shall timely submit copies of all public involvement materials, including public comments, to BPA. If a Coalition Member conducts a public involvement process, then BPA shall not conduct a second public involvement process. If a Coalition Member does not conduct a public involvement process, then BPA may conduct a public involvement process.

v. If a Coalition Member has undertaken a public involvement process, then BPA shall approve or disapprove a project proposal within 45 days of the date of receipt of copies of the Coalition Member's public involvement materials and complete project proposal.

vi. If a Coalition Member has not undertaken a public involvement process, then BPA shall approve or disapprove a project within 120 days of the date that the Coalition Member submits a complete project proposal to BPA.

vii. If BPA approves a proposal, then BPA shall commence implementation in accordance with section 5.d. If BPA does not approve a proposal or supports revisions to a proposal, then BPA shall explain in writing the basis for its disapproval or proposed revision and identify criteria in section 5.c that the proposed project does not meet. If BPA does not approve a proposal or supports revisions to a proposal, then BPA and the proposing Coalition Member will endeavor to resolve any differences in opinion. To achieve resolution of any differences in opinion, BPA and the proposing Coalition Member may agree to retain a mediator. BPA or the proposing Coalition Member may also seek to resolve any differences in opinion by using a fact finder selected pursuant to the process set forth in section 8.d.i. If a fact finder is retained, then, in a written report, the fact finder shall find whether the Coalition Member's proposal or the proposal with revisions supported by BPA satisfy the conditions set forth in section 5.c. Upon receipt of the report, BPA and the proposing Coalition Member may use this report to resolve differences in opinion.

viii. Upon approval of a Project, BPA shall notify the Council of the approved Project and of BPA's intention to implement the Project. BPA may also accordingly amend the annual implementation work plan reviewed by the Council. The Parties do

not intend that notification under this section shall delay implementation of an approved Project.

ix. BPA's approval and implementation process shall include and may be conditioned upon compliance with applicable environmental laws, including the National Environmental Policy Act (NEPA). Any activity on a Project by or permitted by any of the Parties prior to BPA's completion of its NEPA process shall maintain or enhance the status quo of wildlife and other resources involved and shall comply with the provisions of Title 40, Section 1506.1 of the Code of Federal Regulations.

x. BPA and a Coalition Member shall agree in advance on the portion of budgeted amounts available pursuant to this Agreement for the Coalition Member's costs related to preparation/coordination of proposals and public involvement and advisory committee processes. BPA and each Coalition Member shall review the reasonableness of costs expended under this part as they deem appropriate.

xi. Funds for approved Projects shall include reasonable amounts for operation and maintenance of Projects during the term of this Agreement. After the term of this Agreement, BPA shall provide additional funds for continued operation and maintenance that is determined to be necessary to maintain or provide positive wildlife and/or wildlife habitat benefits.

c. Conditions for Approved Projects

All Projects implemented pursuant to this Agreement and all activities by or permitted by any Party on such Projects must satisfy the conditions set forth in this section 5.c.

i. All Projects shall mitigate wildlife and/or wildlife habitat within the State of Washington affected by the construction of Federal dams in the Columbia River Basin.

ii. All activities on Projects shall be consistent with sound biological management for the mitigation of wildlife and/or wildlife habitat within the State of Washington affected by the construction of Federal dams in the Columbia River Basin.

iii. All Projects shall be permanently dedicated to wildlife and wildlife mitigation purposes of the Pacific Northwest Electric Power Planning and Conservation Act and not be inconsistent with Section 1000 of the Council's Fish and Wildlife Program.

iv. All Projects shall be consistent with basin-wide wildlife implementation priorities approved by the Council in October 1990. Projects shall focus on natural ecosystems and species diversity.

v. All Projects shall satisfy the parameters described in section 4(h) of Pacific Northwest Electric Power Planning and Conservation Act for inclusion of measures in the Council's Fish and Wildlife Program.

vi. All Projects must reflect consideration of the criteria in section 1003(b)(7) of the Council's Fish and Wildlife Program.

vii. Projects shall address important habitat needs and best satisfy the purpose described in section 1(a) of this Agreement for a reasonable economic cost.

viii. When feasible, Projects shall also benefit fish.

ix. For the purposes of this Agreement, BPA shall receive full credit for existing habitat value for all lands that are acquired, permanently dedicated to wildlife and wildlife mitigation purposes, and provided with reasonable funding for operation and maintenance over the life of the Project. If BPA's wildlife mitigation responsibility is measured in acres, then BPA's responsibility to mitigate wildlife under the Northwest Power Act shall be reduced by one acre for each acre purchased when the enhancement agreed upon for the acre purchased in the Project proposed by a Coalition Member and approved by BPA is implemented.

For the purposes of this Agreement, BPA shall also receive full credit for habitat improvements that enhance public or tribal lands that are permanently dedicated to wildlife and wildlife mitigation purposes and provided with reasonable funding for operation and maintenance over the life of the Project. If BPA's wildlife mitigation responsibility is measured in acres, then BPA's responsibility to mitigate wildlife under the Northwest Power Act shall be reduced by one-third acre for each acre that is enhanced.

x. Projects implemented pursuant to this Agreement shall be credited to wildlife mitigation goals set forth in Section 1000 of the Council's Fish and Wildlife Program.

xi. Funds for approved Projects shall include reasonable amounts for operation and maintenance and monitoring and evaluation of Projects during the term of this Agreement.

xii. Projects shall adequately identify the acreage and an estimate of the value of habitat associated with the projects.

d. Implementation of Projects

i. BPA shall disburse the budgeted amounts for approved Projects through BPA's contracting processes and/or by acquisition of land.

ii. The implementation of a Project approved as provided under this Agreement shall be contracted by BPA to the Coalition Member proposing the project using noncompetitive contracting to the extent permitted by law. All contracts under this paragraph shall also comply with reasonable BPA contracting practices and be at reasonable economic cost.

iii. If BPA approves a Project, and the Project involves the acquisition of land or an interest in land, then BPA shall acquire the land or, at BPA's option, may contract with the proposing Coalition Member(s) to acquire the land. BPA may consider eventual transfer of ownership of the land to the proposing Coalition Member. If BPA acquires the land, then BPA may contract with counties, tribes, or other local governments for the provision of actual services. Expenditures pursuant to such contracts shall be from the budget amounts set forth in the Wildlife Budget Table in section 5.a.i of this Agreement. If lands or interests in lands are acquired under this Agreement, BPA shall pay from funds separate from the budget

identified in section 5.a all pre-acquisition costs that include, by way of example, appraisal costs, title insurance and reports, closing costs, and toxic or hazardous waste surveys. Upon entering into a long-term agreement described in section 8.a, BPA shall transfer acquired lands to the proposing Coalition Member, if requested by that Coalition Member.

iv. The Parties shall cooperate in conducting studies and shall provide assistance in obtaining any approvals or permits which may be required for implementation of this Agreement.

v. If efforts to implement an approved Project raise new information that substantially reduces the merits of the Project, then BPA shall consult with the proposing Coalition Member to determine how to revise or, if warranted, terminate the Project. If BPA and the proposing Coalition Member differ with regard to the need to revise and/or terminate a Project, then either Party may seek use of a mediator or use of a fact finder pursuant to the process set forth in section 8.d.i. If a fact finder is retained, then, in a written report, the fact finder shall find whether new information has substantially reduced the merits of the Project.

6. Advisory Committees

To assist in the development of proposed Projects or in the implementation of Projects pursuant to contracts with BPA, the Coalition and Coalition Members may develop a public advisory process. If the Coalition or Coalition Members create advisory groups, then they shall invite interested persons, as well as the Council and

any of the Parties to this Agreement and members of the Policy Review Group, to participate as members of the groups.

7. Monitoring and Evaluation of Progress

BPA and Coalition Members shall cooperatively develop a monitoring and evaluation plan for projects approved pursuant to this Agreement. Funds for approved projects shall include reasonable amounts for monitoring and evaluation of Projects during the term of this Agreement. After the term of this Agreement, BPA may provide additional funds for continued monitoring and evaluation of the Projects that provide positive fish and wildlife benefits.

8. Long Term Agreement

a. The Parties agree to expeditiously engage in a process of negotiating a long-term trust agreement to fully address BPA's responsibility to mitigate wildlife and/or wildlife habitat within the State of Washington affected by the construction of Federal dams in the Columbia River Basin. The Parties agree to use their best efforts to complete this process within three years. Projects implemented pursuant to this Agreement shall be credited to and become part of any long-term wildlife trust agreement.

b. To facilitate negotiations, the Parties shall, within 180 days after execution of this Agreement, complete a written assessment(s) as to why they have not yet consummated a long-term trust agreement. The assessment shall identify outstanding issues, the respective views

of the Parties with respect to these issues, and potential approaches to resolving the issues.

c. To facilitate negotiations, the Parties may agree to select a mediator acceptable to Coalition Members and BPA.

d. If the Parties fail to consummate a long term wildlife trust agreement within three years after execution of this Agreement, then any Party may request that a fact finder be retained to assist the Parties in reaching Agreement.

i. The fact finder shall be selected by mutual agreement of the Parties within 20 days after a request to appoint a fact finder. If the Parties fail to agree upon a fact finder, then, within 20 days after the request to appoint a fact finder, BPA and the Coalition shall each identify a single nominee for the fact finder, and these two nominees shall, within 20 days after identification of the last nominee, select a third person who shall be the fact finder.

ii. In a written report, the fact finder shall find whether the Parties can reach agreement through additional negotiation or mediation, what issues divide the Parties, and describe options for the Parties to consider.

iii. Upon receipt of the report, the Parties may undertake additional efforts to reach agreement before seeking to raise issues in other forums such as courts, legislatures, or the Council. The fact finder's report may be introduced by the Parties in such forums. The Parties agree that, if a fact finder is used, they will not seek such forums until completion of the fact finder's report. Any report by a

fact finder under this or any other provision of this Agreement may be used by any Party but shall not be binding.

iv. Budget amounts made available pursuant to section 5 of this Agreement shall not be used to pay for the costs of any mediator or fact finder retained by the Parties. BPA and the Coalition shall each pay one-half of the costs of a mediator or fact finder retained pursuant to this Agreement to address a disagreement between BPA and Coalition Members. The Coalition shall pay all of the costs of a mediator or fact finder retained pursuant to this Agreement to address a disagreement between Coalition Members.

9. Commitment Not to Seek Additional Funds

During the term of this Agreement, neither BPA, the Coalition, nor Coalition Members shall, directly or indirectly, seek, claim, support, or recommend to the Council or others additional funding from BPA or seek to impose additional responsibilities upon BPA for the mitigation of wildlife and/or wildlife habitat within the State of Washington affected by the construction of Federal dams in the Columbia River Basin. Coalition Members shall withdraw any mitigation amendments proposed to the Council as Phase IV amendments that would result in funding by BPA for wildlife mitigation within the State of Washington. Nothing in this section 9 or other section of this Agreement shall limit the ability of a Coalition Member to (a) file a petition or initiate a judicial or administrative proceeding to list a species as threatened or endangered under the Endangered Species Act, 16 U.S.C. 1531 et seq., (b) participate in any action or respond to any petition filed or

brought by another person or entity to list a species under the ESA, or (c) request the Council or other governmental entity or agency to take action to protect wildlife listed under the Endangered Species Act, provided that the Coalition Member does not request funding from BPA in addition to the amounts provided pursuant to this Agreement.

10. No Precedent

Except for Projects approved and implemented pursuant to this Agreement, this Agreement is not binding with respect to (a) any other negotiations or proceedings taking place after the term of this Agreement, or (b) development of a long-term Agreement as provided in section 8.

11. Enforcement

a. BPA consents to suit in any Federal court of competent jurisdiction for the limited purpose of obtaining injunctive or declaratory relief to enforce the terms and conditions of this Agreement, and to that extent waives its sovereign immunity.

b. WDW consents to suit in any Federal or state court of competent jurisdiction for the limited purpose of obtaining injunctive or declaratory relief to enforce the terms and conditions of this Agreement, and to that extent waives its sovereign immunity.

c. CCT, CTUIR, YIN, and the Spokane Tribe of Indians consent to suit in any Federal or tribal court of competent jurisdiction for the limited purpose of obtaining injunctive or declaratory relief to enforce

the terms and conditions of this Agreement, and to that extent waive their sovereign immunity.

12. Miscellaneous Provisions

a. Authority. Each Party to this Agreement represents and acknowledges that it has full legal authority to execute this Agreement and shall be fully bound by the terms hereof.

b. Integrated Agreement. This Agreement constitutes the entire agreement among the Parties, and no modifications of this Agreement shall be binding upon any Party unless executed or approved in writing by the Parties.

c. Waiver of Default. Any waiver at any time by any Party hereto of any right with respect to any other Party with respect to any matter arising in connection with this Agreement shall not be considered a waiver with respect to any subsequent default or matter.

d. Benefit. This Agreement shall be binding upon and inure to the benefit of the Parties hereto and their successors and assigns.

e. Treaties. Nothing in this Agreement is intended to nor shall it abrogate or expand any federally protected or reserved Indian right.

f. Execution. This Agreement may be executed in counterparts. A copy with all original executed signature pages affixed may constitute the original Agreement. The date of execution shall be the date of the last Party's signature.

IN WITNESS WHEREOF, the Parties have executed this Agreement.

Randall W. Hardy — Date 4/15/93
Administrator
Bonneville Power Administration

Mike Lowry — Date 4/15/93
Governor
State of Washington

Curt Smitch — Date 4/2/93
Curt Smitch, Director
Washington Dept. of Wildlife

Eddie Palmanteer Jr. — Date 4/6/93
Chairperson
Colville Business Council
Confederated Tribes of the
Colville Reservation

Elwood Patawa, Chairperson — Date 4/7/93
Confederated Tribes of the
Umatilla Indian Reservation

Wilferd Yallup, Chairperson — Date 4-9-93
Yakima Indian Nation

Marvin Plenert — Date 4/7/93
Regional Director
U.S. Fish & Wildlife Service

Bruce Wynne, Chairperson — Date 4-5-93
Spokane Tribe of Indians

APPENDIX B: HELLSGATE SPECIES LIST

List of Commonly Found Species in the Project Area

Grasses

Idaho fescue	*Festuca idahoensis*
Bluebunch wheatgrass	*Agropyon spicatum*
Needle-and-thread	*Stipa comata*
Cheat grass	*Bromus tectorum*
Sandberg bluegrass	*Poa sandbergil*
Pinegrass	*Calamagrostis rubescens*
Prairie junegrass	*Koeleria cristata*
Reed canary grass	*Phalaris arundinacea*
Basin wild rye	*Elymus cinereus*
Alfalfa	*Medicago sativa*
Intermediate wheatgrass	*Agropyron intermedium*
Crested wheatgrass	*Agropyron cristatum*
Threeawn grass	*Aristida sp.*

Forbs

Spreading dogbane	*Apocynum androsaemifolium*
Indian paintbrush	*Castilleja spp.*
Rattlesnake plantain	*Goodyera oblongifolia*
Sedges	*Carex spp.*
Yarrow	*Achillea millefolium*
Arrowleaf balsamroot	*Balsamorhiza sagittata*
Bisquitroot	*Lomatium spp.*
Buckwheat	*Eriogonum spp.*
Bitterroot	*Lewisia rediviva*
Lupine	*Lupinus spp.*
Dalmation toadflax	*Linaria dalmatica*
Diffuse knapweed	*Centaurea diffusa*
Lomatium	*Lomatium sp.*
Milfoil	*Myriophyllum sp.*
Pondweed	*Potamogeton sp.*
Bulrush	*Scirpus americanus*
Cattail	*Typha latifolia*

Shrubs

Antelope bitterbrush	*Purshia tridentata*
Gray rabbitbrush	*Chrysothamnus nauseosus*
Sagebrush	*Artemisia tridentata*
Cactus	*Opuntia fragilus*
Serviceberry	*Amelanchier ainifolia*

Wax currant	*Ribes cereum*
Oceanspray	*Holodiscus discolor*
Redstem ceanothus	*Ceanothus sanguineus*
Ninebark	*Physocarpus malvaceus*
Common snowberry	*Symphoricarpus albus*
Myrtle boxwood	*Pachystima myrinites*
Columbia hawthorne	*Crataegus columbiana*
Red-osier dogwood	*Cornus stolonifera*
Nootka rose	*Rosa nutkana*
Mockorange	*Philadelphus lewisli*
Oregon grape	*Berberis repens*
Alder	*Alnus tenuifolia*
Chokecherry	*Prunus virginiana*
Smooth sumac	*Rhus glabra*
Blue elder berry	*Sambucus glauca*
Scouler willow	*Salix scouleriana*

Trees

Pondrosa pine	*Pinus ponderosa*
Douglas fir	*Pseudotsuga menziesii*
Western larch	*Larix occidentalis*
Grand fir	*Abies grandis*
Black cottonwood	*Populus trichocarpa*
Quaking aspen	*Populus tremuloides*
Willow	*Salix sp.*
Water birch	*Betula occidentalis*

Mammals

Mule deer	*Odocoileus hemionus*
Whitetail deer	*Odocoileus virginianus*
Elk	*Cervus elaphus*
Moose	*Alces alces*
Mink	*Mustela vison*
Cougar	*Felis concolor*
Bobcat	*Felis rufus*
Badger	*Taxidea taxus*
Coyote	*Canis latrans*
Cottontail rabbit	*Sylvilagus nuttalli*
Snowshoe hare	*Lepus americanus*
River otter	*Lontra anadenslo*
Black bear	*Ursus americana*
Beaver	*Castor canadensis*
Muskrat	*Ondatra zibethica*
Striped skunk	*Mephitis mephitis*
Yellow-bellied marmot	*Marmota flaviventris*

Pine martin	*Martes pennanti*
Racoon	*Procyon lotor*
Great basin pocket mouse	Perognathus parvus
Sagebrush vole	*Lagurus curtatus*
Bushytail woodrat	*Neotoma cinerea*
Red squirrel	*Tamiasciurus hudsonicus*
Flying squirrel	*Glaucomys sabrinus*

Birds

Sharp-tailed Grouse	*Tympanuchus phasianellus*
Spotted sandpiper	*Actitus colchicus*
Kingfisher	*Alecedinidae sp.*
Mourning dove	*Zenaida macroura*
Grasshopper sparrow	*Ammodramus savannarum*
Western meadowlark	*Sturnella neglecta*
Horned lark	*Eremophila alpestris*
Barn swallow	*Hirundo rustica*
Warblers	*Dendroica sp.*
Pileated woodpecker	*Dryocopus pileatus*
Flicker	*Colaptes auratus*
Canada goose	*Branta canadensis*
Mallard	*Anas platyrhynchos*
Green-winged teal	*Anas crecca*
Great blue heron	*Ardea herodias*
American coot	*Fulica americana*
Turkey	*Meleagris gallopavo*
Ring-necked pheasant	*Phasianus colchicus*
Hungarian partridge	*Perdix perdix*
Chukar	*Alectoris chukar*
Spruce grouse	*Dendrdragapus canadensis*
Ruffed grouse	*Bonasa umbellus*
Blue grouse	*Dendragapus obscurus*
Hungarian partridge	*Perdix perdix*
California quail	*Callipepla califonica*
Burrowing owl	*Athene cunicularia*
Great horned owl	*Bubo virginianus*
Barred owl	*Strix varia*
Osprey	*Pandion haliaetus*
Goshawk	*Accipiter gentilis*
Northern harrier hawk	*Circus cyaneus*
Coopers hawk	*Accipiter cooperi*
Red-tailed hawk	*Buteo jamaicensis*
Bald eagle	*Haliaeetus ieucocephalus*
Golden eagle	*Aquila chrysaetos*

APPENDIX C: GLOSSARY OF TERMS

Age Classes

A grouping of trees according to their age, usually in broad categories, used for growth projection and prediction purposes.

Ambient Air

Literally, the air moving around us; the air of the surrounding outside environment.

Animal Unit (AU)

An animal unit is a 453.6 kg (1,000 lb) mature cow, or its equivalent based on an average daily forage consumption of 11.8 kg (26 lbs) dry matter per day.

Animal Unit Month (AUM)

The forage requirement for one month 11.8 kg x 30.5 days = 360 kg (800 lbs).

Available Fuel

The portion of the total combustible material that fire will consume under given conditions. This would include materials such as duff, wood, herbaceous, or forest litter.

Browse

That part of the current leaf and twig growth of shrubs, woody vines, and trees available for animal consumption.

Canopy

The more or less continuous cover of branches and foliage formed by the crowns of trees and other woody growth.

Cavity

A hollow excavated in trees usually by birds or other natural phenomena; used for roosting and reproduction by many birds and mammals.

Clearcut

An even-aged cutting method in which the entire standing crop of trees from an area is harvested at one time.

Climax

The culminating stage in plant succession for a given environment; the vegetation is in a highly stable condition. The final or stable biotic community in a developmental series; it is self-perpetuating and in equilibrium with the physical habitat.

Compaction

The packing together of soil particles by forces exerted at the soil surface, resulting in increased soil density.

Cover

Vegetative or physical features of the environment used by wildlife for escape, hiding, or shelter from the elements.

Cultural Resources

The physical remains of sites, structures, or objects used by humans in the past. They may be historic, prehistoric, archaeological, or structural.

Diversity

The distribution and abundance of different plant and animal communities and species within a given area.

Ecosystem

An association of interactive organisms and their environment perceived as a single entity.

Endangered Species

Any species that is in danger of extinction throughout its range as determined by the Secretary of the Interior or the Secretary of Commerce. All Federal agencies are required to utilize their authority to carry out programs for the conservation of endangered and threatened species listed pursuant to the Endangered Species Act (Pub L. No. 97-304). Species listed endangered by State wildlife agencies, but not on the Federal list, are generally added to the list of "sensitive species" and managed appropriately.

Environmental Assessment

A concise public document for which a Federal agency is responsible that serves to: (1) briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact; and (2) aid an agency's compliance with the National Environmental Policy Act when no environmental impact statement is necessary. The document includes brief discussions of the need for the proposal, the alternatives as required by Sec. 102 (2)(e), environmental impacts of the proposed actions and alternatives, and a listing of agencies and persons consulted.

Erosion

Detachment and movement of soil or rock fragments by water, wind, ice, and gravity.

Even-Aged Forest

A forest crop or stand composed of trees having no, or relatively small, difference in age.

Fire Intensity

The severity of a given fire. Low intensity fires average flame lengths under four feet and high intensity fires average flame lengths over four feet.

Fire Risk
A chance of fire starting from natural or human causes.

Forage
The edible vegetation for wildlife or livestock produced seasonally or annually in a given area.

Forest Cover Types
A classification of forest land based on the species making up the majority of live trees.

Fuels
Any material that will carry and sustain a forest or range fire.

Habitat
The natural environment of a plant or animal. In wildlife management the major constituents of habitat are food, water, cover, and living space.

Habitat Type
An aggregate of all the land areas potentially capable of producing similar plant communities at climax.

Habitat Unit
Habitat Evaluation Procedure (HEP) analysis used to determine base line habitat conditions and to estimate existing habitat units in a project area. One habitat unit is equivalent to one acre of optimum habitat for a given indicator species.

Historic
Refers to that period of time for which written documents exist.

Hydrograph
A graph of a stream or river discharge that occurs at a certain point and over a period of time.

Intermittent Stream
A waterway which flows during moist periods but is dry the remainder of the year.

Native vegetation
Plants originating or occurring naturally in an area.

Noxious Weeds
Undesirable plant species.

Perennial Stream
A stream that flows year round.

Plant Succession

The process of vegetative development whereby an area becomes successively occupied by different plant communities of higher ecological orders.

PM-10

Particulate matter in air less than 10 microns in diameter. Common in smoke and dust emissions.

Prescribed Burning

Controlled application of fire to wildland fuels in either their natural or modified state, under such conditions of weather, fuel moisture, soil moisture, etc., as allows the fire to be confined to a predetermined area and at the same time to produce the intensity of heat and rate of spread required to further planned objectives such as wildlife habitat management.

Raptors

Birds of prey with a strong notched beak and sharp talons, as the eagle, hawk, owl, etc.

Riparian Vegetation

Vegetation located along the banks of a stream, pond, or spring, that serves as a narrow edge community between aquatic and upland plant communities. Provides valuable cover, foraging, and nesting, habitat for a variety of species from birds to mammals.

Selective Cut

The periodic removal of mature trees individually or in small groups from an uneven-aged forest.

Seral

One of a series of stages that follow each other in an ecological succession prior to the climax state.

Shrub-steppe Vegetation

An upland vegetation cover type that is an aggregate of grass and shrub plant communities. These upland plant communities can be identified in the project area by the presence of bitterbrush, rabbitbrush, and bluebunch wheatgrass associations.

Skid Trail

Any trail over which logs are dragged to a landing.

Slash

The wood residue left on the ground after harvesting, windstorms, fire, or road building. It includes non-utilized logs, uprooted stumps, broken or uprooted stems, tops, branches, leaves, etc.

Snag

A dead standing tree. The interior of the snag may be sound or rotted.

State Implementation Plan

A plan required by the Clean Air Act and prepared by an Air Quality Regulatory Agency, which describes how the state will attain and maintain air quality so as not to violate National Ambient Air Quality Standards.

Stumpage

The value of timber as it stands uncut in the woods.

Threatened Species

Any species listed in the Federal Register which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Trust land

Any area of land which has been set aside by the Federal government for the use, occupancy or benefit of Indians, even if it is not part of a Reservation.

Winter Range

Habitat used by wildlife species during the winter months to provide food and shelter.