WILDLIFE AND BOTANICAL MANAGEMENT PLAN

WELLS HYDROELECTRIC PROJECT

FERC PROJECT NO. 2149

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Prepared by:
Public Utility District No. 1 of Douglas County
East Wenatchee, Washington

EXECUTIVE SUMMARY

The Wildlife and Botanical Management Plan (WBMP), in conjunction with Public Utility District No. 1 of Douglas County's (Douglas PUD) Land Use Policy and the Avian Protection Plan, directs implementation of resource protection measures for wildlife and botanical resources during the term of the new Federal Energy Regulatory Commission (FERC) license for the Wells Hydroelectric Project (Wells Project). With the goal of ensuring active stakeholder support during the development and implementation of management plans, Douglas PUD developed this management plan in consultation with agency and tribal natural resource managers (Resource Work Groups or RWG). During the development of the WBMP, the Terrestrial RWG focused on developing management priorities for resources potentially impacted by ongoing Project operations. The members of the Terrestrial RWG include the U.S. Fish and Wildlife Service (USFWS), Washington State Department of Fish and Wildlife (WDFW), the Confederated Tribes of the Colville Reservation (CCT), U.S. Bureau of Land Management (BLM), and Douglas PUD.

The goal of the Wildlife and Botanical Management Plan is to protect, maintain and enhance wildlife and habitat on Project lands commensurate with ongoing effects of operating the Wells Project. The plan is also intended to guide wildlife management activities and to protect rare, threatened and endangered (RTE) wildlife and plant species on Project lands during the term of the new license for the Wells Project.

The main objectives of the plan are:

Objective 1: Protect and enhance RTE wildlife species' habitat on Wells Project lands.

Objective 2: Protect RTE botanical species from land disturbing activities and herbicide sprays.

Objective 3: Conserve habitat for species on Wells Project lands protected by the federal Endangered Species Act, Bald and Golden Eagle Protection Act, and Migratory Bird Treaty Act.

Objective 4: Protect native habitat on Wells Project lands.

Objective 5: Maintain productive wildlife habitat on the Cassimer Bar Wildlife Management Area.

Objective 6: Control noxious weeds on Wells Project lands.

Objective 7: Consultation.

1.0 INTRODUCTION

The Wildlife and Botanical Management Plan (WBMP) is an important component in the relicensing of the Wells Hydroelectric Project (Wells Project). The WBMP will guide the selection of proposed measures in the new license application to protect and mitigate potential project impacts on wildlife and botanical resources, and the implementation of such measures, during the term of the new license. Toward ensuring support for the WBMP, the Public Utility District No. 1 of Douglas County (Douglas PUD) developed this plan in consultation with the members of the Terrestrial Resources Work Group (RWG). Members of the Terrestrial RWG include the U.S. Fish and Wildlife Service (USFWS), Washington State Department of Fish and Wildlife (WDFW), U.S. Bureau of Land Management (BLM), the Confederated Tribes of the Colville Reservation (CCT) and Douglas PUD.

The Terrestrial RWG has agreed on the need to develop a plan for the long-term management of wildlife and botanical resources in the Wells Project. This Management Plan summarizes the relevant resource issues and background (Section 2), identifies goals and objectives of the plan (Section 3) and defines the relevant protection, mitigation, and enhancement (PME) measures (Section 4) for wildlife and botanical resources that Douglas PUD will implement under the term of the new license.

2.0 BACKGROUND

The shoreline of the Wells Reservoir is approximately 105 miles in length. Douglas PUD owns nearly 104 miles of shoreline within the Project. Approximately 2,140 acres of land lies between the Wells Project boundary and the ordinary high water elevation of the Wells Reservoir.

The majority of the land within the Wells Project boundary was cleared during construction of the Project. Numerous riparian and wetland plant communities have become established along the shoreline since the filling of the Wells Reservoir in 1967. The riparian vegetation that has developed naturally since the reservoir was filled closely resembles riparian vegetation outside the Wells Project boundary. Areas on the reservoir that were replanted include both native and cultivated riparian species. Riparian vegetation on the Okanogan River from River Mile (RM) 8 to RM 15.5 was not cleared before the reservoir was filled and includes original riparian plant communities.

Shrub steppe is the most common upland vegetation type found within and adjacent to the Wells Project. Grass cover types are also present in upland areas where ground disturbing activities or fire removed the sagebrush or where higher amounts of available soil moisture favor grasses. Conifer cover types dominated by ponderosa pine (*Pinus ponderosa*) are present in a few locations with favorable aspect, soil and moisture conditions.

Much of the land in the immediate vicinity of the reservoir is, or at one time was, cultivated for a variety of crops including wheat, alfalfa and orchards. Currently, irrigated orchards are the dominant crop.

The Wells Wildlife Area, managed by WDFW, is located in Douglas and Okanogan counties in Washington State and consists of six units: three shoreline/riparian units and three upland units. Bridgeport Bar (502 acres), Okanogan (91 acres) and Washburn Island (300 acres) are located along the shoreline of the Wells Reservoir and a portion of each unit lies within the Project boundary. West Foster Creek (1,025 acres), Central Ferry (1,602 acres) and Indian Dan Canyon (4,716 acres) are upland units and are entirely outside the Wells Project boundary (Figure 2.0-1).

The Cassimer Bar Wildlife Management Area (116 acres) is located in Okanogan County, and is a shoreline/riparian and wetlands unit at the Okanogan River confluence on the Colville Indian Reservation (Figure 2.0-1). The Cassimer Bar Wildlife Management Area is managed by Douglas PUD in cooperation with the CCT.

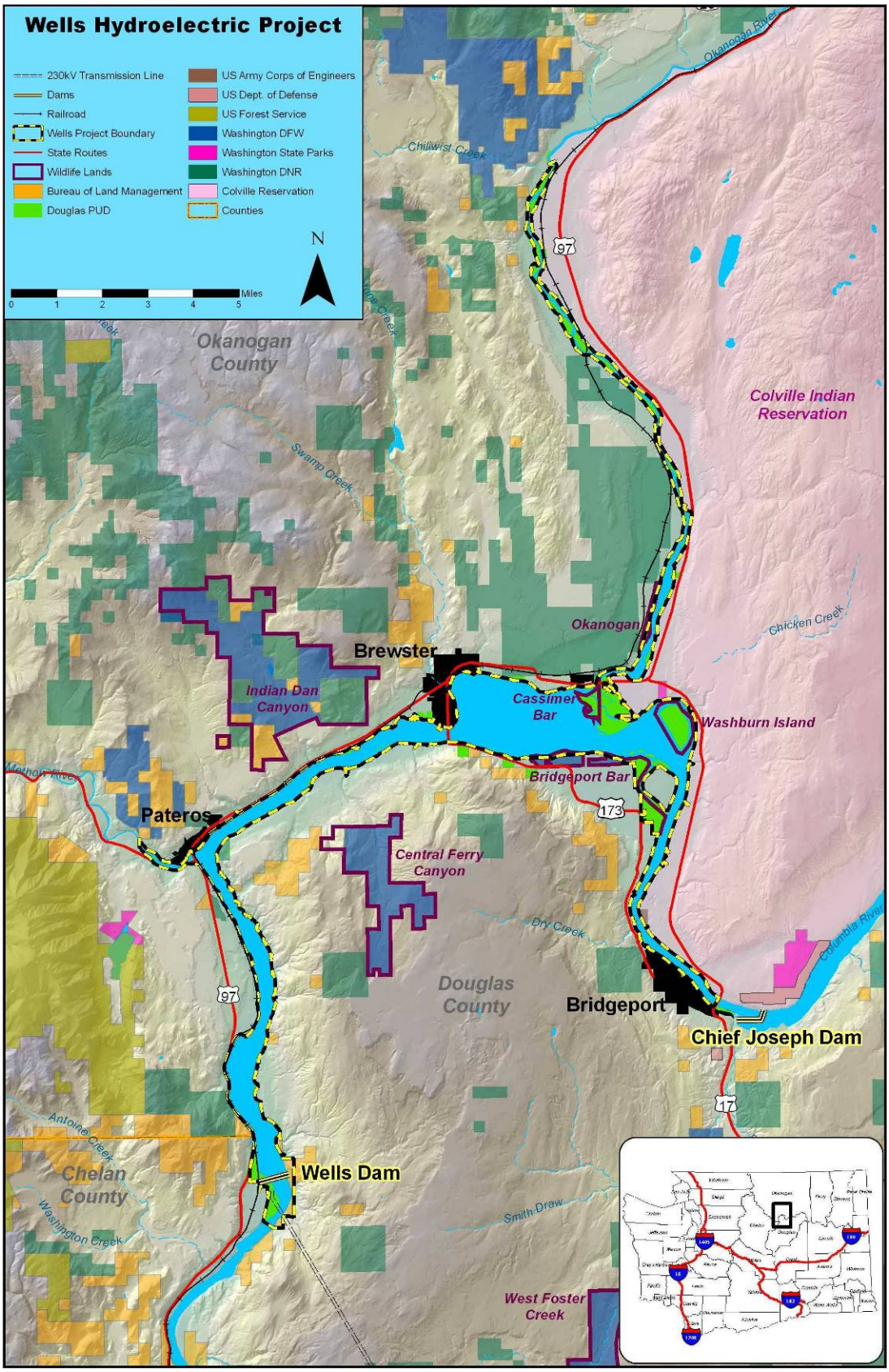

Figure 2.0-1 Wells Project Map

2.1 Off-License Settlement Agreement

In December 2007, WDFW and Douglas PUD signed an Off-License Settlement Agreement that addresses WDFW's wildlife, wildlife habitat, botanical, resident fish and resident fish habitat concerns related to the ongoing operation of the Wells Project. While not intended to be included as a measure under the new FERC operating license, it complements the goals and objectives of the WBMP; this section is provided in the WBMP for information purposes only.

The goals of the Off-License Settlement Agreement include creating, protecting, maintaining and enhancing wildlife habitat within the Wells Wildlife Area. The funding obligations of the agreement commence June 1, 2012, and include Douglas PUD providing WDFW $200,000 annual funding for maintenance and operations of the Wells Wildlife Area; up to $50,000.00 over the term of the agreement for habitat restoration after wildland fires on the Wells Wildlife Area; and provisions for replacement of certain capital equipment used to meet the program goals. The Off-License Settlement Agreement also provides for the protection of rare, threatened and endangered (RTE) wildlife and botanical resources, noxious weeds management and wetland habitat protection on all six units of the Wells Wildlife Area (including the three shoreline units that are partly or completely within the Wells Project boundary).

2.2 Resource Protection, Enhancement and Mitigation Under the Original License

2.2.1 Original Construction

Douglas PUD and the CCT signed a wildlife mitigation agreement on January 26, 1970. The agreement addressed mitigation for the construction of the Wells Project and the project-related impacts to wildlife on reservation lands caused by the original construction of the Wells Project. The terms of the mitigation agreement required Douglas PUD to pay CCT $16,800 annually for ten years. The funds were to be used to develop wildlife habitat and hunting improvements within the boundaries of the CCT Reservation. An agreement between Douglas PUD, CCT, and Ervin and Loretta Wolley signed on May 4, 1970 set aside 116 acres of land on Cassimer Bar within the CCT Reservation as the Cassimer Bar Wildlife Management Area. The Cassimer Bar Wildlife Management Area is jointly managed by CCT and Douglas PUD.

Douglas PUD and WDFW, then Washington Department of Game (WDG), signed an agreement on July 15, 1974 which defined the mitigation necessary to address the impacts of the construction and operation of the Wells Project to wildlife. The 1974 agreement required Douglas to transfer, in fee title, 5,755.8 acres of land to WDFW and provided WDFW with management rights to 596.2 acres of Douglas PUD owned lands within the Wells Project boundary. The agreement also included a requirement that Douglas PUD provide WDFW with a lump sum payment of $1,250,000.00 for a special Wildlife Fund. The fund was used to develop the Wells Wildlife Area on these lands, for the purchase of capital equipment and to provide operation and maintenance funding. Management rights were also secured on 1,884.0 acres of BLM and Washington Department of Natural Resources (WDNR) land adjacent to fee land provided by Douglas PUD. The Special Wildlife Fund has paid for the operation of Wells

Wildlife Area since that time. Active management of the Wells Wildlife Area began in the summer of 1975.

WDFW's original management objective for the Wells Wildlife Area was to develop habitat for game species and to release upland game birds, primarily ring-necked pheasants (*Phasianus colchicus*), with the goal of replacing hunting opportunities that were lost due to the original construction of the Wells Project. Over the years, WDFW's wildlife management directives evolved, at a state-wide level, from solely managing the mitigation lands for game species (upland birds, waterfowl and big game) to providing more general wildlife protection and recreation opportunities. The agency is now responsible for protecting game and non-game species and their habitats, managing for species diversity, and providing consumptive (hunting) and non-consumptive (wildlife viewing) wildlife related recreation.

2.2.2 Two-Foot Increase in the Wells Dam Forebay

WDFW and Douglas PUD signed a mitigation agreement on July 19, 1982 as a result of the two-foot raise in the forebay elevation of the Wells Reservoir. To fulfill the terms of the mitigation agreement, Douglas PUD rebuilt the islands used for Canada goose nesting in the Wells Reservoir. As part of the agreement, Douglas PUD created four islands (Kirk Islands) between Brewster and Pateros and eleven islands (Bridgeport Bar Islands) near the Wells Wildlife Area. The new islands replaced the former islands that were affected by the two-foot pool raise and ongoing erosion. Shoreline areas were raised using fill material and pit-run cobble was used to armor the shorelines of the islands. Interior areas of the goose nesting islands, below the reservoir elevation, were not filled, creating ponds and wetlands in the interior of some of the islands. In addition to protecting the island from erosion, to date, over 29 miles of reservoir shoreline, representing nearly one-third of the Wells Project shoreline, have been armored to protect against erosion. Emergent wetlands on Washburn Island were protected from inundation by slowly raising the water level of the Washburn Island pond over 4 years to allow the wetland plants to reestablish at a higher elevation. Douglas PUD also planted fourteen acres of riparian vegetation and erected 25 raptor perch poles as part of the mitigation for the two-foot increase in the Wells forebay elevation.

Douglas PUD and CCT signed a wildlife mitigation agreement on May 2, 1984 for the two-foot-raise in Wells Dam forebay elevation. The terms of the agreement included building dikes along the shoreline of Cassimer Bar to stabilize the water levels of three sloughs that support aquatic plants and are important habitat for waterfowl and other species. The sloughs were also fenced to protect the wetlands from livestock grazing.

2.2.3 Supplemental Wildlife Funding

On July 19, 1994, WDFW determined that the Special Wildlife Fund did not contain adequate monies to continue operation of the Wells Wildlife Area through the term of the Wells Project license. To ensure continued operation of the Wells Wildlife Area, Douglas PUD and WDFW entered into a memorandum of agreement in which Douglas provided "Supplemental" funding to WDFW to augment the income from the Special Wildlife Fund. The Special Wildlife Fund will be depleted and the "Supplemental" funding of the Wells Wildlife Area both terminate on May 31, 2012.

2.3 Wildlife and Botanical Studies

Since 1975, Douglas PUD and WDFW have collected information on the wildlife species in the vicinity of the Wells Project. A summary of each year's surveys is provided to FERC in an annual report detailing wildlife mitigation program activities conducted on the Wells Wildlife Area. The annual report to FERC contains data on wildlife, goose nesting numbers, hunting activity and harvest on the wildlife area, bald eagle abundance and roost use in the vicinity of the Wells Project.

Further, in anticipation of data needs for relicensing, Douglas PUD conducted studies of existing wildlife and botanical resources found within the Wells Project ("baseline studies").

These studies were conducted specifically to collect relevant and timely information for the Pre-Application Document. Baseline botanical and terrestrial studies included:

- Rare, threatened and endangered plant surveys.
- Vegetation cover type mapping.
- Invasive weed surveys and mapping.
- Avian presence and distribution surveys.
- Small mammal presence and distribution surveys.
- Amphibian presence and distribution surveys.
- Reptile presence and distribution surveys.

2.3.1 Baseline Study Findings

A botanical survey of the Wells Project was conducted in 2005 (EDAW 2006a) to determine the presence of RTE plants and to identify invasive plant species. The study also included a cover type mapping component, in which approximately 2,539 acres were mapped by digitizing aerial orthophotos in ArcMap™ Geographic Information System (GIS). Ground truthing of the cover type maps was completed during field surveys (EDAW, 2006a).

The study reported 13 occurrences of four rare plants in the Wells Project including little bluestem (*Schizachyrium scoparium*), chaffweed (*Centunculus minimus*), northern sweetgrass (*Hierochloe odorata*) and brittle prickly-pear (*Opuntia fragilis*) (EDAW, 2006a). Brittle prickly-pear, found at six locations on project lands, has been found to be more abundant in Washington State than previously thought and has been recently removed from the list of plants tracked by the Washington Natural Heritage Program (WNHP) (personal communication between S. Moody, Environmental Review Coordinator, Washington Natural Heritage Program, Olympia Washington, to J. McGee, Wildlife Biologist, Douglas PUD, East Wenatchee, Washington). Ute ladies' tresses (*Spiranthes diluvialis),* a federally-listed threatened species of orchid, was not observed during rare plant surveys conducted in 2005 despite the presence of suitable wetland habitat in the Wells Project (EDAW, 2006a).

Noxious weed surveys in the Wells Project documented and mapped 99 occurrences of four Class B-designate weed species, including purple loosestrife (*Lythrum salicaria*), Dalmatian toadflax (*Linaria dalmatica*), leafy spurge (*Euphorbia esula*), and perennial pepperweed (*Lepidium latifolium*). No Class A weeds were found. Although not mapped, two Class B

weeds—Russian knapweed (*Acroptilon repens*) and diffuse knapweed (*Centaurea diffusa*)—were common in upland or transitional upland/wetland habitats; two Class C weeds—reed canarygrass (*Phalaris arundinacea*) and yellow flag (*Iris pseudacorus*)—were common species in Project Area wetlands and along reservoir shorelines (EDAW, 2006a).

Cover types were mapped and field verified on 2,539 acres of land within the Wells Project. Upland and wetland habitats comprised 32 percent and 31 percent of the Project Area, respectively; 26 percent of the land was agricultural and another 6.9 percent shows evidence of development. The remaining areas mapped included Upland Rock Habitats, Littoral Zone, and Bare-Disturbed-Eroded which comprised, in total, less than 5 percent of the Project Area (EDAW, 2006a).

A terrestrial study of the Wells Project was also conducted by EDAW (2006b) to document the occurrence, distribution, and habitat use of birds, amphibians, reptiles, and small mammals on Project lands, including those species listed as rare, threatened, or endangered. The only federally-listed species documented during the study was the bald eagle (*Haliaeetus leucocephalus*). Two state-listed species were detected during the study, American white pelican (*Pelecanus erythrorhynchos*, State Endangered) and bald eagle (State Threatened). In 2007, the bald eagle was removed from the federal Endangered Species List, and in early 2008 the Washington Fish and Wildlife Commission down-listed bald eagles from threatened to sensitive on the state list of protected wildlife.

Surveys documented the presence of 120 bird species in the Wells Project with the greatest species diversity of birds in wetland habitat during the breeding season. The relative abundance of birds peaked in the fall. Three native species of amphibians were documented in wetland on Project lands and one invasive amphibian species was also documented. Six species of snakes and one species of turtle were documented during surveys. Twelve species of small mammals were found on project lands. A full list of species documented during the study can be found in EDAW (2006b) or Douglas PUD (2006).

2.3.2 Studies Developed by the Terrestrial Resource Work Groups

The Terrestrial RWG, originally formed prior to the beginning of the formal Project relicensing process, evaluated all of the available information and recommended that two additional studies be conducted during the Wells ILP. The first, a study of habitats along the Wells 230 kV transmission line corridor, included these elements:

- RTE plant surveys.
- Vegetation cover type map development and field verification.
- Invasive weed surveys and mapping.
- Avian presence and distribution surveys.
- RTE terrestrial species.
- Reptile presence and distribution surveys.

The second study developed by the Terrestrial RWG was a study to assess control measures for piscivorous (fish eating) birds and mammals preying on fish rearing at Wells Project hatcheries.

2.3.2.1 Wells 230 kV Transmission Line Study

In 2008, Douglas PUD conducted botanical and wildlife surveys within the Wells Project transmission line corridor (Figure 2.3-1) (Parametrix 2009). The overall goal of these surveys was to provide information needed to guide land management decisions, avoid damage to valuable habitat during future transmission corridor management activities, and minimize the spread of invasive weeds. The study provides baseline data on plants and animals found within or adjacent to the corridor and information on the presence and habitat associations of RTE plant and animal species in the corridor. Surveys in the transmission line corridor targeted RTE plant and animal species, habitat mapping, invasive plant species and recorded the presence of terrestrial species. Additional data were collected to document (1) nesting by raptors and corvids, (2) use by Columbian sharp-tailed grouse (*Tympanuchus phasianellus*) and greater sage-grouse (*Centrocercus urophasianus*), and (3) evidence, or lack thereof, of avian collisions with the transmission line and associated structures in the study area.

The botanical survey observed and mapped one occurrence of Thompson's clover (*Trifolium thompsonii*) growing in the transmission line right of way. Thompson's clover is a state-listed threatened species and a federal species of concern. No federally-listed plant species were found in the transmission line corridor. The identified occurrence of Thompson's clover covers over 11 acres within the Right of Way (ROW) and extends outside of the transmission line corridor. The transmission line access road crosses through the population, but does not appear to be a threat as many individual plants were observed on the road.

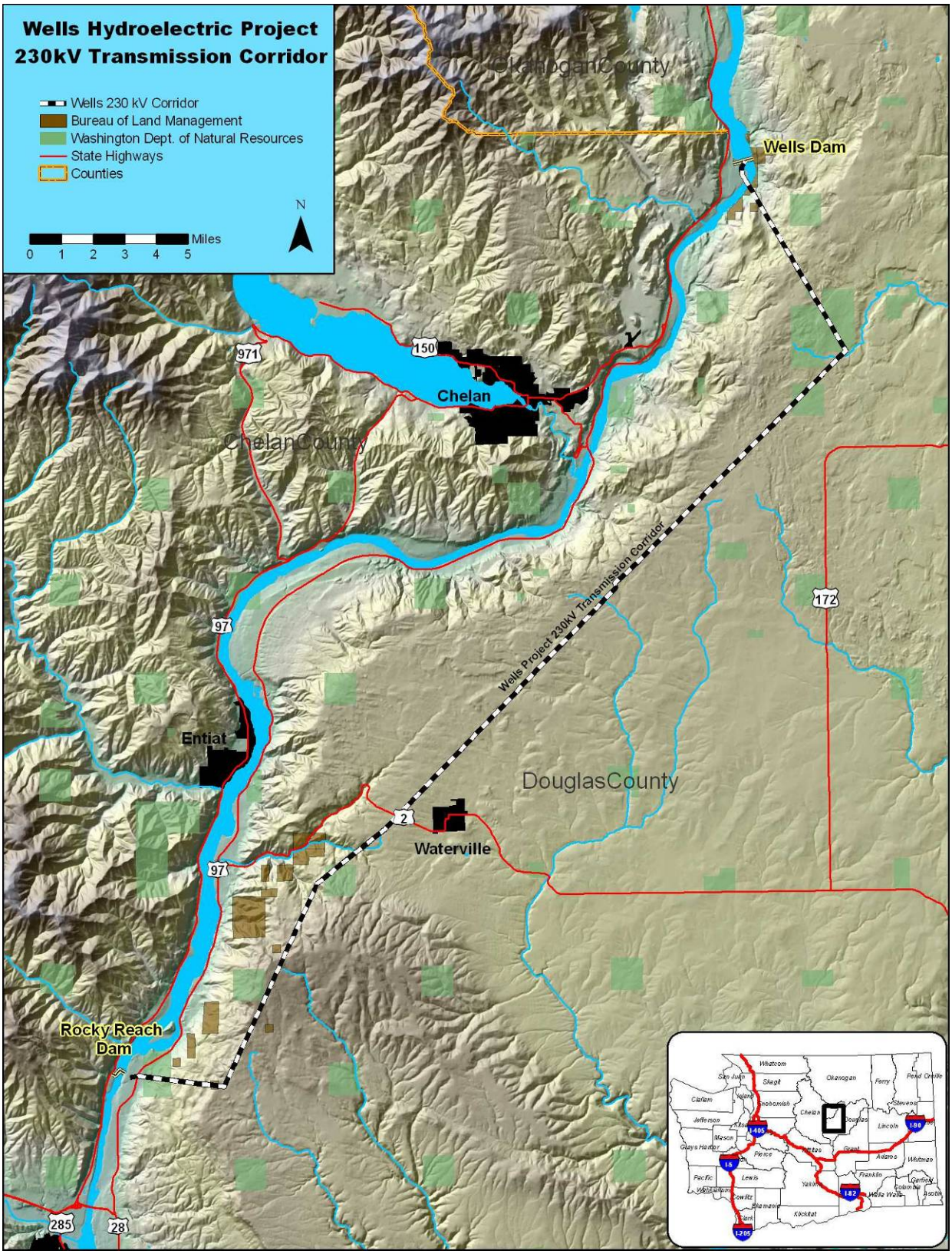

Figure 2.3-1 Wells 230 kV Transmission Line Corridor.

Invasive plant surveys in the transmission line corridor documented and mapped nine occurrences of two Class B designate weed species, Dalmatian toadflax and spotted knapweed (*Centaurea stoebe*).

Two avian RTE bird species were documented in the study area. These were sage thrasher (*Oreoscoptes montanus*) and golden eagle (*Aquila chrysaetos*), both state candidates. The American white pelican, a state endangered species, was observed where the transmission line crosses the Columbia River below Wells Dam. No evidence of use by either sage-grouse or sharp-tailed grouse was found.

Eleven nests of raptors or corvids were detected within or adjacent to the study area, including four on Douglas County PUD transmission towers. Three bird carcasses were found during focused surveys, and three were found incidentally to other survey efforts. No direct evidence of collision was observed along the transmission line. One great blue heron (*Ardea herodias*) carcass was found near the transmission line on Carpenter Island, which may have died by colliding with the line (Parametrix 2009).

2.3.3 Project Effects

2.3.3.1 RTE Terrestrial Species and Habitat

There are two RTE birds that are known to use Project lands and waters:

- American White Pelican - State Endangered
- Sharp-tailed Grouse - State Threatened

American white pelicans are shy summer residents on the Wells Reservoir. There is no known Project effect on the American white pelican. Recreational boating and fishing on the reservoir could potentially disturb the birds by creating too much visual and auditory disturbance particularly when power boats move too close to the flock.

Sharp-tailed grouse are not currently found within the Wells Project including the transmission corridor (Parametrix 2009). Sharp-tailed grouse in Douglas County are found in shrub steppe and riparian areas at higher elevation, except during hard winters when snow depth and crusting snow forces them to lower elevations. Sharp-tailed grouse have been found on Project lands in the past but they have not been found in the past twenty years (M. Hallet, WDFW, pers. comm.). Sharp-tailed grouse are dependent on riparian habitat with water birch during winter months for food and shelter. There is no known Project effect on sharp-tailed grouse**.**

No federally-listed plant species have been observed within the Wells Project (EDAW, 2006a). There are two state-listed threatened plant species and two state-listed sensitive plant species on the Project lands including:

- Little bluestem - Threatened
- Chaffweed - Sensitive
- Northern sweetgrass - Sensitive
- Thompson's clover - Threatened

Little bluestem, chaffweed, and northern sweetgrass are all susceptible to land disturbing activities, use of herbicides and extended occurrences of low water levels which may lower the soil-moisture content during the growing season. Historic reservoir operating levels do not appear to have adversely affected RTE plant species found in various locations on the reservoir and wetland and riparian vegetation (DTA, 2006).

Thompson's clover is susceptible to the misuse of herbicides and land disturbing activities. The transmission line access road crosses through the population, but does not appear to be a threat as many individual plants were observed on the road.

2.3.3.2 Resident and Migratory Wildlife

Changes in water surface levels of a foot or less are typical of many large lakes and rivers and would not be expected to impact associated wildlife or the vegetation on the Wells Reservoir. Impacts due to low reservoir levels for extended periods may have an effect on plants and wildlife, and may lower nesting success for Canada geese (*Branta canadensis*) at the Bridgeport Bar islands.

Shoreline conditions vary considerably throughout the Wells Reservoir. The majority of the shoreline is stable and vegetated, while other areas have varying degrees of erosion. Erosion is an ongoing natural process in the Okanogan and Columbia rivers, making the influence of Wells Project operations difficult to evaluate. The Terrestrial RWG observed no indications that important wildlife species or wildlife habitats on the Wells pool are being affected by Project-induced erosion.

2.3.3.3 Invasive Weeds

Invasive weeds can have an effect on wildlife habitat and agriculture. Douglas PUD has worked closely with the Okanogan County Weed Board and adjacent landowners to control noxious weeds on the Wells Project lands. Herbicide spray records have been kept on file since 1990 when Washington State law was changed to require the retention of records. These records show that Douglas PUD has treated Scotch thistle (*Onopordum acanthium*) since 1990, Dalmatian toadflax (1995), leafy spurge (1990) and perennial pepperweed (2004). Biological agents are also collected and dispersed annually by Douglas PUD to control leafy spurge and Dalmatian toadflax in the Wells Project. In 1989, Douglas PUD discovered and began controlling purple loosestrife by digging out the plants in wetlands along the Columbia River. Rodeo™ Herbicide was used between 1990 and 1999 to control purple loosestrife. Biological control agents (beetles) have been released annually beginning in 2000 to control purple loosestrife rather than using herbicide in the wetlands along the Wells Reservoir. WDFW also controls noxious weeds in the Wells Project when managing the Wells Wildlife Area.

The weed control program administered on the Wells 230 kV transmission line corridor targets invasive weeds that can reduce the quality of forage on rangeland and dry land agriculture crops. Invasive species controlled along the transmission line corridor and access roads include: diffuse, Russian and spotted knapweeds and Dalmatian toadflax and thistle species. Biological control agents (beetles) have been released along the transmission line corridor annually beginning in 2004 to control Dalmatian toadflax.

3.0 MANAGEMENT PLAN GOALS AND OBJECTIVES

The overall goal of this Management Plan is to protect, maintain and enhance wildlife populations and habitat to a level commensurate with the effects of ongoing operation of the Wells Project. The plan is also intended to guide wildlife enhancement, protection and mitigation activities and to protect RTE wildlife and botanical species found within the Wells Project boundary.

The main objectives of the plan are:

Objective 1: Protect and enhance RTE wildlife species' habitats on Wells Project lands.

Objective 2: Protect RTE botanical species from land disturbing activities and herbicide sprays.

Objective 3: Conserve habitat for species on Wells Project lands protected by the federal Endangered Species Act, Bald and Golden Eagle Protection Act, and Migratory Bird Treaty Act.

Objective 4: Protect native habitat on Wells Project lands.

Objective 5: Maintain productive wildlife habitat on the Cassimer Bar Wildlife Management Area.

Objective 6: Control noxious weeds on Wells Project lands.

Objective 7: Consultation.

4.0 MANAGEMENT MEASURES

This section of the Management Plan outlines the measures that will be employed to protect wildlife within the boundaries of the Wells Project.

4.1 Objective 1: Protect RTE Terrestrial Species Habitat on Wells Project Lands

The WDFW maintains a list of endangered, threatened and sensitive fish and wildlife species (Washington Administrative Codes 232-12-014 and 232-12-011). Listing procedures were developed by a group of citizens, interest groups, and state agencies and adopted by the Washington Fish and Wildlife Commission in 1990 (Washington Administrative Code 232-12-297).

State- listed wildlife species known to use the Wells Project include the American white pelican and sharp-tailed grouse.

4.1.1 American White Pelican

The American white pelican is listed as a state endangered species in Washington State; white pelicans are not federally-listed. White pelicans usually arrive on the reservoir in June and remain on the reservoir until October or mid November. There is no evidence of sexually mature birds being present within the Project; all white pelicans observed appear to be immature. Consequently, there does not appear to be any nesting taking place within the Project. The white pelicans are feeding on the abundant resident fish found within the reservoir.

Following receipt of a new license, Douglas PUD will do the following:

- Beginning in year 2 of the new license, Douglas PUD will provide educational material (signs) at Douglas PUD boat launches and local visitor centers. Educational materials will advise boaters to avoid pelicans while boating, fishing and hunting. Signs will be inspected during other duties and repaired as soon as practicable after damage is discovered.

4.1.2 Sharp-tailed Grouse

Columbian sharp-tailed grouse are federal species of concern and a threatened species in Washington State. Sharp-tailed grouse are found in shrub steppe and riparian areas at higher elevations, except during hard winters when snow depth and crusting snow force them to lower elevations. Sharp-tailed grouse have been found on Project lands (Bridgeport Bar Unit of the Wells Wildlife Area) in the past but they have not been observed there in the past twenty years (M. Hallet, WDFW, pers. comm.). Within the Wells Project, the irrigated riparian vegetation on the Bridgeport Bar Unit provides food items that could be used by sharp-tailed grouse during harsh winter conditions. There is no known Project effect on sharp-tailed grouse**.**

Following receipt of a new license, Douglas PUD will do the following:

- Beginning in year one of the new license, as an enhancement, Douglas PUD will continue to water irrigation-dependent riparian trees, shrubs and associated vegetation located below Project boundary within the confines of the Bridgeport Bar Unit of the Wells Wildlife Area. Continued management of this habitat will benefit a wide range of wildlife species, including sharp-tailed grouse.

4.2 Objective 2: Protect RTE Botanical Species from Land Disturbing Activities and Herbicide Sprays

The WNHP, which is administered by the Washington Department of Natural Resources, has developed a list of plant species considered endangered, threatened, sensitive, possibly extirpated, and under review (lists 1 and 2) for conservation purposes.

EDAW, Inc. (2006a) conducted a baseline botanical survey of Wells Project lands. Studies included cover type mapping, RTE plant surveys and weed surveys. The four RTE plant species that were documented include two state-threatened species, Thompson's clover and little

bluestem; and two WNHP Review 1 Species: chaffweed and northern sweetgrass. All RTE plant locations were documented using a handheld Global Positioning System (GPS) unit.

Following receipt of a new license, Douglas PUD will do the following:

- Beginning in year five of the new license, and every 10 years thereafter, Douglas PUD will survey and revise site boundaries for populations of little bluestem and Thompson's clover found within the Wells Project boundary.

- Beginning in year one of the new license, for lands owned by Douglas PUD within the Wells Project boundary, no new ground disturbing activities will be allowed within a 500 foot buffer zone surrounding the RTE plant locations and no land use permits will be issued for these buffer areas. Any weed control needed within the buffer zone will utilize the following methods in descending order of preference: biological control, hand pulling, and hand wiping of individual weeds with herbicide. Details of the Weed Control Plan can be found in Section 4.6 of this plan.

- Beginning in year one of the new license, Douglas PUD will control weeds within a 500 foot buffer of Thompson's clover occurrences within the transmission line right of way. Weed control work will utilize the following methods in descending order of preference: biological control, hand pulling, and hand wiping of individual weeds with herbicide.

4.3 Objective 3: Conserve Habitat for Species on Wells Project Lands Protected by the Federal Endangered Species Act, Bald and Golden Eagle Protection Act, and Migratory Bird Treaty Act

4.3.1 Bald Eagles

Bald eagles were delisted from the Federal ESA on August 8, 2007 (72 FR 37345) and were listed as sensitive on the Washington list of wildlife classified as protected under WAC 232-12-011, in 2008. USFWS has published guidelines for protecting bald eagle habitat under the authority of the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act (USFWS, 2007). In the 1980s, Douglas PUD installed 25 shoreline bald eagle perch poles to provide the eagles elevated perches for hunting, sunning and resting. The eagles also perch on ponderosa pine and black cottonwood (*Populus balsamifera ssp trichocarpa***)** trees and old snags. The abundant waterfowl and American coots (*Fulica americana),* found within the Wells Reservoir, provide the majority of prey eaten by bald eagles during the winter (Fielder, 1982).

Following receipt of a new license, Douglas PUD will do the following:

- Beginning in year one of the new license, Douglas PUD will inspect raptor perch poles annually and repair or replace perch poles as warranted. The perch poles near the Starr Boat Launch will be removed to reduce avian predation on downstream migrating salmonids.

- Beginning in year one of the new license, Douglas PUD will perform monthly boat surveys during the months of November through March to inventory wintering bald eagle numbers and to identify large perch trees regularly used by bald eagles. Douglas PUD will determine if the perch trees need immediate protection from beavers or if they are likely to fall down in the near future due to bank erosion.

- Beginning in year two of the new license, Douglas PUD will begin, and then continue as necessary, protecting large living trees within the Project boundary that are used by eagles as perches and which are likely to be lost from beaver damage. Protection measures will be completed by year five of the new license for those trees identified within the first four years of the new license. To prevent beaver damage to eagle perch trees, each tree will be wrapped with galvanized welded wire. Wire wrapped trees will be inspected annually and the wire repaired or replaced, as needed.

- At any time during the implementation of the new license, as site specific issues arise regarding potential losses of large eagle perches due to bank erosion, Douglas PUD will consult with the TRWG to determine if any reasonable measures are available to address the issue.

- Beginning in year one of the new license, Douglas PUD will ensure establishment and protection of sufficient smaller trees of appropriate age classes to ensure future abundance of potential perch trees is at least equal to the baseline abundance documented in year one of the new license.

4.3.2 Waterfowl

Waterfowl (ducks, geese and swans) are protected as migratory gamebirds under the Migratory Bird Treaty Act. Wells Reservoir is an important waterfowl wintering area in eastern Washington. Aerial survey data from fall 2001 to spring 2005 show a maximum of 33,912 ducks and geese during the fall migration, and a maximum of 38,909 ducks and geese wintering on the Wells Reservoir. The native pond weeds found growing in the Wells Reservoir, along with grain crops grown on the Wells Wildlife Area, provide food for wintering and migrating waterfowl. Spring and summer resident waterfowl, mostly Canada geese, utilize the islands, wetlands and open areas of grass for breeding habitat and food.

Douglas PUD conducted an aquatic macrophyte study in the Wells Reservoir (Le and Kreiter, 2006). The results indicated the macrophyte community found within the Wells Project is healthy and dominated by native species. Project operations, including reservoir fluctuations, do not appear to be encouraging the growth of non-native macrophytes, including Eurasian watermilfoil (*Myriophyllum spicatum*). Daily reservoir fluctuations do have an effect on the growth of macrophytes in the upper 2-4 feet of the reservoir but the overall community types and species composition are not affected by reservoir operations (DTA, 2006).

Shoreline wetlands have developed under the daily fluctuations of the reservoir. Wells Reservoir provides the water that supports a variety of wetland cover types that were less abundant or did not occur in the former Columbia and Okanogan river basins. These wetlands are composed of

species requiring high and relatively consistent soil moisture during the growing season and that can also withstand frequent water level fluctuations (EDAW, 2006a).

Following receipt of a new license, Douglas PUD will do the following:

- Beginning in year one of the new license, Douglas PUD will plant at least 50 acres of annual grain crops within the Bridgeport Bar Unit of the Wells Wildlife Area below Project boundary, to provide food for wintering Canada geese and dabbling ducks.

4.4 Objective 4: Protect Wildlife Habitat on Wells Project Lands

The Wells Reservoir and wetlands provide habitat for a variety of waterfowl, shorebirds and aquatic furbearers. Riparian plant communities within the Wells Project support more wildlife species than any other vegetation type and include important habitat for migratory and nesting birds, mammals, reptiles and amphibians. Shrub steppe plant communities provide habitat for birds, reptiles and mammals adapted to thrive in this dry open habitat. Wildlife surveys detected 120 avian, 3 amphibian, 6 reptile, and 12 small mammal species within the Wells Project. The results of the wildlife surveys indicate that the Wells Project supports an abundance of healthy, native wildlife species (EDAW 2006b).

Douglas PUD has planted riparian shrubs and trees on the shoreline of the Wells Reservoir as mitigation for various construction projects and in areas where erosion was occurring to help stabilize the shoreline. Riparian shrubs and trees have been replanted where livestock disturbance has damaged the shoreline. Fencing has been installed to exclude livestock from shoreline riparian areas.

Land use permits are a tool Douglas PUD uses to balance private use of Wells Project lands with fish, wildlife, cultural resources and public recreation demands. Project lands have been monitored twice a month by boat to detect unauthorized encroachments from adjoining properties including vegetation removal and livestock trespass. Douglas PUD staff also monitors activities on Project land while performing normal land maintenance duties.

Douglas PUD has worked cooperatively with the CCT concerning land use issues within Project boundary on the Colville Indian Reservation. WDFW and Douglas PUD have worked closely on land use issues within Project boundary outside of the Reservation. In an effort to continue these important relationships, Douglas PUD will request an annual meeting with the CCT and WDFW to discuss land use and wildlife management issues related to implementation of this Management Plan.

Following receipt of a new license, Douglas PUD will do the following:

- Beginning in year one of the new license, Douglas PUD will continue twice a month boat monitoring of Project lands for unauthorized encroachment and damage caused by recreational activities and adjacent land owners. Wildlife habitat damage caused by unauthorized encroachment activities will be repaired or replaced with in-kind habitat within 12 months of identifying unauthorized activity.

4.5 Objective 5: Maintain Productive Wildlife Habitat on the Cassimer Bar Wildlife Management Area

The Cassimer Bar Wildlife Management Area protects and enhances wildlife habitat on 116 acres of land near the mouth of the Okanogan River. Since 1970 Douglas PUD, in cooperation with the CCT, has managed the land for wildlife habitat.

The three sloughs on Cassimer Bar were diked in the 1980s to provide furbearer and waterfowl habitat. After more than 25 years, the tide gates and culverts through the dikes, used to regulate the water elevation, have failed.

Douglas PUD will manage Cassimer Bar Wildlife Management Area lands for the benefit of wildlife.

Following receipt of a new license, Douglas PUD will do the following:

- Beginning in year one of the new license, Douglas PUD will implement weed management annually to control new occurrences of noxious weeds and to reduce existing weed occurrences.

- Beginning in year one of the new license, Douglas PUD will manage access and replace damaged habitat to reduce adverse effects of recreation on wildlife habitat.

- Beginning in year one of the new license, Douglas PUD will install and maintain perimeter fencing to protect Cassimer Bar wildlife habitat from livestock.

- Beginning in year one of the new license, Douglas PUD will evaluate the dikes on Cassimer Bar and determine an appropriate method to fix the dikes. In year two, Douglas PUD will apply for permits from appropriate agencies. Contingent on receiving the necessary permits, Douglas PUD will repair the dikes to enhance waterfowl and other aquatic habitats on Cassimer Bar. In year four and every year thereafter, the dikes will be inspected and repaired as soon as the design work and permitting allow.

4.6 Objective 6: Control Noxious Weeds on Project Lands

Invasive weeds are introduced either deliberately (e.g., free seeding garden plants) or accidentally through human activity. Because of their aggressive growth and lack of natural enemies, these plants can be highly destructive, competitive, or difficult to control. These exotic species can harm the economy and natural resources by reducing crop yields, destroying native plant and animal habitat, reducing recreational opportunities, decreasing land value and in some cases poisoning humans and livestock.

Invasive non-native plants under Washington State law (17.10 RCW) are considered noxious weeds. The Washington State Noxious Weed Control Board annually develops a list of noxious weed species of statewide importance. The Chelan and Okanogan Noxious Weed Control Boards maintain a noxious weed list which includes those weed species found in their counties that must be controlled by landowners. Douglas County has not established a noxious weed control board, but still must follow Washington State noxious weed mandates. On each weed board list, noxious weeds are classified according to their current distribution and degree of concerns; control efforts are required of landowners for some weed classes (Table 4.6-1). However, numerous invasive species have been judged to be too widespread to control (e.g., Cheat grass (*Bromus tectorum*)), and are not listed. Douglas PUD will annually check the state and county weed lists for changes, and will comply with legal requirements for noxious weed control.

Table 4.6-1 Washington State Noxious Weed Classification.

Classification	Distribution and required management
A	Limited distribution statewide. Eradication required in all areas.
B	Limited distribution, but well established in some parts of the state. Control required in non-infested areas (B designate); containment required in already infested areas (B non-designate).
C	Widespread. Management requirements are determined locally.

4.6.1 Weed Map

EDAW, Inc. (2006a) and Parametrix (2009) conducted noxious weed surveys and rare plant surveys on Project lands and the transmission corridor, respectively. The noxious weed map was developed in ArcView GIS to identify weed infestation on Project lands.

Following receipt of a new license, Douglas PUD will do the following:

- Beginning in year one of the new license, Douglas PUD will annually control identified Class A and B designate weed occurrences on Wells Project lands.

- Beginning in year five of the new license, Douglas PUD will survey Wells Project lands for new terrestrial weed infestations every five years throughout the term of the new license. Douglas PUD will use weed maps to identify problem areas and will update the maps as new weed populations are discovered.

4.6.2 Weed Management Planning

Careful planning is required to control noxious weeds while minimizing damage to native plant communities or rare plants.

Within one year of receipt of a new license, Douglas PUD will implement the following steps to control weeds on Project lands:

1. Consider the species of noxious weeds, density and size of the sites and surrounding vegetation when determining control measures.
2. Consider the land use of the site.
3. Acquire all environmental permits required (e.g., wetlands).
4. Consult the Washington State Department of Agriculture, pesticide-sensitive individuals list for properties adjacent to the control site.
5. Determine the effectiveness of various control options: burning, tilling, digging, herbicide application by wicking, spot spraying or broadcast spraying, or biological control agent.
6. Determine the most effective physiological growth stages of the target weed to obtain maximum control with least impact to surrounding vegetation.
7. Control weeds using method(s) selected for the site.
8. Monitor all application sites to determine the effectiveness of the weed control.
9. Control sites denuded by herbicide treatment will be replanted with native plant species appropriate to the site.

4.6.3 Preventing Weed Infestations

Douglas PUD will use practices that minimize the introduction of new weed species or the spread of existing weed species on Project lands. Prevention methods include limiting weed seed dispersal, minimizing soil disturbance and properly managing desirable native vegetation.

Within one year of receipt of a new license, Douglas PUD will implement the following practices and protocols intended to minimize new weed infestations:

- Use certified weed free straw and mulch and seed for habitat restoration projects.
- Limit public vehicle traffic to designated roads on Project lands.
- Douglas PUD employees and contractors will be instructed to check their vehicle undercarriage for weeds before driving on undeveloped Project lands.
- Minimize earth disturbing activities by vehicles, machinery, and water runoff on undeveloped land.
- Manage healthy native vegetation and replant native vegetation disturbed by Douglas PUD's management activities.

4.7 Objective 7: Consultation

A summary of all WBMP activities and a schedule of implementation are provided in Table 4.7-1. Douglas PUD will meet with resource agencies and/or tribes when requested to discuss management of wildlife and botanical species on Project lands. All changes to the plan must be in writing and made by unanimous consent by all Parties. Any agreed-upon changes to the WBMP will be submitted to FERC for review and approval.

Table 4.7-1 Summary of implementation measures and schedule

Douglas PUD Action	Frequency	Schedule
Install signs at access sites regarding American white pelican avoidance. (Section 4.1.1)	Signs will be repaired as soon as practicable after damage is discovered.	Beginning in year two of the new license.
Provide irrigation for irrigation dependent riparian vegetation at Bridgeport Bar Wildlife Unit. (Section 4.1.2)	Annually, as needed.	Beginning in year one of the new license.
Survey and revise site boundaries for RTE plants. (Section 4.2)	Every ten years	Beginning in year five of the new license.
Allow no ground disturbing activities or land use permits within 500 feet of known RTE plants. (Section 4.2)	Annually, as needed.	Beginning year one of the new license.
Follow specific protocols for weed control on Project lands, in the 230kV corridor, and near RTE plants. (Section 4.2, 4.5, 4.6)	Annually, as needed.	Beginning year one of the new license.
Inventory Raptor Perch poles and replace as needed. (Section 4.3.1)	Annually.	Beginning year one of the new license.
Remove raptor perch poles at Starr Boat Launch. (Section 4.3.1)	Once.	Beginning year one of the new license.
Conduct monthly bald eagle and perch tree inventories. (Section 4.3.1)	Monthly (November – March).	Beginning year one of the new license.
Install beaver protection on raptor perch trees. (Section 4.3.1)	Annually, as needed	Within five years following issuance of the new license.
Inspect and repair beaver protection on raptor perch trees. (Section 4.3.1)	Annually, as needed.	Beginning year two of the new license.
As needed, consult with TRWG regarding feasibility of site specific protection for large eagle perches, if threatened by erosion.	As needed	As needed.
Ensure recruitment of small trees for future perch trees. (Section 4.3.1)	Annually, as needed.	Beginning year one of the license.
Plant at least 50 acres of grain crops at Bridgeport Bar Wildlife Unit. (Section 4.3.2)	Annually.	Beginning year one of the license.
Conduct reservoir monitoring to identify unauthorized habitat damage. (Section 4.4)	Twice monthly.	Beginning year one of the new license.
Repair or replace lost habitat due to unauthorized damage. (Section 4.4)	Within one year of finding damage.	Beginning year one of the new license.
Manage Cassimer Bar Wildlife Management Area for wildlife. (Section 4.5)	Annually.	Beginning year one of the new license.
Evaluate and design a fix for the Cassimer Bar Wildlife Management Area dikes. (Section 4.5).	Once.	Beginning year one of the new license.
Apply for permits to repair Cassimer Bar dikes. (Section 4.5)	Once.	Beginning year two of license.
Contingent upon receiving permits, repair Cassimer Bar dike. (Section 4.5)	Once.	Beginning year three of license, or following receipt of permits.
Inspect Cassimer Bar dikes and repair as needed. (Section 4.5)	Inspect annually.	Beginning in year four of the new license.
Control Class A and B designate weeds. (Section 4.6)	Annually	Beginning year one of the new license.
Conduct weed surveys. (Section 4.6)	Every 5 years.	Beginning year five of the new license.
Consult with agencies as needed. (Section 4.7)	As needed.	As needed.

5.0 REFERENCES

Douglas PUD. 2006. Wells Hydroelectric Project FERC Project No, 2149 Pre-Application Document Volume 1. Public Utility District No. 1 of Douglas County. East Wenatchee, Washington.

DTA (Devine, Tarbell & Associates). 2006. Effects of Water Level Fluctuations on Natural Resources within the Wells Project: A Review of Existing Information. Wells Hydroelectric Project FERC No. 2149. Prepared by DTA for Public Utility District No. 1 of Douglas County, East Wenatchee, Washington.

EDAW, Inc. 2006a. Cover type mapping, rare threatened and endangered plant surveys and invasive plant surveys. Report of EDAW, Inc., Consultants to Public Utility District No. 1 of Douglas County. East Wenatchee, Washington.

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Parametrix, Inc. 2009. Plant and wildlife surveys and cover type mapping of the Wells Hydroelectric Project 230 kV transmission corridor. Report by Parametrix, Inc. Consultants for Public Utility District No. 1 of Douglas County, East Wenatchee, Washington.

USFWS (U.S. Fish and Wildlife Service). 2007. National Bald Eagle Management Guidelines. Washington. D. C.

Appendix A

Wildlife Mitigation Chronology

Wells Project Wildlife Mitigation Chronology (1963 – 2009)

Date	Description
Wildlife Mitigation Agreements	
1963	Master Memorandum of Agreement Between Douglas PUD and Washington Department of Fisheries, Washington Department of Game, the Bureau of Sport Fisheries and Wildlife and Bureau of Commercial Fisheries of the U. S. Department of the Interior. Agreement related to proposed Wells Hydroelectric Development on the Columbia River. Memorandum of Agreement provided $139,500 for various pre and post inundation fish and wildlife studies.
1970	Agreement Between Douglas PUD and the Confederated Tribes of the Colville Reservation for Fish and Wildlife. Wildlife portion of the mitigation agreement provided a total of $168,000, paid in 10 equal yearly payments, for wildlife habitat development on the Colville Reservation.
1970	Agreement Between Douglas PUD, the Confederated Tribes of the Colville Reservation and Ervin D. and Loretta M. Wolley. Agreement established 116 acre wildlife management area on Cassimer Bar.
1974	Agreement Between Douglas PUD and the State of Washington Department of Game for Wildlife Mitigation. The wildlife mitigation agreements provided 5,715.8 acres of land, $1,250,000 for an O & M fund and established the Wells Wildlife Area.
1976	Agreement Between Douglas PUD and Washington Department of Game. The agreement provided $2,927.50 for baseline studies of the Wells Wildlife Area.
1979	Agreement Between Douglas PUD and the State of Washington, Department of Game, for Preliminary Assessment of Effects to Wildlife. The agreement provided $8,179 to study the wildlife impacts associated with raising the Wells Dam forebay two feet.
1982	Agreement Between Douglas PUD and the State of Washington, Department of Game. The agreement outlined the wildlife mitigation package for impacts associated with raising the Wells Dam forebay two feet.
1984	Agreement Between Douglas PUD and the Confederated Tribes of the Colville Reservation. Offer of partial settlement for wildlife habitat mitigation associated with the Wells Dam forebay elevation increase.
1994	Memorandum of Agreement Between Douglas PUD and Washington Department of Fish and Wildlife. The agreement provides supplemental funding for the Wells Wildlife Area.
2007	Off-License Settlement Agreement with WDFW for the continuation of funding for the Wells Wildlife Area and for the production of 20,000 pounds of trout for off-site fishing enhancement.

Wildlife Mitigation with Colville Confederated Tribes	
1970-1980	Mitigation to develop wildlife habitat and hunting improvement projects within the boundaries of the CCT Reservation - Douglas PUD paid $16,800 per year for 10 years, $168,000 total.
1970	Set aside 116 acres of land on Cassimer Bar as a wildlife management area. Cost of land $49,795.
1984	Mitigation for the Wells Project two foot raise in forebay elevation. Constructed dikes across 3 sloughs on Cassimer Bar to stabilize water levels and preserve wildlife habitat. Project cost $90,950.
Wildlife Mitigation with Washington Department of Fish and Wildlife	
1974	Wells Wildlife Area established by 1974 agreement.
1974-1975	5,715.8 acres of land purchased by Douglas PUD and given in fee title to WDG as wildlife habitat.
1974-1975	566.2 acres of land below Wells Project boundary and owned by Douglas PUD are incorporated into the Wells Wildlife Area.
1974-1975	1884.0 acres of leased land with an annual fee are also incorporated into the wildlife areas.
1974	Douglas PUD provided $1,250,000, for O & M funding to WDG, as part of the 1974 wildlife mitigation agreement.
1994- present	To date, Douglas PUD has provided $750,337 of supplemental O & M funds (1997 to 2004) to support the Wells Wildlife Area.
1974- present	To date, approximately $5,409,027 has been expended for the operation and maintenance of the Wells Wildlife Area (1975-2004).
1975–2005	WDFW developed food plots, riparian habitat, developed shrub steppe vegetation, maintained upland bird feeders, developed springs, installed guzzlers, built dikes in Foster Creek and developed ponds.
1982-1984	Mitigation for the Wells Dam two foot raise in forebay elevation. Protected goose nesting islands, protected cattail marsh on Washburn Island pond, planted 14 acres of riparian shrubs and 25 raptor perch poles.
WDFW Studies and Mitigation Reports	
1978 -2008	Annual fall wildlife surveys.
1978 - 2008	Annual goose nesting surveys.
1975–2008	Annual reports on wildlife mitigation program to FERC.

Douglas PUD Wildlife Inventories and Studies	
1996 - 2004	Annual bald eagle winter surveys.
1996 - 2000	Quarterly bird surveys.
2005	Botanical Resource Study, rare threatened and endangered plant survey and invasive plant surveys.
2005	EDAW, Inc. 2006a. Cover Type Mapping, Rare Threatened and Endangered Plant Surveys and Invasive Plant Surveys. Report by EDAW, Inc. Consultants for Public Utility District No. 1 of Douglas County, East Wenatchee, Washington.
2005	EDAW, Inc. 2006b. Avian, Amphibian, Reptile and Small Mammal Surveys. Report by EDAW, Inc. Consultants for Public Utility District No. 1 of Douglas County, East Wenatchee, Washington.
2009	Parametrix, Inc. 2009. Plant and Wildlife Survey and Cover Type Mapping of the Wells Hydroelectric Project 230 kV Transmission Corridor. Report by Parametrix, Inc. Consultants for Public Utility District No. 1 of Douglas County, East Wenatchee, Washington.