

Bonneville Power Administration

Fish and Wildlife Program FY99 Proposal Form

Section 1. General administrative information

TUALATIN RIVER NATIONAL WILDLIFE REFUGE ADDITIONS

Bonneville project number: 9705916

Business name of agency requesting funding: US Fish & Wildlife Service (Service) as a member of the Oregon Department of Fish and Wildlife for the Oregon Wildlife Coalition (OWC).

In collaboration with the Trust for Public Land (TPL), The Nature Conservancy (TNC), Oregon Natural Heritage Program (ONHP), River Network, Metro, McKenzie River Trust (MRT), McKenzie River Watershed Council (MRWC), USDA Natural Resources Conservation Service (NRCS) and others.

Specifically, partners for the Tualatin River Project are: Bureau of Reclamation, Ducks Unlimited, Metro, Friends of the Refuge, and the Tualatin Riverkeepers.

Proposal contact person or principal investigator of the OWC:

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Agency representatives of the OWC: Greg Sieglitz, Susan Barnes (ODFW), Carl Scheeler (CTUIR), Terry Luther (CTWSRO), Haace St. Martin (BPT), Bruce Wiseman (SERVICE).

Representing the Tualatin River NWR is Ralph Webber.

Subcontractors: The coordination and planning component of this project has no subcontractors.

NPPC Program measure number(s): Section 11, specifically measures 11.2D, 11.3E and 11.3F. Also Section 7, measure 7.6.

Other planning document references: Oregon Trust Agreement (OTA) Planning Project, prepared by Oregon wildlife managers for BPA; BPA Wildlife Mitigation Program Final EIS;

BPA Watershed Management Program Final EIS; Assessing OTA Planning Project Using GAP Analysis; prepared by ODFW for BPA; Status of the interior Columbia Basin: summary of scientific finding, USDA Forest Service; CTUIR Wildlife Mitigation Plan for the John Day and McNary Dams, Columbia River Basin; CTWSRO Integrated Resource Management Plan; ODFW District Wildlife Management Plans; Wy Kan Ush Me Wa Kush Wit, CRITFC.

This refuge project supports numerous fish and wildlife oriented initiatives which include: the North Pacific Coast Ecoregion Plan, North American Waterfowl Management Plan, Pacific Coast Joint Venture Strategic Plan, Arctic Goose Joint Venture Strategic Plan, the Governor's Salmon Recovery Plan, several threatened and endangered species recovery plans such as that for the Aleutian Canada goose, and supports the new presidential executive order on the National Wildlife Refuge System. Wetlands within the project area are specifically addressed in USFWS Region 1's Wetlands Concept Plan as well as the State of Oregon's wetlands Priority Plan. Both documents cite the project's wetland types as particularly important for their functional values and recognize a need for immediate acquisition, restoration, and long-term management.

Subbasin(s): Willamette (and all tributaries).

Short description: This project consists of two components: the first is to facilitate coordination and planning between Oregon wildlife managers via funding of wildlife planning and coordination staff for each member of the OWC. Using the GAP analysis, along with other federal, state and tribal wildlife mitigation plans, the OWC will continue to develop and implement an Oregon wildlife mitigation strategy consisting of selection, scientific analysis, implementation (acquisition, enhancement, etc.), O&M, and monitoring and evaluation of wildlife mitigation projects. Create a process whereby the best opportunities for wildlife mitigation within the Columbia Basin in Oregon are brought forward, given thorough scientific, policy and financial review, agreed to by all members of the OWC and forwarded to the WWG, the Council and Bonneville for approval and funding. Additionally develop a funding mechanism/agreement with Bonneville that allows the OWC the flexibility to respond to the best wildlife mitigation opportunities as they arise.

In the second component of this project, the OWC is submitting to the WWG, the Council, and Bonneville a specific suite of implementation projects (acquisition/easement, enhancement or O&M) (attached), with specific budgets that have been reviewed and approved by all members of the OWC as described above. Also submitted for out-years are future potential mitigation areas/sites/activities with budget estimates.

Additionally, each specific implementation project may contain a range of activities to implement its objectives. This includes land appraisals, GIS mapping, preparation of initial and on-going HEP estimates, providing for NEPA as applicable, negotiating with local governments or landowners, obtaining permits, put up fencing, reseeding, etc.

The Tualatin River project consists of securing, restoring, and managing lands within a newly established refuge to protect and enhance fish, wildlife, and waters in the Tualatin River watershed.

Section 2 Key words

Wildlife	X
Anadramous	+
Resident fish	+
O&M	+
M&E	+
Acquisition	X
Resource Management	+
Construction	+
Watershed	+
Biodiversity	+
Ecosystems	+
Enhancements & Restoration	X

Section 3. Relationships to other projects

As stated above, the larger umbrella project has two components: a planning and coordination component and an implementation component. The following is the implementation component: a list of specific implementation projects that includes acquisition, enhancement and O&M activities proposed by OWC members for FY99 and beyond. While these are stand-alone projects, collectively they relate to one another in that their aim is achieving full mitigation for documented wildlife habitat losses in Oregon. Also, this list of projects is a direct product of the coordination and planning activities conducted by the OWC over the last few years. It should be noted that some (or all) of these projects may not go forward for a variety of reasons: unavailable, economically unfeasible, NEPA, timing, etc.

<u>Mitigation area/site</u>	<u>Project Proponent</u>	<u>Activity</u>
Tualatin River Refuge Additions	SERVICE, Metro, ODFW	Acquisition
Wapato Lake Additions	USFWS	Acquisition
Pine Creek	CTWSRO	Acquisition
Cox Butte	USFWS, ODFW, NRCS	Acquisition/easement
Multnomah Slough	Metro, ODFW	Enhancement
Wenaha WMA Additions	ODFW	Acquisition/easement
EE Wilson WMA Additions	ODFW	Acquisition/easement
Granite Creek	ODFW	Acquisition/easement
Mitchell Point	ODFW, CTWSRO	Acquisition/gift(?)
GI Ranch	TNC, CTWSRO, ODFW	Easement/enhance
<u>Mitigation area/site</u> (continued)	<u>Project Proponent</u>	<u>Activity</u>
Logan Valley	BPT, ODFW, TNC	Acquisition

Trout Creek Canyon	ODFW, CTWSRO	Acquisition
Ladd Marsh WMA	ODFW, TNC	Acquisition
Irrigon WMA	ODFW	Acquisition
McKenzie River Island	ODFW, MRT, MRWC	Acquisition
McNary Dist. COE Lands	CTUIR	Enhancement
Malheur River	BPT, ODFW	Acquisition
Horn Butte	ODFW, TNC, BLM	Acquisition/trade

Specific implementation of the Tualatin River project is described in the following sections.

Section 4. Objectives, tasks and schedules

4. Objectives, tasks and schedules

Objectives and tasks

Obj #	Objective	Task a,b,c	Task
1.	Acquisition of lands	a.	Obtain funding
		b	Purchase lands
2	Develop management planning for restoration of land	a	Implement baseline HEP inventories
		b	Develop engineering and design plans for restoration
3.	Restoration of lands	a.	Implement management plans
4.	Monitoring and evaluation	a	Post-implementation HEP inventories
		b	Monitor changes in habitats restored

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date Mm/yyyy	Cost %
1.	10/1999	09/2000	100%
2.	10/2000	09/2001	0% - Outyear \$
3.	10/2001	09/2002	0% - Outyear \$

4.

10/2002

09/2003

0% - Outyear \$

Schedule constraints: Possible constraints may include delays due to NEPA requirements, slow response times from regulatory agencies regarding issuance of permits for proposed enhancement work, etc.

Completion date: On-going project

Section 5. Budget

FY 99 budget by line item

The following budget represents costs for the Tualatin River Additions project.

Item	Note	FY 99
Personnel	Represents a composite of USFWS, ODFW, CTUIR, CTWS and BPT (Oregon Wildlife Coalition) personnel needs as presented in individual contracts for state-wide coordination.	Refer to Umbrella Project (attached)
Fringe benefits	Represents a composite average of OWC fringe rates proportional to their individual contract component amounts. (28.7%)	Refer to Umbrella Project (attached)
Supplies, materials, non-expendable property		Refer to Umbrella Project (attached)
Operations & maintenance	Represents administrative costs associated with the BPT coordination contract.	Refer to Umbrella Project (attached)
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	Acquisition of lands, conservation easements, perpetual lease agreements, grazing leases, etc. estimated based on the balance of the annual earmarked funds in the "Columbia Basin Mitigation ☒ Oregon" WWG regional budget line item after subtracting umbrella coordination contracts.	\$1,000,000
Travel		Refer to Umbrella Project (attached)
Indirect costs	Represents a composite average of OWC indirect rates proportional to their individual contract component amounts. (28.5%)	Refer to Umbrella Project (attached)
Subcontracts		Refer to Umbrella Project (attached)
Other		Refer to Umbrella Project (attached)

TOTAL

Non-capital Coordination Costs
Capital Acquisition Costs.

\$1,000,000

Outyear costs

List budget amounts for the next four years, and the estimated percentage of those costs for operations and maintenance (O&M).

Outyear costs	FY2000	FY2001	FY2002	FY2003
Total Budget	1,350,000	\$1,425,000	\$500,000	\$150,000
O&M as % of total	0%	5%	<30%	100%

Section 6 Abstract

Refer to “Securing Wildlife Mitigation Sites - Oregon” for baseline information.

Located within the North Pacific Coast Ecoregion, the Tualatin River NWR was established as an urban refuge in 1992 to serve a purpose of development, advancement, management, conservation, and protection of fish and wildlife resources. Specifically, it will restore, protect, and manage wetland, riparian, and upland habitats for a variety of migratory birds, anadromous fish, threatened and endangered species, and for the enjoyment of people.

When acquisition is complete, this new refuge will total over 3,000 acres of primarily floodplain habitats within the lower-mid section of the Tualatin River basin located at the northern most end of the Willamette Valley. It will preserve a wetland ecosystem and provide a wildlife center in the shadow of Oregon's largest metropolitan area, Portland. This city and surrounding area of approximately 1.5 million people is experiencing rapid growth and extensive development. The concept of creating the refuge originated from local citizenry, cities, and governments, therefore, it enjoys a tremendous amount of public support.

The refuge's landscape is predominately flat bottomland bordered by uplands. Habitats consist of rivers and streams, seasonal and permanent wetlands, forested wetlands, riparian areas, grasslands, and forested uplands.

The refuge is recognized for importance in wintering arctic nesting Canada geese which include dusky, cackling, taverner's, and lesser sub-species. Aleutian Canada geese winter in small numbers as well. The Pacific greater white-fronted goose migrates through the area during spring and fall migration. In addition, the refuge serves as a migration and wintering area for continental populations of northern pintail and mallard. Wood ducks are an abundant breeding species on the refuge and many other species of waterfowl are migrant and winter users. High quality seasonal and permanent emergent wetlands, forested wetlands, riparian areas, oak woodlands, and transitional grass/forb uplands will serve breeding, migrating, and wintering marsh and shorebirds, breeding neo-tropical migrants, and migrating steelhead and coho salmon in addition to

waterfowl. Biological requirements of the Aleutian Canada goose, peregrine falcon, bald eagle, northern red-legged frog, and the western pond turtle will be partially fulfilled enhancing recovery of each species.

Two high priority areas of management emphasis are to restore native riparian, riverine and wetlands habitat associated with the Tualatin River floodplain and to provide wildlife-dependent public use emphasizing environmental education and interpretation. Riparian, riverine and wetlands are all high priority sub-regional habitat types as identified by the Council. At least ten wildlife species identified in the sub-region are represented in this area. Land acquisition and habitat restoration have dominated refuge activities early-on in refuge development. The refuge has an active acquisition program well underway with approximately 1/3 of the approved 3,058 acres already owned by the Service. A large 400 acre complex of wetland floodplain has been restored as well.

Goals of the Tualatin River NWR include the following:

1. Protect and restore a diversity of native habitats and associated populations of indigenous fish, wildlife, invertebrate and plant species of the Lower Columbia Sub-region and Tualatin River basin.
2. Provide high quality opportunities for wildlands and wildlife dependent recreation and environmental education to enhance public appreciation, understanding and enjoyment of refuge fish, wildlife, habitats and cultural resources with an emphasis towards urban residents.
3. Protect, restore and develop a diversity of habitats for migratory birds such as neotropical songbirds, wading birds and shorebirds with special emphasis on wintering waterfowl.
4. Protect and restore floodplain type benefits associated with the Tualatin River including water quality, flood storage, water recharge, etc.
5. Protect, restore and develop habitats for and otherwise support recovery of Federally listed endangered and threatened species and help prevent the listing of candidate species and species of management concern.

Acquisitions of tracts would allow efforts to proceed for restoring permanent wetlands, seasonal marsh, riparian flooded woodland communities with oxbow wetlands and upland oak woodland/savanna.

Habitats to be restored and managed from the funding initiative consist of seasonal and permanent emergent wetlands, Oregon ash forested wetland, Oregon white oak woodland, riparian corridors, and transitional upland habitats. Emergent wetlands and adjacent transitional uplands will benefit arctic nesting geese, continental populations of northern pintail and mallard, other species of waterfowl, and marsh and shorebirds by providing loafing areas, nocturnal roost sites, and foraging grounds to meet breeding, migratory, and winter maintenance requirements. These habitats will provide an increased population prey base for both peregrine falcon and bald eagle

and shall supplement foraging and resting needs of Aleutian Canada geese. The western pond turtle and northern red-legged frog will benefit from added emergent wetlands. Beaver, river otter and mink will also benefit. Oregon ash forested wetlands and white oak woodlands are severely depleted habitat communities of the Willamette Valley which historically supported a diverse group of neo-tropical migrants. These habitats are considered highest priority for restoration in the Valley. Ash forested wetlands are essential habitat for breeding wood ducks. Oak woodlands provide potential for enhancing nesting habitat of the western pond turtle. Restoration of riparian corridors will improve water quality enhancing passage functions of the Tualatin River for migrating steelhead and coho salmon.

It is imperative baseline and monitoring data be collected to document and assess habitat conditions/restoration efforts and associated wildlife species.

Section 7. Project description

a. Technical and/or scientific background.

1. Council program

The Council's Fish and Wildlife Program is very clear in stating that construction and operation of the federal Columbia Basin hydropower system is a cause of habitat loss for wildlife, and that it is Bonneville's responsibility to mitigate for those losses. Specifically the program says "The goal of this program's wildlife strategy is to achieve and sustain levels of habitat and species productivity as a means of fully mitigating wildlife losses." Acquisition of HUs is the Council's "preferred method" for wildlife mitigation. This can be done either by habitat acquisition via purchase or easement, or enhancement of existing habitat to provide additional HUs (if possible). The implementation component of this project consists of acquisition of lands to provide HUs of high priority habitat types for target species to provide crediting to Bonneville for documented hydropower losses.

2. The Oregon Trust Agreement Planning Project and the GAP analysis:

The BPA Oregon Trust Agreement Planning Project (OTAP) was initiated in 1992 by the OWC to create a list of potential wildlife mitigation opportunities by priority, and to attempt to determine the costs of mitigating wildlife losses in Oregon.

In 1995, at the request of Bonneville, the "Assessing Oregon Trust Agreement Planning Project Using GAP Analysis" project was conducted by the ODFW Wildlife Diversity Program. The primary goal of this project was to prioritize and depict the contribution of each proposed mitigation site to target species and habitats as well as overall bio-diversity in the state and/or ecoregion within which it is found.

A suitability analysis determined which projects were suitable for BPA mitigation now and which remaining projects could be implemented in the near future. The Tualatin River Additions ranked high on the list of projects.

Please see the Methods part of this section for specific information on GAP analysis and its criteria.

The Tualatin River watershed has been severely degraded by agriculture and urban expansion. This funding initiative would focus on and result in benefits to high priority waterfowl species, mammals, neo-tropical migratory birds, anadromous fish, and threatened and endangered species. Habitat restoration would be implemented improving biological diversity of the basin. A large number of willing-sellers have been identified by the Service especially due to the advent of major floods which have recently occurred on the Tualatin River. The refuge has recently restored hydrology characteristics on 400 acres of floodplain complex associated with the former Steinborn dairy consisting of permanent and seasonal emergent wetlands, riparian woodland areas, and meandering riverine channel habitats. Features of the restoration effort included sophisticated fish passage facilities. This project of the refuge compliments wetland restoration and conservation efforts of multiple jurisdictions occurring at many locations within the Tualatin River basin.

b. Proposal objectives.

Two objectives:

1. Coordination and planning of wildlife mitigation in Oregon by and between Oregon wildlife managers

Oregon's wildlife managers have agreed to cooperate in the development and implementation of mitigation projects in the State of Oregon. They have and will continue to coordinate project planning and implementation to increase efficiencies and reduce duplication of process.

The managers will establish and manage an "Oregon Projects Implementation Funding Vehicle" to provide the flexibility and security required to meet changing financial and project implementation scenarios.

2. Implementation of wildlife mitigation activities.

The overall objective of the implementation projects proposed is to provide HU's of highest priority habitat type for target species for Bonneville crediting, as called for in the Council's Fish and Wildlife Program.

The Tualatin River wetland complex and adjacent uplands shall provide major benefits for wintering dusky and cackling Canada Geese as well as wintering continental populations of mallard and northern pintail, breeding wood ducks, numerous migrating shorebirds, breeding

American bitterns and other waterbirds, migrating northern harriers, and breeding black-headed grosbeaks and over 100 species of other breeding neo-tropical migratory birds. Benefits will also be extended to the Aleutian Canada goose, bald eagle, and the peregrine falcon by virtue of providing loafing areas, roost sites, and foraging grounds to meet migratory and winter maintenance requirements. Western pond turtles and the northern red-legged frog shall benefit from added emergent wetland habitat and restoration of riparian shrub. Restored meandering riverine channels and riparian shrub will re-establish upstream spawning populations of native cutthroat trout and shall improve water quality enhancing passage functions of the Tualatin River for migrating steelhead and coho salmon. Black-tailed deer and other mammal species will benefit also.

The North Pacific Coast Ecoregion historically supported large numbers of migratory and wintering waterfowl, especially in the Willamette Valley. Willamette Valley habitats are national recognized for their importance in wintering significant continental populations of four goose sub-species which include dusky (*Branta canadensis occidentalis*) and cackling (*Branta canadensis minima*) as well as taverner's (*Branta canadensis taverneri*) and lesser (*Branta canadensis parvipes*) Canada geese. Another sub-species of Canada goose which winters in the Willamette Valley, although to a lesser extent, is the Aleutian (*Branta canadensis leucoparcia*). In addition, the Vancouver (*Branta canadensis fulva*), and western (*Branta canadensis moffitti*) sub-species are found in the Valley as well, but are traditionally more resident. The Pacific greater white-fronted goose (*Anser albifrons*) migrates through this region during spring and fall.

The projects restored and/or enhanced seasonal and permanent wetlands as well as adjacent uplands will benefit all of the above varieties of geese by providing loafing areas, nocturnal roost sites, and pasture/cropland foraging grounds to meet migratory and winter maintenance requirements.

The Willamette Valley also serves as a migration and wintering area for continental populations of northern pintail and mallard. It functions as an important staging grounds for both species during spring migration. Significant populations of mallards breed in the Valley as well. Restoration and management of seasonal wetlands for producing moist soil aquatic plants shall provide critical foraging habitat for pintail and mallard populations in fall, winter, and early spring. Once restored and/or enhanced, permanent wetlands will be managed to optimize open water/emergent vegetation interspersed relationships for enhancing mallard production.

The project will provide restored Oregon ash forested wetland within the management unit. Wood ducks, an abundant breeding species on the refuge, shall benefit greatly from breeding, nesting, and brood habitats gained through restoration of this unique plant community. Redheads, canvasback, and ring-necked ducks are all migration dependent and winter users of the area. Both seasonal and permanent wetlands will provide additional foraging and loafing sites for these species.

Numerous other waterfowl species with breeding, migration, and wintering biological requirements will profit from improved wetland habitat conditions. Dominant breeders include hooded merganser and cinnamon teal while migration/wintering species consist of wigeon, green-

winged teal, norther shoveler, gadwall, bufflehead, lesser scaup, common goldeneye, common merganser, and both tundra and trumpeter swan.

Although a fairly uncommon transitory visitor, the sanderling frequents the Willamette Valley during migration. It would benefit from restored feeding sites associated with seasonal wetland habitat. Many other shorebirds including long-billed dowitchers, dunlin, western and least sandpipers, common snipe, and yellowlegs will take advantage of enhanced security and feeding habitats as moist soil seasonal wetlands are flooded in fall and drawn down in spring.

A wide variety of habitats; seasonal and permanent wetland, forested wetland, riparian shrub, and transitional upland will be restored creating a mosaic of plant communities attractive to numerous species of migratory birds, including many neo-tropical migrants. High priority species shall be influenced in a positive manner as follows:

Common Loon - Although considered a rare winter visitor, this species could benefit from increased foraging and loafing opportunities associated with additional acres of permanent wetland.

American Bitter - Seasonal and permanent wetland restoration and/or enhancement will diversify wetland plant communities meeting needs of migrant and wintering birds. Emergent vegetation of permanent wetlands can enhance breeding populations of this species by increasing nesting and brood habitats.

Northern Harrier - The wetland complex and adjacent uplands will help supplement prey base requirements of this species.

Sandhill Crane - Upland and seasonal wetland components of the project shall provide migration and nesting habitats for this species.

Short-eared Owl - The wetland complex and adjacent uplands will help supplement prey base requirements of this species when migrating through the project area.

Sanderling - This species should benefit from restored feeding sites associated with moist soil plant communities resulting from seasonal wetlands being flooded in fall and drawn down in spring.

Black-headed Grosbeak - Restored habitats will compliment edge areas contiguous to mixed deciduous/coniferous forest, a habitat bordering the project area which fulfills all breeding life cycle requirements of this species.

The refuge provides habitat for a number of threatened and endangered and/or candidate species including the Aleutian Canada goose (*Branta canadensis leucopareia*), bald eagle (*Haliaeetus leucocephalus*), peregrine falcon (*Falco peregrinus*), western pond turtle (*Clemmys marmorata marmorata*) and the northern red-legged frog (*Rana aurora aurora*). Restoring and/or enhancing seasonal and permanent wetlands and transitional uplands will benefit Aleutian Canada geese by

providing loafing areas, nocturnal roost sites, and foraging grounds to meet migratory and winter maintenance requirements. These habitats will also provide an increased prey base for both bald eagles and peregrine falcons which migrate and winter in the area. Recovery plans for all three species identify the need to reestablish populations in historic ranges and provide for their migration and wintering habitat requirements. The western pond turtle and northern red-legged frog will benefit from added emergent wetland habitat and the restoration of riparian shrub.

Restoration of riparian areas will also improve water quality enhancing passage functions of the Tualatin River for migrating steelhead and coho salmon. Many of the coho salmon populations in western Oregon are being considered for listing.

c. Rationale and significance to Regional Programs

This project is consistent with all known local, state, federal, and tribal laws. The NWPPC has approved similar projects in Oregon and other states. BPA has successfully implemented several projects in Oregon in the last seven years. The project is covered under the BPA Wildlife and Watershed Programmatic EIS documents (BPA 1997b, BPA 1997c, BPA 1997a). The project is consistent with several areas of the Council's Fish and Wildlife Program. Specifically, it is consistent with Section 7.6 of the FWP which calls for watershed based habitat restoration focusing on protecting of wild and natural populations. It is also consistent with Section 11 of the Program which identifies wildlife resource needs. See project scientific/technical background and history sections.

This project of the refuge compliments wetland restoration and conservation efforts of multiple jurisdictions occurring at many locations within the Tualatin River basin.

d. Project history

The history of this project is three-fold: first is the history of Bonneville wildlife mitigation efforts, to give the reviewer an understanding of project structure and how it fits within the regional program. Second is the history of Oregon's efforts to work with Bonneville, the Council and the Wildlife Working Group (CBFWA Wildlife Caucus) to give the reviewer an understanding of how the project developed, its current status and funding assumptions. This includes a history of the Oregon Trust Planning Project and GAP Analysis. See the umbrella proposal "Securing Wildlife Mitigation Sites - Oregon", for discussion of these. The third discussion is project specific to the establishment of Tualatin River NWR as follows:

Located within the North Pacific Coast Ecoregion, the Tualatin River NWR was established as an urban refuge in 1992 to serve a purpose of development, advancement, management, conservation, and protection of fish and wildlife resources. Specifically, it will restore, protect, and manage wetland, riparian, and upland habitats for a variety of migratory birds, anadromous fish, threatened and endangered species, and for the enjoyment of people.

When acquisition is complete, this new refuge will total over 3,000 acres of primarily floodplain habitats within the lower-mid section of the Tualatin River basin located at the northern most end

of the Willamette Valley. It will preserve a wetland ecosystem and provide a wildlife center in the shadow of Oregon's largest metropolitan area, Portland. This city and surrounding area of approximately 1.5 million people is experiencing rapid growth and extensive development. The concept of creating the refuge originated from local citizenry, cities, and governments, therefore, it enjoys a tremendous amount of public support.

Two high priority areas of management emphasis are to restore native habitats associated with the Tualatin River floodplain and to provide wildlife-dependent public use emphasizing environmental education and interpretation. Land acquisition and habitat restoration have dominated refuge activities early-on in refuge development. The refuge has an active acquisition program well underway with approximately 1/3 of the approved 3,058 acres already owned by the Service. A large 400 acre complex of wetland floodplain has been restored as well.

e. Methods.

1. For selecting implementation projects:

OTAP: The primary goal of OTAP was to prioritize and depict the contribution of each proposed mitigation site identified to target species and habitats as well as overall biodiversity in the state and/or ecoregion within which it is found.

GAP Analysis: The term GAP refers to the gaps in protection designed for the biological ecosystems upon which all life is dependent. The fundamental unit of analysis and protection is the vegetation or habitat type. The GAP project is considered a proactive rather than reactive form of focusing and directing land management activities. The information compiled and generated by the GAP Analysis program is intended to be used for the development of a biodiversity management plan. GAP gathers the known information about communities and the nature of their protection before it is too late. This allows land managers to 1) assess the current land management situation, 2) identify important areas in need of further research, 3) develop and analyze management options, and 4) take steps towards insuring protection of biodiversity before additional species become threatened or endangered with extinction.

HEP: Habitat Evaluation Procedures (HEP) will be used to obtain HU's to provide mitigation credit to Bonneville. Each specific implementation project will use HEP and various enhancement, restoration or management techniques to provide and/or maintain habitat units as contracted with Bonneville.

2. Tualatin River NWR Project Implementation

Acquisition of tracts would allow efforts to proceed for restoring permanent wetlands, seasonal marsh, riparian flooded woodland communities with oxbow wetlands, and upland oak woodland/savanna. Parcels are hydrologically linked and topographic relief is such that restoration efforts would be burdened with additional levees and flowage easements if not purchased individually within a reasonable amount of time. This area has the greatest potential for promoting biological diversity for it possesses the necessary physical characteristics for

supporting all of the historic habitat types of the river basin and supports cultural resource attributes as well. The project area would improve present floodplain ecological functions of the Tualatin River basin; restore habitat for waterfowl, wading birds, and shorebirds. Riparian flooded woodland and oak woodland/savanna habitats would sustain species richness for neo-tropical migrants such as yellow warbler; belted kingfisher; willow flycatcher and Lewis's woodpecker; western wood-pewee; western bluebird, respectively. Lands abut the Tualatin River; therefore, great opportunities exist for enhancing river conditions and subsequent migrant habitat of anadromous fish like steelhead and coho salmon.

As the refuge moves forward in land acquisition and development, so will its necessity for habitat maintenance programs. These programs will play a key role in habitat restoration and would become essential in performing long-term habitat maintenance. Programs will include water control structure regulating, water usage documentation and wetland discing, as well as dyke maintenance and pump operations.

It is imperative baseline and monitoring data be collected to document and assess habitat condition/restoration efforts and associated wildlife species. A biological program is needed to develop methodologies aimed at determining the existing state of species occurrence/habitat usage and monitoring their change over time as landscapes are restored. Over the long-term, a biological program will strengthen management decision-making by evaluating physical site characteristics; developing technologies for restoring less understood upland communities such as oak woodland/savanna; facilitating specific objective settings for the amount, condition, and spacial requirements of habitats and affiliated wildlife species; and assessing habitat management strategies to determine their effectiveness in achieving desired objectives.

f. Facilities and equipment.

The coordination, planning and acquisition components of this project do not require any new facilities or equipment. Each specific implementation project will provide a detailed breakdown of the facilities and/or equipment necessary to fully implement that project. As part of a complex of existing national wildlife refuges, these costs should be minimal in future years.

g. References.

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Section 8. Relationship to other projects

The following projects are on-going Bonneville funded wildlife mitigation and watershed projects in Oregon. All of the on-going wildlife projects were used in evaluating the proposed implementation projects that are part of this proposal. Additionally, all of the on-going watershed projects are adjacent to and/or will provide substantial benefits and linkages to the proposed implementation projects.

#9506001 - Confederated Tribes of the Umatilla Indian Reservation ☐ **Squaw Creek Watershed Project** ☐ **Wildlife Portion**

#9009200 - Confederated Tribes of the Umatilla Indian Reservation ☐ Conforth Ranch ☐ O&M and Enhancement

#9701200 ☐ Confederated Tribes of the Warm Springs Reservation in Oregon ☐ **Crates Point**

#9608000 ☐ Nez Perce Tribe ☐ **Northeast Oregon Wildlife Mitigation Project**

#9107800 ☐ Oregon Department of Fish and Wildlife ☐ **Burlington Bottoms Wildlife Mitigation Project**

#9206800 ☐ Oregon Department of Fish and Wildlife ☐ **Willamette Basin Acquisition**

#9205900 ☐ The Nature Conservancy ☐ **Amazon Basin/Eugene Wetlands** ☐ **Phase II**

#8402100 - Oregon Department of Fish and Wildlife ☐ **Mainstem, Middle Fork & North Fork John Day River** ☐ **Implementation/O&M**

#8402500 - Oregon Department of Fish and Wildlife ☐ **Grande Ronde Habitat Enhancement** ☐ **Implementation/O&M**

#8710002 - Oregon Department of Fish and Wildlife ☐ **Umatilla Habitat Improvement/ODFW** ☐ **Implementation/O&M**

#9304000 - Oregon Department of Fish and Wildlife ☐ **Fifteen Mile Creek Habitat Improvement** ☐ **O&M**

#9404200 - Oregon Department of Fish and Wildlife- **Trout Creek Operation & Maintenance**

#9303000 ☐ SWCD ☐ **Buck Hollow Watershed Enhancement (SWCD)**

#9608500 ☐ Umatilla Basin Watershed Council ☐ **Coordination of Watershed Projects in the Umatilla River Basin**

#8400800 ☐ US Forest Service ☐ **North Fork John Day Habitat Improvement**

#9303800 ☐ US Forest Service ☐ **North Fork John Day Area Riparian Fencing**

#9607700 ☐ US Forest Service ☐ **Meadow Creek Restoration**

#9605300 ☐ US Forest Service/ Confederated Tribes of the Umatilla Indian Reservation ☐ **North Fork John Day River Dredge Tailings Restoration Project**

#9402700 - Grande Ronde Model Watershed Program ☐ **Grande Ronde Model Watershed Habitat Projects**

#9304500 ☐ Oregon Department of Fish and Wildlife ☐ **Buck Hollow Watershed Enhancement**

Section 9. Key Personnel

1. Ralph Webber
Refuge Manager, Tualatin River NWR
Education:
 BS - Range Management, Washington State University, 1977
 BS - Wildlife Biology, Washington State University, 1977
U. S. Fish and Wildlife Service:

20 years experience; five field stations

Wildlife Biologist, Assistant Refuge Manager, Refuge Manager

Resource Experience:

Waterfowl, endangered species, seabirds, marine mammals, big game, esturine and freshwater wetlands

2. Bruce Wiseman

Wildlife Coordinator, BPA Mitigation Program

Education:

BS - Wildlife Management, Washington State University, 1968

U. S. Fish and Wildlife Service:

30.5 years experience

Refuge Manager, Assistant Refuge Manager, Wildlife Biologist, Fish and Wildlife Biologist

Resource Experience:

Wetlands/waterfowl management, big game management, high desert habitats

Section 10. Information/technology transfer

The monitoring and evaluation information will be available as referenced on the U.S. Fish and Wildlife Service Home Page on the Internet.