RECLAMATION

*Managing Water in the West*

**Draft Environmental Assessment**

# Proposed Water Service Contract Palmer Creek Water District Improvement Company

**Willamette River Basin Project, Yamhill County, Oregon**

**Bureau of Reclamation**
**Pacific Northwest Region**
**Lower Columbia Area Office**
**Portland, Oregon**

**U.S. Department of the Interior**
**Bureau of Reclamation**
**Pacific Northwest Region**
**Portland, Oregon**

**March 16, 2007**

# Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

**BUREAU OF RECLAMATION**
**Pacific Northwest Region**
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**Portland, Oregon**

**Draft Environmental Assessment**

# Proposed Water Service Contract Palmer Creek Water District Improvement Company Willamette River Basin Project, Oregon

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# List of Acronyms and Abbreviations

| | |
|---|---|
| AFLHD | Agriculture/Forestry Large Holding District |
| BA | Biological Assessment |
| BIA | Bureau of Indian Affairs |
| cfs | cubic feet per second |
| Corps | U.S. Army Corps of Engineers |
| DEQ | Oregon Department of Environmental Quality |
| EA | Environmental Assessment |
| EFH | Essential Fish Habitat |
| EO | Executive Order |
| ESA | Endangered Species Act |
| ESU | Evolutionary Significant Units |
| hp | Horsepower |
| ITA | Indian Trust Assets |
| MSA | Magnuson-Stevens Fishery Conservation and Management Act |
| NEPA | National Environmental Policy Act |
| NMFS | National Marine Fisheries Service |
| ODFW | Oregon Department of Fish and Wildlife |
| OWRD | Oregon Water Resources Department |
| PCWD | Palmer Creek Water District Improvement Company |
| Reclamation | Bureau of Reclamation |
| RM | River Mile |
| SHPO | State Historic Preservation Office |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |

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# CHAPTER 1. - Purpose and Need for Action

## 1.1. Introduction

This Environmental Assessment (EA) analyzes the potential environmental impacts of allowing the Palmer Creek Water District Improvement Company (PCWD or District) to purchase irrigation water from reservoir storage in the Willamette River Basin Project (Project) through a proposed water service contract. The Bureau of Reclamation (Reclamation) is authorized to administer water service contracts for agricultural use of water stored in and released from the Project. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA).

## 1.2. Purpose and Need for Action

The underlying purpose and need to which Reclamation is responding is the PCWD request for a water service contract. The District is pursuing this contract as an "insurance policy" during dry years and against potential future competition for water resources. However, a water service contract does not guarantee Project water will be available.

## 1.3. Background

The following information is provided to help illustrate the Proposed Action described in Chapter 2 and justify Reclamation's involvement.

The U.S. Army Corps of Engineers (Corps) constructed and operates the Willamette Basin Project consisting of 13 reservoirs with a combined total of 1.6 million acre-feet of water storage. Contracts for Project water are administered by Reclamation. The PCWD was organized in 1967 as a water improvement district under Oregon State law to manage and distribute water to farmland within its boundaries. Today, PCWD distributes water to irrigate approximately 6,150 acres on 56 farms in Yamhill County, Oregon. The water is supplied from a combination of sources: PCWD has water rights for Willamette River streamflow, a contract with Reclamation for Project water, and groundwater wells. Water from this combination of sources does not guarantee that PCWD will always have enough water to meet the needs of its members. PCWD is

concerned about the potential for a water supply shortage during drought conditions and when water users with senior water rights leave the District with a reduced supply. Other needs in the basin may further reduce the available supply of water. An additional water service contract will decrease future economic risk for PCWD members by increasing its water supply resources and options during times of shortage but does not guarantee that Project water will be provided.

The PCWD made a similar contract request in the mid-1990s, and an EA was prepared and circulated for public comments in 1996. Several comments were received and are provided in Appendix A of this document including comments from Water Watch, a nonprofit environmental organization that works to restore and protect streamflows in Oregon's rivers. Water Watch objected to a number of missing details in the original EA. Among other things, they pointed out a lack of current water use data, and they suggested that the water service contract be issued for a temporary period until other studies were completed. Many of their comments were addressed through discussions between Reclamation and Water Watch. In 1999 Water Watch informed Reclamation of issues that remained to be addressed. This version of the EA addresses those comments. A Final EA and Finding of No Significant Impact (FONSI) were not completed, and Reclamation has not made a decision to grant or deny the PWCD contract request.

## 1.4. Location

The study area, within which PCWD's service area is located, is shown in Figure 1. The northern boundary is formed by the Yamhill River, the eastern boundary is the Willamette River, the southern boundary is the Yamhill County line, and the western boundary includes Jerusalem Hills and Lafayette Highway. The township and range locations of the general study area are approximately: Township 4 South, Range 3 West, Sections 15-22 and 26-35; Township 5 South, Range 3 West, Sections 3-10, 15-22, and 26-34; and Township 6 South, Range 3 West, Sections 4, 5, and 6 of the Willamette Meridian. Lands that are within the PCWD service area are owned by individual landowners except for approximately 1.5 acres of land owned by PCWD.

## 1.5. Description of Current Facilities

The PCWD diverts water from the Willamette River with a combination of three pumps located at its pump house (Photographs 1, 2, and 3) at River Mile (RM) 73.5 at the southern (upstream) end of the District service area. During the irrigation season that runs from April 1 through September 30, the pumps divert a maximum of 45 cubic feet per second (cfs) into a 3-mile-long earthen canal that runs from the pump house to Palmer Creek. The water runs down Palmer Creek (northward) for approximately 15 miles to the town of Dayton, Oregon, where it

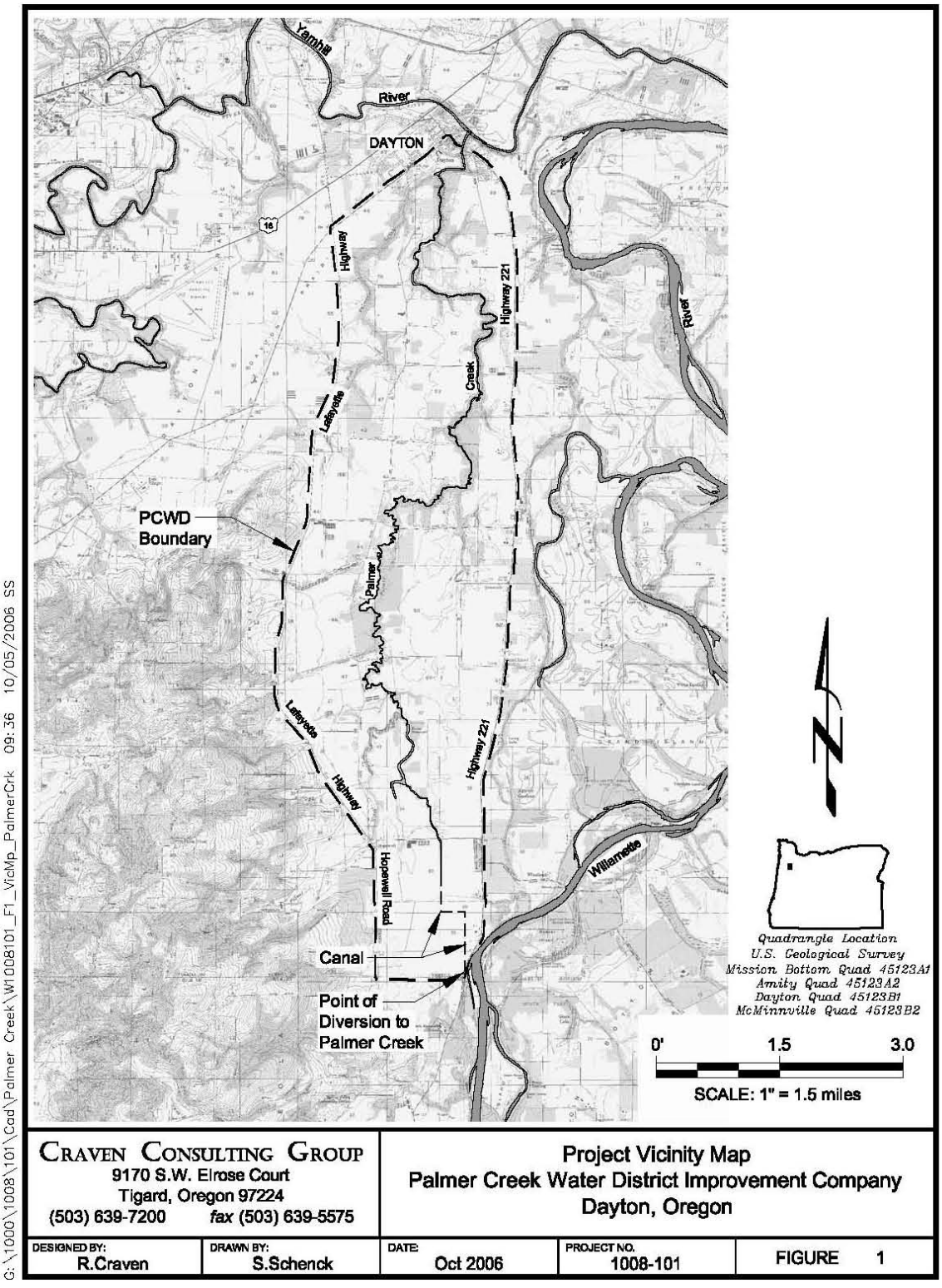


**Figure 1**. Project vicinity map, PCWD, Dayton, Oregon.

**Photograph 1.** East view of existing pump house. Intake at base of slope.

**Photograph 2**. East view of existing intake at base of slope.

**Photograph 3.** West view from intake showing pump house.

flows into the Yamhill River at RM 5. PCWD members divert their portion of the water supply from 40 separate locations on the canal, Palmer Creek, or the Yamhill River. The choices that District members make about crops, field rotation, irrigation systems, and other agricultural practices determine the volume of water used and number acres irrigated in any year, provided the place of use and the amount of water is within the amount allowed by Oregon Water Resources Department (OWRD).

## 1.6. Other Related Actions or Activities

The PCWD pump intake on the Willamette River is screened to prevent fish from getting caught in the intake, but the screen does not meet all of the current fish screen standards. The low velocity of the river at the pump intake has made designing a viable intake screen that meets State and Federal standards especially difficult and expensive. The District will install a slant retrievable intake screen

sized for up to 50 cfs. The fish screen improvement project is a separate and ongoing PCWD activity.

The Corps, the Bonneville Power Administration (BPA) and Reclamation are in consultation with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) as required by Section 7(a)(2) of the Endangered Species Act (ESA) since the Project effects threatened and endangered species protected by ESA. Reclamation is a participant in this consultation because of the water service contracting program in the Willamette Basin.

# CHAPTER 2. - Alternatives

## 2.1. Introduction

Alternatives which meet the objectives and the need for PCWD's proposal are described in this chapter. The PCWD considered other potential water supplies in addition to the Proposed Action but has eliminated all but the Proposed Action. The No Action Alternative is the most likely future scenario if the Proposed Action is not implemented and is provided for comparison with the Proposed Action.

## 2.2. No Action Alternative

The No Action Alternative is a decision by Reclamation to deny the PCWD application for a water service contract. The District would continue to use its available water supply including the one existing water service contract, groundwater, and surface flow water rights. No additional water from upstream Federal reservoirs would be utilized by PCWD. The District would continue to operate its pumps on the Willamette River to divert its water right and its existing supply of Project water. It would continue to use groundwater. New groundwater supplies are limited in PCWD service area.

To date, the District has been able to operate with the available combined water resources. In the future, without a secure and dependable supply of water from a variety of sources, the District and its members could face substantial economic risk during years when water demands in the Willamette River Basin exceed the available supply. The water supply is constrained by many factors: increasing demand for commercial and domestic water, cycles of drought, water for the river, water quality maintenance, and water for aquatic habitat. The District also is concerned that water users with senior water rights or claims for water rights that predate the 1909 Oregon water code could further restrict its available supply.

## 2.3. Proposed Action

The Proposed Action is the PCWD request for a water service contract for use of up to 12,250 acre-feet water from Federal reservoirs in the Willamette River Basin. Of this amount, 11,269 acre-feet is requested for supplemental water on 4,522 acres. The remaining 981 acre-feet is a primary irrigation water supply for

421 acres. Supplemental water is only available for use after the primary water supply is exhausted or becomes unavailable as determined by the State based on the water right priority date. Because the supplemental water cannot be used prior to or concurrently with the primary water, the supplemental water does not result in an increase in water diverted from the river. The primary irrigation water supply, when used to it fullest extent, increases pumping from the Willamette River by 5.27 cfs which is transported by canal to Palmer Creek. The PCWD is not constructing or expanding its water delivery system to accommodate additional water. Its facilities have the capacity to pump and transport the additional 5.27 cfs as does the channel of Palmer Creek.

## 2.4. Alternatives Considered but Eliminated from Further Consideration

### 2.4.1. Groundwater Supplies

Under this alternative, PCWD would continue diverting water in compliance with its existing water rights and a previously obtained Reclamation contract for stored water. PCWD would develop and pump groundwater as necessary for a supplemental water supply.

The groundwater resources in the PCWD area are very limited. PCWD members have attempted to install groundwater wells several times since 1956, and have found that the sand and fine gravels have unsustainable yields. Consultation with OWRD (Pers. Comm., Donn Miller, OWRD, Hydrogeologist, July 17, 2006) indicates that the feasibility of producing the required volume of water from groundwater resources in the Dayton area would be low (Appendix B). It is Mr. Miller's opinion that many wells, on the order of 250 feet deep, would be required. In addition, Mr. Miller indicated that it would be difficult to obtain water use permits for irrigation wells in this area due to the "potential for interference with nearby surface water."

Therefore, this alternative has not been examined in detail due to prohibitive costs of well development, the number of wells required to obtain the additional water, the lack of an extensive groundwater supply, and the inability of this option to provide even a short-term solution to PCWD's irrigation needs.

### 2.4.2. New Dams or Other Water Storage Facilities

The confluence of Palmer Creek and the West Fork of Palmer Creek (near the City of Dayton) was previously identified as a potential dam site by Reclamation and OWRD (Pers. Comm., Sam Sweeney, PCWD, former Secretary, November 24, 1993). This option is not a feasible alternative because of the need for a water storage right and construction expenses including individual conveyance systems to pump the water back up to the irrigable lands; the dam site would be lower in elevation than the majority of the lands in the PCWD service area.

This alternative has not been examined in detail due to the prohibitive costs of a fatal flaw analysis for dam or lake sites and lack of a suitable location for a water storage facility. Overall, the costs and environmental impacts associated with dam construction would far outweigh the benefits associated with the additional water supply.

### 2.4.3. New Water Right for Natural Flow from the Willamette River

This alternative would allow additional water diversion from the Willamette River to supplement existing natural flow water rights and storage contracts. This alternative is not a viable option because additional natural flows from the Willamette River generally are not available downstream of Salem, Oregon, during the irrigation season (Pers. Comm., Donn Miller, OWRD, Hydrogeologist, July 18, 2006). Even if an application is submitted and new rights are granted, it would not improve the current situation because the rights would be junior to other water right holders, and it is unlikely that water would be available during a low water year.

### 2.4.4. Conservation of Existing Irrigation Water Supply

This alternative would involve no new additional water rights or contracts. Existing PCWD water would be conserved in an attempt to meet demands.

The current delivery system consists of a 300-horsepower (hp) pump and two 130-hp pumps that divert water from the Willamette River at RM 73.5. The water is pumped into a 3-mile-long dirt canal which conveys it to Palmer Creek. The water is diverted from the canal by individual users and is applied primarily through sprinkler irrigation. Management practices employed by PCWD members are within agriculture industry standards for scheduling, operation, and maintenance of this irrigation equipment. PCWD members are motivated to operate their systems at high efficiency because of the costs associated with pumping, nutrient loss, and erosion.

Application rates are based on gypsum block studies of soil moisture content performed in this area in the 1960s. Nearly all irrigation in PCWD is by sprinklers and drip irrigation. In some cases, individual farms have built and operated irrigation water recycling systems (Pers. Comm., Sam Sweeney, PCWD, former Secretary, July 18, 2006).

PCWD collects data from totaling water meters at each farm diversion every year. Annual member surveys, which are voluntary, provide enough data to gauge efficiencies for many farms within PCWD's service area and to extrapolate district-wide efficiencies. On-farm efficiency is typically between 50 to70 percent, which also is within agriculture industry standards for sprinkler systems. Drip systems achieve from 75 to 95 percent efficiency (Pers. Comm., Sam Sweeny, PCWD, former Secretary, July 18, 2006).

The cost associated with upgrading the conveyance and sprinkler equipment to improve system operating efficiency is expected to be prohibitive. Some incremental improvements could be realized by relatively low-cost, labor-intensive actions such as rejetting sprinklers, pan studies to fine tune application rates, and more soil moisture monitoring. These actions could result in a few percentage points of on-farm efficiency. Each incremental improvement in efficiency comes at a higher cost. Conversion to more efficient drip systems would improve on-farm efficiency to more than 80 percent, but at an initial cost of approximately $400 per acre and an annual cost of more than $250 per acre for row crops (Pers. Comm., Sam Sweeney, PWCD, former Secretary, July 18, 2006). Many operations in PCWD are already using drip systems. Even if the system were to operate at near 100 percent efficiency, the amount of additional water obtained in this manner would be inadequate to meet PCWD needs because the incremental increase in supply would not meet irrigation demand in a worst case scenario—severe drought or a call by senior rights.

Conveyance system efficiency is approximately 55 percent (Pers. Comm., Jon Bartch, PCWD, Secretary, September 29, 2006). More water is diverted at the Willamette pumping station than is used within the District because of the configuration of the main canal and the use of Palmer Creek as a conveyance system (Pers. Comm., Sam Sweeney, PWCD, former Secretary, July 18, 2006). Water lost in this system flows as surface water in Palmer Creek to the Yamhill River, is consumed by riparian vegetation, lost to evaporation, and to a limited extent, infiltrates to the local aquifer.

PCWD is concerned by the potential for an irrigation water supply shortage. In a severe drought situation, or in the event of a far-reaching early priority call, PCWD would be enjoined from diverting any natural flow from the Willamette River. Technological water conservation measures would do little to increase the water available to irrigators if the water is simply not available for diversion. In a less severe drought, PCWD's water supply would be interrupted incrementally according to priority date. Conservation could buffer the effects of this reduction, but not in a cost-effective manner. Fallowing or resort to dry-land farming likely would be the outcome.

# CHAPTER 3. - Affected Environment and Environmental Consequences

## 3.1. Introduction

Environmental resources potentially impacted by the Proposed Action and other issues of concern are described in this chapter. Following each resource is a discussion of the potential impacts of the Proposed Action and the No Action Alternative. The impacts include identifying and describing any direct, indirect, or cumulative effects. If mitigation is appropriate to reduce the impact on a resource, it will also be described. The following resources are not discussed in this chapter: climate, air quality, soils, geology, noise, mineral resources, topography, energy, or hazardous waste. Impacts to these resources were considered but not analyzed in detail because they are not affected by the project.

## 3.2. Economics

### 3.2.1. Affected Environment

Yamhill County has a population of approximately 85,000. The principal industry in the county is agriculture. The City of Dayton, which is the closest city to the PCWD service area, has a population of approximately 2,100. The Dayton-area economy is primarily driven by agriculture. Within the PCWD's service area, nurseries, fruit orchards, vineyards, and other row crop farms rely heavily upon irrigation water to support agricultural production.

### 3.2.2. Environmental Consequences

The proposed project would ensure continued and increased agricultural production in the PCWD service area by providing a supplemental water supply to 4,522 acres of land and a primary water supply to 421 acres of land. Presently, PCWD provides water to approximately 6,150 acres of irrigable land. Economic benefits to the community resulting from the proposed contract include helping to ensure future viability in the farming profession and future economic vitality in the region. In the event of a water-short year, the proposed contract would make available a supplemental water supply to irrigators, thereby reducing the potential for economic losses to farmers during dry years.

An increase in the gross personal income of some PCWD members may occur from application of the proposed contract water to the 421 acres of agricultural

land that is not presently irrigated. In addition, the availability of supplemental water during low-water years also could increase personal income by an unknown amount. The potential increase in gross personal income would occur without adverse impacts on the infrastructure of the community. The increase in farm production would not result in increases in services for schools, domestic water or sewage, fire protection, road improvement, or other community support programs because only minimal increases in employment opportunities would occur.

## 3.3. Hydrology

### 3.3.1. Affected Environment

The Project is operated as a system of dams and reservoirs by the Corps. Reclamation has no authority to make operational decisions. The Corps coordinates releases from 13 reservoirs to meet streamflow targets measured at gages on the mainstem Willamette River at Albany and Salem during the irrigation season. Project water that any current or future contractor may withdraw is not specifically released for irrigation contractors. Due to PCWD's point of diversion on the mainstem Willamette, water from any combination of the upstream reservoirs may contribute to the withdrawn water.

Each year the Corps makes operating decisions according to water availability hydrologic forecasts, and other factors. The United States reserves the right in its contracts to reduce or deny water supply when it is not available. It is possible and probable that any low-water year in which the Corps is unable to meet flow targets, the available water supply would be apportioned according to the priority dates of the diversion rights issued by the State of Oregon. Economic and other hardships to water users in drought years will occur. This is not unique to water users with Reclamation water service contracts; other water users such as municipal and industrial users will face water supply shortages in the Willamette Valley during these periods.

The Willamette River in the main channel generally flows within a range of 10,000 to 20,000 cfs during the irrigation season near PCWD. The OWRD estimates the Yamhill River has an annual range of 100 cfs to 4000 cfs, and Palmer Creek has an annual range of 0 to 140 cfs. The District pumps 45 cfs from the Willamette River. Annual rainfall strongly influences how early in the irrigation season PCWD starts using water from its contract supply.

### 3.3.2. Environmental Consequences

Impacts on water resources in the Project reservoirs, the Willamette River, Palmer Creek, and the Yamhill River were considered by evaluating potential changes in water levels and the effect on prior water rights (Table 1). The change to the

**Table 1. Present water rights for existing natural flow, contract flow, and proposed contract flows for PCWD**

| Source | Permit No. | Priority | Acres | Acre-Feet | Rate (cfs) |
|---|---|---|---|---|---|
| **1.0 Natural Flow from Willamette River** | 32243 | 1967 | 3,265.20 | 8,163.00 | 40.82 |
| | 34436 | 1969 | 288.70 | 721.75 | 3.61 |
| | 36216 | 1971 | 53.60 | 134.00 | 0.67 |
| | 39385 | 1975 | 219.60 | 549.00 | 2.75 |
| | 41499 | 1977 | 103.30 | 258.25 | 1.29 |
| | 42316 | 1977 | 60.00 | 150.00 | 0.75 |
| | 43380 | 1978 | 234.20 | 585.50 | 2.92 |
| | 44954 | 1980 | 294.90 | 737.25 | 3.69 |
| | 47405 | 1981 | 262.39 | 655.98 | 16.87 |
| | 50945 | 1987 | 397.20 | 993.00 | 4.97 |
| | 51959 | 1990 | 439.60 | 1,099.00 | 5.50 |
| | A-70109 | 1989 | 6.10 | NR | 0.06 |
| | A-70110 | 1989 | 431.70 | NR | 21.10 |
| | A-72668 | 1992 | 94.20 | NR | 2.36 |
| | **TOTAL** | | **6,150.69** | **14,046.73** | **107.36** |

| Source | Permit No. | Priority | Acres | Acre-Feet | Rate (cfs) |
|---|---|---|---|---|---|
| **2.0 Existing Storage Contract With Reclamation for Supplemental Water Supply** | 43379 | 1984 | 806.4 | 927.36 | NR |

| Source | | Application | Priority | Use | Acres | Acre-Feet | Rate (cfs) | Total cfs |
|---|---|---|---|---|---|---|---|---|
| **3.0 Proposed Contact with Reclamation** | **Supplemental Irrigation** | A-70109 | 1989 | Irrigation | 6.10 | 15.25 | 0.0250 | 0.15 |
| | | A-70110 | 1989 | Irrigation | 274.20 | 679.00 | 0.0250 | 6.86 |
| | | A-71731 | 1991 | Irrigation | 43.95 | 109.75 | 0.0125 | 0.55 |
| | | A-72668 | 1992 | Irrigation | 94.20 | 205.00 | 0.0250 | 2.36 |
| | | A-76860 | 1995 | Irrigation | 4,104.00 | 10,260.00 | 0.0125 | 51.3 |
| | | **Supplemental Totals** | | | **4,522.45** | **11,269.00** | | **61.22** |
| | **Primary Irrigation** | A-71731 | 1991 | Irrigation | 56.50 | 141.25 | 0.0125 | 0.71 |
| | | A-72555 | 1992 | Irrigation | 48.00 | 48.00 | 0.0125 | 0.60 |
| | | A-76860 | 1995 | Irrigation | 316.67 | 792.00 | 0.0125 | 3.96 |
| | | **Primary Totals** | | | **421.17** | **981.25** | | **5.27** |
| | | **TOTAL PRIMARY & SUPPLEMENTAL** | | | **4,943.62** | **12,250.25** | | **66.49** |

NR = Not Reported in water right.

water surface elevation of the reservoirs in the Project will be insignificant because the irrigated land lies downstream of the reservoirs in the Project, and stored water could come from any one or several of the upstream reservoirs. As a result of the proposed contract, up to a total of 12,250 acre-feet would be removed from the reservoirs between April 1 and September 30, which equates to a maximum of 2,041 acre-feet per month. There would be no discernible change in water surface elevation as a result of these releases. The normal reservoir fluctuation and seasonal drawdown for flood control far exceed the changes caused by the Proposed Action. The Corps prepares for flood control operations by releasing stored water by autumn.

An increase in flow in the Willamette River would occur between the reservoirs providing the stored water and the PCWD diversion during the irrigation season. The increase in waterflow (up to 66.49 cfs if the total proposed water right is exercised) in the Willamette River would not significantly increase water surface elevations or velocities.

The contracted water would be diverted from the Willamette River using the existing PCWD diversion and would be transported via the PCWD canal to Palmer Creek where flows would be incrementally diverted by irrigation pump. According to PCWD, the system is adequate to handle the increased flow of 5.27 cfs for the additional primary water right, and no alterations to the pumps or the canal would be required in response to the proposed contract.

Flow levels in the irrigation canal that transports water to Palmer Creek would increase by up to the 5.27 cfs under the proposed contract. In the event of a drought year, the new contract would provide for irrigation water in the PCWD canal and Palmer Creek during what might otherwise be a dry period. This would decrease the chances that Palmer Creek would be drawn dry by water users in drought years.

Return flows to Yamhill River are inferred from observation of spill at the diversion dam 1 mile upstream from the Yamhill River confluence. PCWD personnel have observed fluctuations that correspond to irrigation applications that infer return flows ranging from 1 to 2 cfs during the irrigation season. The season average is approximately 1 cfs. The West Fork of Palmer Creek likely yields similar return flows, so the cumulative total return flow is approximately 2 cfs (Pers. Comm., Sam Sweeney, PWCD, Board Member, July 18, 2006). Return flows to Palmer Creek are used and reused by subsequent downstream diverters, which reduces their volume. The primary supply increase of 5.27 cfs to 421 acres, diverted and applied to crops, would result in an estimated 0.5 cfs increase to the return flow to Palmer Creek. Implementation of conservation measures could reduce return flows to the Palmer Creek watershed, offsetting the small increases from the proposed primary supply contract. The proposed supplemental

water supplies will not increase return flows to Palmer Creek because they will only be used to incrementally replace shortages of natural flow rights.

## 3.4. Water Quality

### 3.4.1. Affected Environment

The Willamette and Yamhill rivers are Water Quality Limited (WQL) streams. The 2002 Oregon Department of Environmental Quality (DEQ) 303(d) lists six water quality limited stream parameters for this area of the Willamette River: fecal coliforms, water temperature, iron, dissolved oxygen, mercury, and biological criteria. The Yamhill River (RM 0 to 11.2) has four parameters that appear on the 2002 303(d) list: water temperature, fecal coliforms, iron, and manganese. Palmer Creek is listed on the DEQ 303(d) list for high levels of chlorpyrifos, a widely used organophosphate insecticide. No additional pollution discharge is allowed into WQL streams. PCWD members are currently working with the DEQ and the Yamhill Water and Soil Conservation District to produce an Agricultural Water Quality Management Plan as part of the process under Senate Bill 1010. After the plan is finalized and circulated for public comment, it will be incorporated into the Oregon Administrative Rules. The Oregon Department of Agriculture will then use these rules to reduce nonpoint source pollution contributions to the Yamhill and Willamette rivers.

Existing water quality conditions on the Willamette River are generally fair or good near the diversion point at RM 73.5 (DEQ, 2004). The Willamette River typically has fast-moving currents in this area. The diversion, located in a backwater area off the main channel of the Willamette River, has a slow water current. The main channel substrate is composed of cobble and gravel. Substrate around the diversion consists of decayed organic matter, silt, and some sand.

### 3.4.2. Environmental Consequences

There is a strong potential for positive impacts on Palmer Creek from the supplemental water in this contract. Low to nonexistent flows in Palmer Creek degrade water quality in Palmer Creek and the Yamhill River. The 981.25 acre-feet of proposed primary supply would add up to 5.27 cfs to the base flow of Palmer Creek, an increase that would occur during low summer and fall flows. This seasonal addition would help maintain lower stream temperatures. The agricultural return flows will add an unknown amount of nutrients into Palmer Creek. The potential effects to Palmer Creek and the Yamhill River include: increased salinity, increased inorganic nutrient concentrations, increased water temperature, and decreased dissolved oxygen concentrations. The impacts expected for the Yamhill River are limited primarily to maintenance of flow levels. Since PCWD would use the proposed water contract only when natural flow is unavailable, the increased flow would most often occur during drought

years and would maintain Palmer Creek flows in an otherwise extremely low flow period.

Return flows to the Willamette River below the confluence with the Yamhill River are expected to increase the flow of the Willamette River by approximately 1 to 2 cfs and are expected to be similar in quality to the original diversion. There is minimal potential for negative impacts on Willamette River water quality. Impacts on Palmer Creek water quality are expected to be insignificant since the contracted water would be used in place of natural flows during years when natural flows are not available. The most significant anticipated change to current conditions is that contracted water would keep Palmer Creek wet when it might otherwise dry up.

## 3.5. Flood Plains and Wetlands

### 3.5.1. Affected Environment

The Project reservoir system is operated by the Corps according to release and refill schedules which support extensive wetland areas along the fringes of the reservoirs. The control of the water supply from the reservoirs for multiple needs minimizes large fluctuations along the flood plains downstream from the reservoirs. Annual spring and early summer high waters are generally predictable. The presence of wetlands along the 15 miles of Palmer Creek is varied. There are riparian wetlands directly adjacent to Palmer Creek, but wetlands do not occur next to the 3 miles of canal which carries diversion water to Palmer Creek. There are no identified wetlands on lands proposed for new irrigation development.

### 3.5.2. Environmental Consequences

Negative impacts of the Proposed Action on flood plains and wetlands are not anticipated. The removal of water from the Project would be minimal and would not lessen the acreage of flood plains or wetlands surrounding the reservoirs. The reservoirs' water surface levels cycle seasonally with average capacity reached in mid-June and drawdown levels reached in mid-January. The dramatic water surface level fluctuations caused by hydropower and fisheries enhancement would mask the loss of water delivered to PCWD. The contracted water constitutes an imperceptible amount compared to average and drawdown reservoir levels.

The maximum anticipated contract amount of 66.49 cfs released from storage to the Willamette River would be unnoticeable as far as the water surface level and velocity are concerned. The addition of the contract maximum for the primary water right (5.27 cfs) to the Willamette River would not have a beneficial or adverse impact on flood plains or wetlands. The increase of the water for the supplemental water right would only occur as needed when natural flows or other Reclamation contract flows are not available.

Increased flow in Palmer Creek would cause no change to flood plain or wetlands status. The increased flows for both the primary and supplemental water rights are below the existing natural flow conditions. The typically incised streambanks and riparian area would keep any increased flows in the stream channel. No wetlands would be drained. Presence of flow during low water years when flows would not occur or be very low in Palmer Creek may enhance existing riparian conditions.

A wetland determination was made for the irrigation intake where a fish protection screen would be installed. There are no wetlands located at the Willamette River intake where the fish screen would be installed.

Return flows to the Yamhill River are not measured. Since irrigation flows are efficiently used, the amount of additional water reaching the Yamhill River (estimated at 1 to 2 cfs) would not affect flood plains or wetlands there or below the confluence with the Willamette River.

## 3.6. Vegetation

### 3.6.1. Affected Environment

A review of plant communities of the Project area and the Palmer Creek drainage reveals that the Project area includes a diverse range of vegetative resources ranging from heavily forested areas around the reservoirs to sparsely vegetated areas in the cropland areas. Forested areas include such dominant species as western hemlock (*Tsuga heterophylla*), Douglas fir (*Pseudotsuga menziesii*), and western red cedar (*Thuja plicata*). Riparian vegetation typically consists of these species as well as Oregon ash (*Fraxinus latifolia*), cascara (*Rhamnus* spp.), red alder (*Alnus rubra*), and white dogwood (*Cornus nuttallii*).

Shrub cover is common along the riparian areas including Palmer Creek. It consists of red elderberry (*Sambucus arbosescens*), blackberry (*Rubus* spp.), salmonberry (*Rubus spectabilis*), and Scotch broom (*Cytisus scoparius*). Various sedges (*Carex* spp.), sword fern (*Pteridium* spp.), orchard grass (*Dactylis glomerata*), reed canary grass (*Phalaris arundinacea*), foxtail (*Setaria* spp.), nettle (*Urtica* spp.), thistle (*Circium* spp.), and various composite flowers also are present.

Vegetation on the approximately 45-degree slope at the irrigation intake on the Willamette River where the fish screen infrastructure would be installed consists of reed canary grass at the lower elevation near the Willamette River backwater and Himalayan blackberry and other upland species on the upper slope. The underlying substrate is soil and riprap fill for the intake.

Cropland adjacent to the irrigation canal and Palmer Creek is dominated during the irrigation season by annual monocultures of corn, beans, beets, broccoli, and other crops.

### 3.6.2. Environmental Consequences

The release of water from the Project would not affect the forested areas in the PCWD lands. Water levels would not be affected because of the small quantity of water (less than 1 percent of the 1,592,800 acre-feet of usable conservation space available for joint use) removed from multiple reservoirs in response to the contract.

The Proposed Action would provide continued agricultural production for cropland areas within the PCWD service area. No adverse impacts on nonagricultural vegetation along the PCWD canal, Palmer Creek, or the Yamhill River are anticipated as a result of the Proposed Action. The proposed contract likely would result in a beneficial impact on existing riparian habitat.

Minimal disturbance of vegetation would occur on the sloped riprapped area (70 feet by 10 feet) where the track infrastructure for the fish screen at the irrigation intake would be installed. This area has previously been disturbed by construction activities for installation of the intake structure. The area will not need to be cleared of vegetation or stripped of soils. Two 6- to 8-inch metal support pilings would be required to support the track infrastructure.

## 3.7. Fisheries

### 3.7.1. Affected Environment

This section discusses the fisheries resources and habitat that occur in the vicinity of the PCWD diversion on the Willamette River, Palmer Creek, and the lower Yamhill River.

The majority of the fish species found in the Willamette River near the PCWD diversion are resident species with the exception of fall and spring Chinook (*Oncorhynchus tshawytscha*) and winter and summer steelhead (*Oncorhynchus mykiss*), which are migratory species. Resident species include cutthroat trout (*Oncorhynchus clarki*), white sturgeon (*Acipenser transmontana*), yellow bullhead (*Ictalurus natalis*), brown bullhead (*Ictalurus nebulosus*), yellow perch (*Perca flavescens*), largemouth bass (*Micropterus salmoides*), pumpkinseed (*Lepomis gibbosus*), bluegill (*Lepomis macrochirus*), white crappie (*Pomoxis annularis*), black crappie (*Pomoxis nigromaculatus*), largescale sucker (*Catostomus macrocheilus*), common carp (*Cyprinus carpio*), chiselmouth (*Acrocheilus alutaceus*), northern pikeminnow (*Ptychocheilus oregonensis*), and redside shiner (*Richardsonius balteatus*) (Corps, 1981; ODFW, 1992). Fish presence in the backwater area near the intake has not been documented. During

irrigation season it is likely that fish presence is low because of shallow water conditions, silt substrate, minimal to no large woody debris, and warm water temperatures.

Fish species present in the lower Yamhill River include winter steelhead, coho salmon (*Oncorhynchus kisutch*), Pacific lamprey (*Lampetra tridentata*), cutthroat trout, largescale sucker, northern pikeminnow, largemouth bass, speckled dace (*Rhinichthys osculus*), riffle sculpin (*Cottus gulosus*), and American shad (*Alosa sapidissima*) (Corps, 1981).

Palmer Creek is a low gradient, meandering stream that experiences low flows and warm water temperatures during most of the year. Riparian conditions along the stream corridor are generally considered good. No sampling has been done in the Palmer Creek drainage to determine species composition or distribution. Species which may be present in the Palmer Creek area include: coho salmon, cutthroat trout, largemouth bass, crappie, sculpins (*Cottus* spp.), dace (*Rhinichthys* spp.), red side shiners, common carp, northern pikeminnow, and chiselmouth (Pers. Comm., Steve Mamoyac and Todd Alsbury, ODFW, District Fish Biologists, July 20, 2006). Cutthroat trout also may occur in some of the local streams which flow into Palmer Creek. However, low flow conditions, warm water temperatures, and the presence of low head irrigation dams and flash board diversions which hinder upstream migrations make the use of Palmer Creek by cutthroat trout and coho salmon unlikely.

### 3.7.2. Environmental Consequences

Fisheries resources in the area would not be adversely affected as a result of the Proposed Action. No alteration would occur to water quality, native vegetation, stream habitat types, or fish. The irrigation water intake located at the diversion point on the Willamette River would be screened to meet Oregon Department of Fish and Wildlife (ODFW) and NMFS criteria for fish protection prior to diversion of water. The ODFW, NMFS, and USFWS have each evaluated and approved the proposed fish protection screen (Appendix B). Fish protection screens have been installed at diversion points along the PCWD canal and Palmer Creek.

The Proposed Action would provide an additional 5.27 cfs to Palmer Creek, and up to 66.49 cfs during drought years, thus potentially improving habitat for fish populations and increasing fishing opportunities. The increased Palmer Creek flows during drought years would potentially improve water quality conditions which would increase the amount of habitat (rearing and forage) available to the fisheries resource and provide more suitable conditions for aquatic invertebrate production.

# 3.8. Wildlife

## 3.8.1. Affected Environment

This section discusses the wildlife resources and habitat in the Palmer Creek watershed, which consists of upland, riparian, and aquatic habitats supporting diverse wildlife populations. Wildlife species can be separated into nongame, upland, and waterfowl species.

The following nongame species are known to occur in the Palmer Creek drainage: beaver (*Castor canadensis*), river otter (*Lutra canadensis*), raccoon (*Procyon later*), red fox (*Vulpes vulpes*), stripped skunk (*Mephitis mephitis*), spotted skunk (*Spilogale putorisis*), silver gray squirrel (*Sciurus carolinensis*), red-tailed hawk (*Buteo jamaicensis*), turkey vultures (*Cathartes aura*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), and a variety of songbirds. These species are generally associated with aquatic and riparian habitats adjacent to fields.

Upland game species which are known to occur in the drainage include ring-necked pheasant (*Phasianus colchicus*), California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), and band-tailed pigeon (*Columba fasciata*). These species are generally found in fields adjacent to riparian areas or heavily vegetated fence lines and ditches. These habitats provide nesting and escape cover; however, the lands associated with PCWD typically do not have riparian areas or heavily vegetated fence lines and ditches, thus the use of these lands by upland game species is minimal.

Important breeding populations of mallard (*Anas platyrhynchos*) and wood ducks (*Aix sponsa*) are found in the middle Willamette Basin, of which the Palmer Creek drainage is a part. Wintering season waterfowl populations are predominantly mallard, wood duck, pintail (*Anas acuta*), American widgeon (*Anas americana*), and western Canada geese (*Branta canadensis*). Smaller numbers of gadwall (*Anas strepta*), northern shoveler (*Anas clypeata*), green-winged teal (*Anas creeca*), and ruddy ducks (*Oxyura jamaicensis*) also can be found. These species are generally found in aquatic and riparian habitats which provide nesting, escape cover, and forage areas.

## 3.8.2. Environmental Consequences

The Proposed Action would not adversely affect wildlife resources in the area. No alteration to native vegetation and habitat types would occur on the PCWD. As a result of the Proposed Action, PCWD members would be able to continue agricultural production of row crops during drought years, which would maintain existing forage opportunities for wildlife. Significant shifts in cropping practices, for example, conversion of pasture lands to row crops, are not anticipated at this time. An increase in Palmer Creek flow levels during drought years may improve

water quality conditions, which in turn would improve forage conditions for waterfowl and nongame species.

## 3.9. Threatened and Endangered Species

On July 17, 2006, PCWD requested a list of threatened, endangered, and candidate species occurring in Yamhill County. The USFWS provided its response including fish, wildlife, plants, and invertebrate species (Appendix B). Table B1 in Appendix B lists the species, additional habitat information, and conclusions about possible impacts and the likely presence of each species in the project area. Table 2 summarizes anticipated effects of the Proposed Action.

### 3.9.1. Affected Environment

The USFWS identified six species of plants that are protected as either threatened or endangered under the ESA (Appendix B, Table 1). Surveys have not been conducted for these species because no ground-disturbing activities will occur on the PCWD agricultural lands that are currently or proposed for a supply of

**Table 2. Summary Table – Effects of the Proposed Action on ESA listed species for PCWD**

| Common Name | Scientific Name | Federal Status | Effect Determination |
|---|---|---|---|
| Bradshaw's Lomatium | *Lomatium bradshawii* | Endangered | No Effect |
| Howellia | *Howellia aquatili* | Threatened | No Effect |
| Nelson's Checker-Mallow | *Sidalcea nelsoniana* | Threatened | No Effect |
| Golden Indian Paintbrush | *Castilleja levisecta* | Threatened | No Effect |
| Willamette Daisy | *Erigeron decumbens* var *decumbens* | Endangered | No Effect |
| Kincaid's Lupine | *Kincaidii sulphureus* var *kincaidii* | Threatened | No Effect |
| Chinook Salmon | *Oncorhynchus tshawytscha* | Threatened | No Effect |
| Steelhead | *Oncorhynchus mykiss* | Threatened | No Effect |
| Bald Eagle | *Haliaeetus leucocephalus* | Threatened | No Effect |
| Northern Spotted Owl | *Strix occidentalis caurina* | Threatened | No Effect |
| Marbled Murrelet | *Brachyramphus marmoratus* | Threatened | No Effect |
| Fenders Blue Butterfly | *Icaricia icarioides fenderi* | Endangered | No Effect |
| Oregon Silverspot Butterfly | *Speyeria zerene hippolyta* | Threatened | No Effect |

irrigation water. All lands are currently farmed with either supplemental or primary water rights, or are farmed without water rights. No new ground-disturbing activities would occur on the farm lands.

The District is implementing its own separate project to install a fish protection screen on the existing pump intake. Reclamation is not funding, authorizing, or constructing the fish screen. According to the PCWD, the fish screen project will have minimal disturbance in an area that is approximately 70 feet long and 10 feet wide from the low water to above the base of the concrete pump station. This area is on an approximately 45 degree slope that is part of the existing pump station. The underlying materials on the slope consist of soils and rock fill from the construction of the pump intake house. The lower slopes are dominated by reed canary grass and water parsley (*Oenanthe sarmentosa*). The upper slopes are vegetated with red alder, Himalayan blackberry (*Rubus discolor*), reed canary grass, bedstraw (*Gallium aparine*), horsetail (*Equisetum* sp.), Canadian thistle (*Cirsium arvense*), and wild lettuce (*Lactuca serriola*).

Upper Willamette River chinook (*Oncorhynchus tshawytscha*) and Upper Willamette River steelhead (*Oncorhynchus mykiss*) are listed as threatened Evolutionary Significant Units (ESUs) and migrate past PCWD's diversion on the Willamette River. Critical Habitat has been designated for both species. In addition, the Magnuson-Stevens Fishery Conservation and Management Act (MSA) designated Essential Fish Habitat (EFH) for chinook and coho salmon. Coho salmon are not considered native species in the Upper Willamette Basin and are not protected under ESA in this area. Some coho salmon do inhabit the Willamette River, and although not protected under ESA they are protected under MSA (See Addendum to this EA).

As mentioned previously, Palmer Creek was drawn dry during the irrigation season prior to the formation of PCWD. This practice eliminated fish species residing in the stream. Since the formation of PCWD, water has been present in the stream on a year-round basis. Incremental increases in flow above the PCWD point of diversion on the Willamette River as a result of the Proposed Action will have no effect on the listed species.

USFWS has identified the marbled murrelet (*Brachyramphus marmoratus*), northern spotted owl (*Strix occidentalis caurina*), and bald eagle (*Haliaeetus leucocephalus*) as federally listed threatened species, potentially occurring in the vicinity of the project. The habitat for marbled murrelet consists of large trees in older forests usually within 50 miles of the coast, and it forages in the marine environment (Csuti, et al., 2001). The location of the intake is approximately 45 miles from the coast adjacent to agricultural area that does not have old growth forest. It is unlikely that marbled murrelet is present in the vicinity (Pers. Comm., Devin Simmons, ODFW, Habitat Biologist, July 21, 2006).

Northern spotted owl prefers larger forest stands with multiple layers and a closed canopy with its breeding season in late March (Csuti, et al., 2001). According to Csuti (2001), northern spotted owl has been displaced from lower elevation forests through timber harvest. According to ODFW (Pers. Comm., Devin Simmons, ODFW, Habitat Biologist, July 21, 2006), northern spotted owl would not be expected to be present in the project area; however if northern spotted owl was observed it would be a juvenile acting on a dispersal behavior pattern. The location of the intake in an agricultural area that does not have old growth forests or large stands suggests that the northern spotted owl likely would not be present in the vicinity of the intake.

The closest bald eagle nest is over 1.5 miles south of the intake location. Bald eagles likely frequent the general vicinity of the project area as the eagle seeks prey species in and around the Willamette River.

Fender's blue butterfly appears to be confined to the Willamette Valley, including sites in Yamhill, Benton, Polk, and Lane counties in Oregon. The primary habitat for the butterfly is native wetland prairie (Federal Register, Vol. 65, January 25, 2000). Kincaid's lupine or other lupines appear to be the host plant for Fender's blue butterfly. Its primary larval food plant, Kincaid's lupine (listed as Threatened), occurs on a few small prairie remnants in the Willamette Valley. Fender's blue butterfly is endangered because native prairie habitat has been converted to agriculture, subject to fire suppression, invaded by non-native plants, or otherwise developed. Refugia from these forces of change are mostly limited to fence rows and intervening strips of land along agricultural fields and roadsides. Although a survey was not conducted for this species, it would not be expected to be present in the area of the intake where minimal ground-disturbing activities would occur in a 70-foot-long by 10-foot-wide area for installation of the track infrastructure for the fish screen. No construction activities are proposed for other areas.

The Oregon silverspot butterfly is found only in the salt spray meadows along areas of the Pacific Coast (Federal Register, Vol. 43, July 3, 1978). This species is not expected to be present in the vicinity of the proposed project. The project area is approximately 45 direct miles from the coast area and on the east side of the coast mountain range. Critical Habitat has been designated to include a portion of Lane County near the Pacific Coast (Federal Register, Vol. 45, July 2, 1980). The area for designation of Critical Habitat does not include the project area.

### 3.9.2. Environmental Consequences

The Proposed Action will have no effect on plant species protected under the ESA because the land is already farmed for commercial agriculture. The Proposed Action would not result in changes in land use or agricultural practices. Although no surveys were conducted for the plants protected under the ESA at the irrigation intake, none of the listed species would be expected to be found in the irrigation

intake area where minimal construction activities for installation of the track infrastructure for the fish screen are proposed by PCWD. The protected plant species are either upland prairie or wetland prairie species that likely would not be found along the dry steep slope where installation of the fish screen would occur (an area 70 feet long by 10 feet wide).

The Willamette River near the PCWD diversion is used by two threatened fish species. Their use is seasonal during up-river migration of adults and down-river passage by juveniles. Both species reside as juveniles during rearing in pools with consistent flow, aeration, refugia, and cool temperatures. The habitat at the PCWD point of diversion is a backwater, an unlikely place for juvenile salmonids, especially in the pumping season when temperatures are inhospitable to these species. The presence of juveniles of either listed species has not been established in Palmer Creek or the Willamette River near the PCWD diversion; however these species are likely present at least at the intake. The existing fish screen at the diversion on the Willamette River does not meet standards of ODFW, USFWS, and NMFS to protect fish. PCWD has completed design of an approved fish screen and ODFW, USFWS, and NMFS have provided approval (Appendix B). Installation of the new fish screen would minimize entrainment in the intake flows, and thus reduce present loss of fish.

No impacts on the marbled murrelet, northern spotted owl, or bald eagle are expected. No impacts are expected on marbled murrelet or northern spotted owl because the habitat for these species is not present in the vicinity of the intake. The bald eagle nest site is approximately 1.6 miles south of the work area for installation of the fish screen on an existing diversion. The work would occur during the late summer or fall period and consist of limited work for less than a week. A crane would be used to lift the fish screen into place. Because of the distance from the nest (1.6 miles), limited amount of work with low noise levels, and the late summer and fall installation outside of the nesting season for bald eagle, no impacts are expected to occur on bald eagle.

No impacts are expected to occur on Fender's blue butterfly because there is no native wet prairie located near the ground-disturbing activities at the intake. Kincaid's lupine, a host plant for the butterfly that is found primarily in native upland prairie (Federal Register, Vol. 65, January 25, 2000), would not be expected to occur on the steep slope of the irrigation intake location. In addition, ground-disturbing activities are limited to an approximately 70-foot-long by 10-foot-wide area at the intake located on an approximately 45 degree slope near a backwater of the Willamette River. Any impact on the butterfly at this small location likely would not occur.

No impacts are expected to occur to Oregon silverspot butterfly as a result of the proposed project. The butterfly's habitat is not present in the project area, and the project area is not included in the Critical Habitat designation.

## 3.10. Visual Resources

### 3.10.1. Affected Environment

The existing intake structure is on a backwater area of the Willamette River. The Palmer Creek riparian zone is still largely intact and provides scenic opportunities and wildlife observation opportunities for local residents.

### 3.10.2. Environmental Consequences

The only portion of the system expected to experience aesthetic impacts as a result of the Proposed Action is Palmer Creek. Visual resources along Palmer Creek could potentially be improved during drought years by the maintenance of water flow in the creek.

## 3.11. Recreation

### 3.11.1. Affected Environment

Recreational opportunities along the Willamette River, Palmer Creek, and the Yamhill River include both passive (i.e., wildlife observation) and active (i.e., hiking, fishing) opportunities; however there are few public access locations within PCWD. Palmer Creek currently supports a localized sport fishery for largemouth bass and crappie between the Carlton Nursery Dam and the confluence of Palmer Creek and the Yamhill River. Prior to the establishment of PCWD, Palmer Creek was drawn dry during the irrigation season, a practice which eliminated spring and summer sport fishery opportunities. Since the formation of PCWD, flow has been maintained in the stream on a year-round basis.

### 3.11.2. Environmental Consequences

The only portion of the described system where impacts on recreation are anticipated is in the Palmer Creek area. Impacts on the Willamette River are not anticipated as the proposed contract constitutes less than 1 percent of the mean monthly flow of the Willamette River during the irrigation season; hence the increased flows would not be noticeable.

The potential exists for increased flows and recreational opportunities in Palmer Creek as a result of the Proposed Action, especially during drought years. Impacts on the Yamhill River would depend upon the return flows from Palmer Creek; however, since the contracted water would be used primarily during

drought years, no change is anticipated in recreational opportunities for the Yamhill River.

## 3.12. Land Use

### 3.12.1. Affected Environment

The northwestern and southwestern regions of Yamhill County are dominated by the Commercial Forestry District and the majority of the remaining areas in the eastern portions of the county are designated as Agriculture/Forestry Large Holding District (AFLHD) on the Yamhill County Comprehensive Plan map. The properties located in the PCWD service area are within the AFLHD, but most of the area is classified as Exclusive Farm Use.

The majority of the area within PCWD is used for agricultural activities, including nursery stock production and row crop production, such as corn, beans, beets, broccoli, and other crops. There is a small fraction of land in this area that is designated as very low density residential, and other plan designations are on the comprehensive plan map. The land use code limits or prohibits the latter type of development in the exclusive farm district in an effort to maximize the potential agricultural productivity.

### 3.12.2. Environmental Consequences

Land-use designations would not change as a result of the proposed project since the proposed supplemental water supply to 4,522.45 acres would be used on previously farmed lands, and the proposed primary water supply to 421.17 acres would be used on lands which were previously dryland farmed or received water from other sources. The additional irrigation water supply would provide a source of water during low water years when Palmer Creek is typically drawn dry. This water availability would allow the production of agricultural commodities to continue, as has been the practice since the mid 1800s. No impact on undeveloped land within the PCWD service area would occur as the result of the Proposed Action.

## 3.13. Historic and Cultural Resources

### 3.13.1. Affected Environment

No ground-disturbing activities would occur, except for installation of the track infrastructure for the fish screen at the existing intake on the backwater of the Willamette River. The intake area was extensively disturbed and backfilled with soil and riprap in the mid-1960s when the intake structure and pump house were constructed on an approximately 45 degree slope that extends to the backwater area of the Willamette River.

### 3.13.2. Environmental Consequences

The Proposed Action would have no effect on cultural and historic resources, since no alterations would be made to the existing conveyance system and no new lands (the 421.17 acres of lands proposed for a primary water right are already farmed) would be brought into production as a result of this proposal. The Oregon State Historic Preservation Office (SHPO) was contacted about the potential impacts on archeological and cultural sites at the previously disturbed construction area at the intake to determine if additional analysis should be conducted prior to installation of the new fish screen. SHPO concurred that installation of the fish screen would not require further review (Appendix C).

## 3.14. Indian Sacred Sites

### 3.14.1. Affected Environment

Executive Order (EO) 13007 defines an Indian sacred site as "any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion." None of the lands affected by the Proposed Action are Federal fee lands or lands where Federal easements or other realty interests pertain. There is no corollary statute in State codes pertaining to Indian sacred sites on non-Federal lands.

### 3.14.2. Environmental Consequences

No impacts would occur under EO 13007 because that authority does not extend to non-Federal lands.

## 3.15. Indian Trust Assets

### 3.15.1. Affected Environment

Indian Trust Assets (ITAs) are legal interests in property held in trust by the United States for Indian tribes or individuals, or property that the United States is otherwise charged by law to protect. Examples of resources that could be ITAs are lands, minerals, hunting and fishing rights, water rights, and streamflows. The Bureau of Indian Affairs (BIA) was contacted (Pers. Comm., Greg Norton, BIA, Realty Officer, Siletz Agency, September 26, 2006) regarding potential ITAs. According to Mr. Norton, there are no known land, mineral, hunting, fishing, or other Indian rights in the project area.

### 3.15.2. Environmental Consequences

No ITAs have been identified in the Project area, therefore, none will be affected by either the No Action Alternative or the Proposed Action.

# 3.16. Environmental Justice

### 3.16.1. Affected Environment

The Presidential EO 12898, "Federal Actions to Address Environmental Justice in Minority Populations" (February 11, 1994) requires agencies to identify disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations, as well as the equity of the distribution of the benefits and risks of their decisions. The EO is intended to protect minority and low-income communities from discriminatory projects or practices that can result in a more hazardous or degraded environment cause by a Federal action. Federal agencies are directed to analyze the effects of Federal actions on minority and low-income communities and to avoid those impacts to the extent that is practicable.

### 3.16.2. Environmental Consequences

Reclamation did not identify any minority and low-income populations as being affected by this proposal. There would not be any modifications to present land use practices or removal of any housing projects. No impacts have been identified by the decision to implement either the No Action Alternative or the Proposed Action.

# 3.17. Cumulative Impacts

Cumulative impacts were evaluated by determining if there are other proposed or ongoing activities that could result in incremental impacts on various resources that could be affected by the Proposed Action. The potential for impacts has been considered by evaluating changes in reservoir operating schedules by the Corps, the water marketing program of Reclamation, and water rights applications OWRD has received.

Flow Releases from the Willamette River Reservoir System by Corps
The project releases are normally operated from a rule curve which determines how much space must be maintained to capture floodwater. Corps does not anticipate changes in flow releases other than the month-to-month or year-to-year fluctuations that occur because of a difference of inflows to the reservoirs or to meet target flows. Flood abatement acts as a ceiling to Corps releases.

It is possible that reauthorization of the projects or demands for endangered species could change Corps operations. It is extremely unlikely that the proposed contract, taken alone or in concert with other pending water supply contracts, could interfere with the Corps's primary commitments. This is true because the volume of water contracted for agriculture is relatively small, and releases would occur at times beneficial

to water quality improvement. Furthermore, water supply service contracts will defer in times of shortage to overriding Federal interests.

Water Marketing Program of Reclamation
Currently there are approximately 1,592,800 acre-feet of conservation storage space available for multiple use, which includes irrigation contracting in the Project system. Of this use, approximately 50,230 acre-feet of water has already been contracted, and there are 61 other pending applications for the use of up to a total additional 30,197 acre-feet of water.

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OWRD was contacted to ascertain the status of new applications for diversion and storage of water from the Willamette River and tributaries. Additional water downstream of Salem, Oregon, generally is not available during irrigation season due to previous over-appropriations of water. OWRD's current practice is to refer potential applicants for Willamette River natural flow to Reclamation for water service supply contracts from the Project.

No significant cumulative impacts have been identified because the volume of water that may be contracted if all the pending applications to Reclamation are permitted represents less than 2 percent of the reservoir storage space available for joint use. Furthermore, the applications at OWRD are for natural flow from the Willamette River or tributaries rather than for reservoir system storage. The OWRD may or may not approve additional applications for natural flow at its discretion based on available water. No other private projects have been identified that may, in combination with the Proposed Action, result in incremental impacts on any resources resulting in a significant cumulative impact.

# CHAPTER 4. - Consultation and Coordination

## 4.1. Agencies and Persons Consulted

The following agencies were consulted in the preparation of this EA:

National Marine Fisheries Service
Oregon Department of Fish and Wildlife
Oregon Natural Heritage Program
Oregon State Historic Preservation Office
Oregon Water Resources Department
U.S. Fish and Wildlife Service
Bureau of Indian Affairs

## 4.2. Distribution List

This Draft EA was mailed to the persons and agencies on the distribution list (Appendix D).

# CHAPTER 5. - Literature Cited

Corps. 1981. Willamette River Projects. Hydrologic and Temperature Effects, Preliminary Literature Review and Data Analysis. U.S. Army Corps of Engineers, Portland District, Portland, Oregon.

Csuti, B, T. A. O'Neil, M. M. Shaughnessy, E. P. Gaines, and J. C. Hak. 2001. Atlas of Oregon Wildlife. Distribution, Habitat, and Natural History. Oregon State University Press, Corvallis, Oregon.

DEQ. 2004. Willamette River Initiative: Action Assessment and identification of Opportunities for Action. Memorandum from Stephanie Hallock, Director, DEQ, to Jim Brown, Governor's Natural Resources Director. June 1, 2004.

ODFW. 1992. Coast Range Subbasin Fish Management Plan. Oregon Department of Fish and Wildlife, Portland, Oregon.

# Appendix A

## Comments from Original EA

# United States Department of the Interior

BUREAU OF RECLAMATION
Lower Columbia Area Office
1503 NE 78th Street, Suite 15
Vancouver, Washington 98665-9667

IN REPLY REFER TO:
PN-6518
ENV-6.00

JAN 1 1 1996

**Subject: Public Comment Sought on Draft Environmental Assessment for Proposed Water Service Contract for the Palmer Creek Water District Improvement Company, Willamette River Basin Project, Oregon**

Ladies and Gentlemen:

The Bureau of Reclamation is proposing to enter into a water service contract with Palmer Creek Water District Improvement Company for 12,937 acre-feet of irrigation water to be delivered from the Willamette Basin Reservoir System. The contracted water would be used to provide a primary water supply to 228 acres of irrigable lands and a supplemental water supply to 4,947 acres of land.

Lands proposed to receive water under the water service contract would receive water through an existing distribution system. The water supply would come from water diverted from the Willamette River where it is pumped to a canal which conveys it to Palmer Creek. Palmer Creek flows north for 15 miles to the city of Dayton, Oregon.

There are 11 reservoirs on the Willamette Basin Project which store water for irrigation. The proposed action is authorized under provisions of the Reclamation Act of June 17, 1902 (32 Stat. 388), Section 8 of the Flood Control Act of December 22, 1944 (58 Stat. 887, 891), and acts amendatory Although the proposed action is statutorily authorized, Reclamation must first analyze the environmental impacts of the proposed action in compliance with the National Environmental Policy Act (NEPA) before a water service contract can be considered. The enclosed draft environmental assessment (EA) describes the proposed water service contract and provides an analysis of the potential environmental effects of the project.

We would appreciate your assistance in reviewing the draft EA and identifying any resource issues and potential environmental effects that could result from issuance of the proposed water service contract. Additional information or suggestions on alternative actions to the project are also solicited and will be considered prior to our final decision.

Your written comments should be submitted to the above address, Attention: PN-6518, by February 13, 1995. If you have questions, please contact Ms. Jill Lawrence at (208) 378-5035. Thank you for your assistance.

Sincerely,

Eric Glover
Acting Area Manager
Lower Columbia Area Office

Enclosure

Oregon
John A. Kitzhaber, M.D., Governor

Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97204-1390
(503) 229-5696
TDD (503) 229-6993

December 24, 1998

Mr. Eric Glover
Area Manager
Lower Columbia Area Office
825 N. E. Multnomah Street, Suite 1110
Portland, OR 97232-2135

Re: Draft Environmental Assessment for the Proposed Palmer Creek Water Service Contract

Dear Mr. Glover:

DEQ reviewed your draft environmental assessment, dated January 1996, for the proposed water service contract for Palmer Creek Water District (PCWD). Our comments were provided in my letter to you of February 12, 1996. Since then, I understand that PCWD has revised the draft environmental assessment to clarify the amount of new flow proposed for the contract.

Mr. Richard Craven contacted me on November 25, 1998, to discuss the proposed project, our comments on the draft, and to clarify the nature of, and amount of flows that will be requested from storage. It is my understanding that the environmental assessment has been revised to clarify the contract request and that you wish to prepare a Finding of No Significant Impact at this time.

Based on clarifications received at the meeting with Mr. Craven, I understand the project as follows:

> The PCWD presently has water rights for natural flows from the Willamette River and contracts with the Bureau of Reclamation for stored flows. Table 1from the environmental assessment has been revised to document these water rights.
>
> The PCWD desires to purchase additional water by contract with the Bureau of Reclamation for the purpose of assuring the availability of water to the PCWD during periods when natural flows already under permit may not be available. The permit application numbers and amount of water proposed for purchase are shown in Table 1.

DEQ-1

The environmental assessment addresses impacts from purchase of stored water in a Corps of Engineers reservoir where water is stored and allocated for this purpose.

Additional natural stream flows in the Willamette River would not be purchased, nor would they be diverted by the contract.

The contract for stored flows would be up to 64.68 cfs. Of the 64.68 cfs, only 2.5 cfs would be for a primary right; the remaining 62.18 cfs would be for supplemental rights.

The stored flows that would supply 2.5 cfs would be a primary right to irrigate 228.19 acres of land.

The stored flows that would supply up to 62.18 cfs would be a supplemental supply and would not be used in addition to present water rights unless present sources do not supply the presently permitted amounts. In other words, as the presently permitted natural and stored flows decrease, the new contract would allow additional flows to make-up the shortfall to provide irrigation water to land already presently irrigated.

The net change in present flows to the PCWD would be an additional 2.5 cfs for the primary right. The environmental assessment primarily addresses the additional 2.5 cfs. The net change in flow would not measurably adversely impact any water quality conditions.

The supplemental flow of up to 62.18 cfs would be used to offset natural flows that would not be available during dry water years or if more senior water rights had priority. The availability of contracted stored flows during dry water years to provide water in wetlands and riparian areas associated with the irrigation system would be beneficial to natural resources.

I believe that our concerns have been addressed in the clarification discussion and the revised draft environmental assessment. Based on the clarifications and my understanding, please regard this letter as DEQ's final comments on the project. We have no objections to the Bureau preparing a Finding of No Significant Impact for the project.

Sincerely,

Russell Harding, Manager,
Watershed-Basin Section
Water Quality Division

**Table 1.--Present Water Rights for Natural, Contract, and Proposed Contract Flows**

| Source | Permit No. | Priority | Acres | Acre-Feet | Rate (cfs) |
|---|---|---|---|---|---|
| 1.0 **Natural flow** from ~~Palmer Creek~~ Willamette River | 32243 | 1967 | 3265.2 | 8163 | 40.82 |
| | 34436 | 1969 | 288.7 | 721.75 | 3.61 |
| | 36216 | 1971 | 53.6 | 134 | 0.67 |
| | 39385 | 1975 | 219.6 | 549 | 2.75 |
| | 41499 | 1977 | 103.3 | 258.25 | 1.29 |
| | 42316 | 1977 | 60 | 150 | 0.75 |
| | 43380 | 1978 | 234.2 | 585.5 | 2.92 |
| | 44954 | 1980 | 294.9 | 737.25 | 3.69 |
| | 47405 | 1981 | 262.39 | 655.98 | 16.87 |
| | 50945 | 1987 | 397.2 | 993 | 4.97 |
| | A-70736 | 1990 | 439.6 | 1099 | 5.5 |
| | A-71731 | 1991 | 100.45 | 251.1 | 1.26 |
| Total | | | 5719.14 | 14297.85 | 85.42 |
| 2.0 **Existing Storage** Contract with Reclamation for Supplemental Water Supply | 43379 | 1977 | ~~591.2~~ | 591.2 | ~~7.39~~ |
| *3.0 Proposed Contract with Reclamation* | *A-70109-10, 70736, 71731 72555, 72668* | | | | 2.5 |
| *Primary Supply* | | | *228.19* | *570.48* | 62.18 |
| *Supplemental* | | | *4946.45* | *12,366.13* | *64.68* |
| *TOTAL* | | | *5174.64* | *12,936.6* | |

Oregon

DEPARTMENT OF ENVIRONMENTAL QUALITY

February 12, 1996

Eric Glover
Acting Area Manager
Lower Columbia Area Office
Bureau of Reclamation
1503 NE 78th Avenue, Suite 15
Vancouver, Washington 98665-9667

Re: Draft Environmental Assessment for the Proposed Palmer Creek Water Service Contract

Dear Mr Glover:

Thank you for the opportunity to review the Draft Environmental Assessment for the proposed Water Service Contract for the Palmer Creek Water District (PCWD). It is our understanding that the contract would be used to provide a primary water supply to 228 acres of irrigable lands and supplemental water to 4,947 acres. The proposal would divert an additional 12,936 AF of water as an "insurance policy".

Water is currently diverted (591 AF of stored water) from the Willamette River at river mile 73.5 and delivered through an existing 3 mile dirt canal distribution system to Palmer Creek. Palmer Creek flows north for 15 miles were it then flows into the Yamhill River at river mile 5 near Dayton.

Purpose and Need

The DEA states that irrigation water is scarce in the area due to limited surface water and groundwater resources. This statement is not substantiated with any data. The DEA states that due to the number of senior water rights in the area and the need to maintain minimum flows in the Willamette River it is possible that PCWD may be unable to use its existing water right for natural flows during water short years (every fifth year). This appears to be an estimate and is not supported with information. There is no data showing PCWDs irrigated acreage, historic water use, current or anticipated needs. No data is included showing that PCWD actually needs additional water much less 12,936.6 AF.

Other Related Actions and Activities

This section has several serious flaws and omits relevant actions in progress that would be critical to water appropriations of this size.

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| | |
|---|---|
| To Eric Glover | From Lori Faist |
| Co. | Co. DEQ WQ S/A |
| Dept. Phone 2065768858 | Phone # |
| Fax # 206 731 0114 | Fax # |

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DEQ-1

Federal Clean Water Act

For example the Oregon Department of Environmental Quality (DEQ) under the Clean Water Act is responsible for listing Water Quality Limited Streams (WQL) and establishing Total Maximum Daily Loads (TMDL)

WQL is defined any waterbody that does meet federal water quality standards - even after the best available technology is applied to discharges. In other words, a WQL stream is over it's carrying capacity due to existing cumulative effects from both nonpoint source and point source pollution.

The DEA does not note that both the Willamette and Yamhill basins have existing water quality problems. Out of date water quality data is used. The draft 1996 303D list is for Oregon is attached.

The Willamette River is Water Quality Limited (WQL) under the Federal Clean Water Act for dioxin. The Willamette in the vicinity of Dayton is also on the proposed WQL list (to be adopted in April 1996) for algae, fecal coliform, temperature, biological criteria (skeletal deformities in fish), and toxics (in tissue and the water column - 2,3,7,8-TCDD). The Yamhill basin is listed as Water Quality Limited under the Federal Clean Water Act for algae, fecal coliform, pH, phosphorus, and temperature.

EPA and DEQ are currently under a court order to identify and clean up WQL basins. Once a basin is declared WQL DEQ cannot allow additional permits or actions that would affect WQL streams exacerbating the known problems.

Minimal Stream Conversions in the Willamette Basin

The DEA fails to address or note the conversion of minimal stream flows in the Willamette Basin (mainstem and tributaries) which have not been converted to instream water rights, these pending instream water rights date from the 1960's. Unconverted minimum perennial stream flows exist on the mainstem above and below the proposed point of diversion. The minimum flows are critical to the health of the river - to provide dilution of the existing pollution load from point and nonpoint sources in the tributaries and mainstem. The proposed action would prejudice the conversions of minimum flows and exacerbate the existing water quality problems.

Reauthorization Study

The Bureau of Reclamation is currently issuing contracts based on a 1969 study making allocations until the COE/WRD feasibility study of the Willamette Basin is done.

The DEA notes that in 1989 COE did a Reconnaissance Study of the Willamette Basin looking at alternative operational scenarios to provide increased flows for beneficial uses, earlier filling and later drawdown rates of reservoirs, changing drawdown priorities and associated storage changes. Please note that this resulted in COE, the State of Oregon and numerous Oregon municipalities cooperatively funding a full scale feasibility study. The feasibility study will determine if modifying the operation and storage allocations of the existing COE reservoirs in the Willamette Basin would better serve current and anticipated future water resource needs of all users.

Other Water Right Applications

There are also numerous existing outstanding water right applications pending with the Bureau which are not mentioned except briefly in another section. Irrigators and municipalities are seeking to reserve approximately 550,000 AF in the existing basins. The DEA fails to identify and address these additional contracts which are directly related to the proposed action.

The DEA proposal would limit options being reviewed under the Reauthorization study by committing 12, 936.6 AF of the conservation storage space. DEQ does not believe that the proposed contract or any other contracts should be issued until the Reauthorization study is done. This contract would in essence circumnavigate Bureau of Reclamation's stated goal of managing water for the benefit of the public, which includes all users, not just irrigators.

Alternatives Discussion:

Issuance of any contract at this time, in particular with PCW, would circumnavigate the intent and purpose of the Reauthorization study. At this time the Willamette Basin is the only basin left in the state that does not have minimum flow water rights (priority dates from 1960's) that have been converted by WRD for beneficial uses. It is very likely that to meet the minimum flows for beneficial uses stored water will need to be contracted by the state. Until the Feasibility study and Willamette conversions are done no additional water from the Willamette should be contracted due to water quality impacts.

The water quality impacts from allocation of this water to PCWD are not discussed in light of the lack of minimum flow

conversions or the feasibility study. Removal of additional water will exacerbate the existing poor water quality of both the Willamette and the Yamhill Rivers.

The DEA states that no new diversions or irrigation ditches would be needed and no new land leveling activities because the canal would be capable of conveying the additional water. This is unlikely, higher flows would necessitate changes in diversions and the higher flows would increase erosion, requiring action (new 401 permits and DEQ water quality certifications).

PCWD notes that it would use the technical resources from OWRD and Reclamation to develop and implement a Water Conservation Plan and Schedule as a condition of the proposed contract. Yet under the "Conservation Alternative" this alternative is not actually evaluated or considered.

The DEA states that the PCWD is operating at an efficiency of only 50 to 70% yet no data is offered to validate this. Then the DEA notes that the operating efficiency as being within common industry practices. This is important since the PCWD is located in a WQL basin. What are common industry practices? Next the DEA states that the costs associated with conservation measures are expected to be prohibitive; this again is not documented. What is this based on? How much water could be saved if measures are taken? What would the effect be on water quality? What are the costs?

To address existing water quality concerns a lined canal would at least stop the existing contamination of local groundwater resources by surface water uses (page 2-2 notes that there is potential for interference with surface water). At a minimum conservation must be implemented by all water users as growth occurs in the Willamette Valley over the next decade. This is particularly important in those basins listed as WQL.

In short conservation options need to be fully developed and documented. By presenting only one contract option the DEA ignores the alternatives. An obvious alternative is a short term contract pending until the results of the Reauthorization study.

Affected Environment

The existing conditions "will provide the baseline from which effects of PCWD proposed action on the environment can be measured". Yet in most instances little actual baseline data is presented. The impacts are not evaluated in terms of effects to other users and proposed projects.

Hydrology

No hydrology data is presented other than flow data for surface water being diverted. What about effects to groundwater? Increased flow for the diversion could alter erosion patterns on the main stem impacting other users. What about potential impacts on existing permittee with mixing zones? Increased bed sediment transportation? The DEA states no measurable effect would occur but this is not backed up with any real data (which is the purpose of the Feasibility study and modeling). Please detail the impacts to the Yamhill river which will have "significantly" lower return flows. Might this impact other beneficial uses and water rights holders? No mitigation measures are offered.

Water Quality

The existing conditions fail to note that the Willamette and Yamhill are WQL/TMDL streams. It is noted that return water has elevated nutrient and fecal coliform levels. Please document the differences in the quality of the existing return flow to the Yamhill River. DEQ data is cited from 1987, please use the available data from 1994 and draft 1996 303D list which is much more accurate and applicable to the existing baseline.

Under the Clean Water Act DEQ is required to identify streams that are water quality limited. Once identified as WQL local basin water users are required to develop Water quality management plans (see SB1010). Water quality management plans in Oregon for non point source pollution are to be developed by the Oregon Department of Agriculture in tangent with NRCS. What actions has the PCWD taken to reduce their existing contribution to the non point pollution in the Yamhill basin? No additional discharges are allowed for the parameters listed as long as the river is listed as WQL. All water users in the Yamhill basin are considered to be part of the problem in the basin.

The DEA does not provide DEQ with adequate data (ie. monitoring for listed problems) to prove that no impact will occur from additional discharges by the applicant. The report does not establish what the existing baseline (ie. nutrient delivery) is, therefore the effects are not known. While increased flows might help to dilute the water quality problems, continuing over use without conservation only adds to the problem. Until minimum flows for this subbasin are converted to instream water rights any additional loss of water from the mainstem or to the Yamhill will exacerbate the existing problems to other beneficial uses.

Increased flow alone will not help with water temperature problems, rather it can best be lowered by replacing the riparian habitat buffer, fencing off livestock and planting trees.

The DEA states that it is possible that nutrient loads from return flows to Palmer Creek may increase and negatively impact the Yamhill. What would be the impact be to groundwater and surface water or other users? How would the PCWD mitigate this? PCWD offers to monitor the quality of Palmer Creek water near the confluence with the Yamhill to determine the increased nutrient loading. However, PCWD would be investigating pollution reduction only after impacting other users, leaving PWCD open to lawsuits. It is upon the applicant to first prove that they will have no impact to other users.

It is commendable that water quality would be address further in the water conservation plan, but this has yet to be developed and submitted to DEQ for review and approval. PCWD offers to maintain existing erosion control structures and to apply erosion control to future construction - this is already required as part of their existing permits and would be required for any new state permits. To prevent and control erosion associated with the canal it should be either lined or have a riparian buffer of 25 feet for erosion control. Wetlands could be replaced and enhanced to filter pollutants.

Currently by taking water from the Willamette into the Yamhill PCWD is risking the chance that dioxins and other toxics are being introduced into crops and groundwater (local drinking water) and polluting the Yamhill.

What about changes in types of crops? Wouldn't this change the types of chemicals used and farm practices? Why would the contract water only be used during drought years? Changes in water use might increase nutrient loads and further impair water quality this would be a significant impact that must be addressed. As the Willamette and Yamhill basins do not meet existing standards and it could be worse if the reservoirs do not release water to meet minimum flows.

Flooding and Wetlands

The existing reservoirs are noted to support extensive wetlands. Wetlands are valued as flood catchment areas and as filters for water quality. This is not addressed. What percentage of the original wetlands on Palmer Creek still exist and are functional? What percent are now farmed? Is this related to the decline in the water quality? How would the additional use of the irrigation water affect existing and downstream wetlands? Have the wetlands been delineated following DSL wetland identification? Until this is answered this subject has not been

adequately addressed and is not documented.

The DEA states that no impact to floodplains is anticipated. It further states that floodplains along rivers do not change as dramatically as they do in the reservoirs. This is not accurate, the Willamette floodplain has been extensively manipulated by human activities, which with growth, has acted to raise the flooding level over time. To what elevation did it flood in February 1996? If the PCWD diversion had been breached, allowing flood water to flowing into the canal would the flood levels and impacts have been greater? Include increased economic loss as a factor.

Since the return flows to the Yamhill are not documented the impacts are unknown and must be determined through data collection before stating that they would not be significant.

Vegetation

No data is offered on existing riparian vegetation. Is there a riparian buffer to filter return water from irrigation or is the land current farmed down to the waters edge? Is there tree cover to shade the waterway? How would this effect downstream users and water quality? Please provide more information about the enhancement of riparian areas and the existence of the retention facility on the Stoller property. Document why riparian conditions are considered to be good (page 3-14)? Increased flows would likely increase bank erosion, removing existing vegetation and requiring the use of riprap. This is not noted.

Fisheries

The DEA identifies a variety of local resources (fall and spring) chinook, cutthroat trout, sturgeon, perch, bass, and others in the Willamette. There are winter steelhead, coho, cutthroat trout also in the Yamhill. ODFW information finds that most of these are likely to have been present in Palmer Creek historically.

Palmer Creek currently supports a localized sport fishery of large mouthed bass and crappie. Prior to the establishment of PCWD the creek was dried up during the irrigation season, eliminating the sport fishery. PCWD has maintained the stream's water flow year round. What effects would changes to the water quality and flow have on the various fisheries?

The water intake at the diversion point is screened to avoid fish entrapment as are the 40 other diversions located along the canal and creek. The DEA states that low flow conditions, water temperature, presence of low head irrigation dams and flash board diversions hinder upstream fish migration of coho and cutthroat

so it is unlikely that this use exists now. The data thus presented shows it is likely that the local fishery (beneficial use) has been impacted by human alteration. This is a significant adverse impact.

Increased flow would dilute the existing pollution and potentially improving habitat and fishing opportunities. Yet the increased flow could also erode the habitat which is not identified.

Several of the fish species that are noted to exist in the Yamhill and Willamette are canidates to be listed as threatened and endangered, which needs to be addressed.

Wildlife

Page 3-16 notes that PCWD lands do not have heavily vegetated riparian areas. This is in conflict with statements made earlier. Higher flow would likely flood out and change the nesting areas of the documented upland game species and waterfowl. This impact is not addressed nor are the impacts of changes in water quality on the wildlife. What species are missing due to existing pollution problems? How would this change with more water?

The DEA says no crop changes will occur due to the additional water use. How would a crop shift affect the riparian fringe, water quality, wildlife and fishery?

The DEA documents degradation of the wildlife habitat due to illegal dumping of wastes from bridges and offers to monitor and clean up such actions which is commendable, but could be expensive.

Other Beneficial Uses

The remaining discussions of other beneficial uses are also inadequate and need better documentation. Correlations must be dealt with linking back to changes in flow, water quality and likely impacts. By taking water from the Willamette what impacts will occur to downstream users and other beneficial uses? This is not addressed.

Cumulative Impacts

Only three proposed or ongoing activities are identified. The DEA hardly addresses those listed not to mention those missing as noted in this review. All potential cumulative effects must be addressed and documented before this contract is implemented. The Reauthorization study will be evaluating these issues in detail, and could provide answers to assist in this evaluation.

DEQ cannot support this proposed action due to potential water quality impacts to minimum flows, the reauthorization study and other beneficial uses that must be protected. Thank you for the opportunity to outline our concerns. Attached please find a copy of the proposed 1996 303D list of Water Quality Limited waters for Oregon.

Sincerely,

Russell Harding
Manager, Standards and Assessments
Water Quality Division

BP:burecl.1

cc:
Joni Lowe, LOC
Reed Benson, Waterwatch
Dwight French, WRD

WaterWatch
RIVERS NEED WATER

February 12, 1996

Eric Glover
Acting Area Manager, LCAO
1503 NE 78th Street, Suite 15
Vancouver, WA 98665

VIA TELECOPIER AND REGULAR MAIL

Re: comments on proposed contract for Palmer Creek Water District

Dear Eric:

WaterWatch of Oregon is a nonprofit environmental group that works at the state and federal levels to restore and protect streamflows on rivers throughout Oregon. We have reviewed the Draft Environmental Assessment (DEA) on the proposed water service contract for Palmer Creek Water District Improvement Company (PCWD), and offer the following comments.

The proposed contract

We believe the proposed contract should not be issued at this time. The Corps of Engineers, the State of Oregon and many Northwest Oregon municipalities are currently spending hundreds of thousands of dollars on a study of the Willamette River Basin Project. This study will identify and analyze options for a reauthorization of the project, so that it can better support a full range of public uses in the Willamette Basin. The reauthorization study is extremely important, particularly since it involves several issues which have been front-page news in Oregon over the past several months: flood control, salmon/steelhead survival, and Portland municipal water supply, to name a few.

This contract jumps the gun on the reauthorization study. It narrows the options by committing almost 13,000 AF of the conservation storage space. While the action may be authorized by existing federal laws and state water rights, it is not good public policy. It simply does not fit with Reclamation's stated goal of managing water for the benefit of the public, not simply irrigation.

No contract should be issued until the reauthorization study is completed. *At a minimum, the proposed water service contract should terminate after four years, so that Reclamation can revisit this matter after the reauthorization study is completed.*

The Draft Environmental Assessment

The DEA is seriously inadequate. Crucial data are missing or insufficient. The alternatives considered are far too narrow. The water quality section is badly flawed. And the cumulative impacts discussion omits major factors. A supplemental EA should be issued which corrects these flaws.

Crucial data are missing or insufficient.

The proposed action is based on PCWD's request for up to 12,936.6 AF of stored water. However, the DEA provides no hard facts showing that PCWD actually needs that much water. The only information supporting a need for *any* additional water is a personal communication with Sam Sweeney of PCWD. There are no data showing PCWD's actual irrigated acreage, historic water use, or current or anticipated water demands. There are no data on the adequacy or reliability of existing supply–only an unsupported statement about senior water rights and a guess by Sweeney that the supplemental supply would be needed once every five years. In fact, the DEA can only conclude that "it is feasible that PCWD may be unable to use its existing water rights for natural flows during water-

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short years" (pp. 2-1, 2-2). In other words, it isn't at all clear that PCWD really needs water, or if it does, how much it needs.

The same is true regarding irrigation efficiency and the prospects for water conservation. The only information showing PCWD's current water use efficiency is an estimate by Sweeney that it is around 50-70 percent. This appears to be a "ballpark figure," and nothing shows what the broad range of 50-70 percent is based on, but the DEA accepts it uncritically. The DEA then states that PCWD's estimated efficiency is "within common industry practices," but again there are no facts to support that assertion. Finally, the DEA states that the cost associated with water conservation measures "is expected to be prohibitive" (p. 2-4). What is this cost? Who expects it to be prohibitive? Based on what? How much water might be saved if these measures were implemented? The DEA doesn't say.

Finally, the DEA uses outdated water quality information. The Oregon Department of Environmental Quality recently issued a draft 303(d) report, which provides more recent and complete water quality data for the Willamette and Yamhill Rivers.

**The alternatives considered are too narrow.**

The DEA really considers only two alternatives: no action, and a PCWD water service contract for up to 12,936.6 AF of unspecified but presumably long duration. The DEA lists four other alternatives, including water conservation, as having been considered but eliminated from further consideration.

The conservation option needs further consideration. As stated above, the section on conservation contains no data on PCWD's existing efficiency or on the possible cost or effectiveness of various conservation measures (p. 2-4). The DEA states that even at 100 percent efficiency, the system would still provide too little water to meet PCWD's needs, but there are no facts or analysis on what those needs really are.

By presenting only one contract option, the DEA ignored some obvious alternatives. It should have considered smaller contracts, that is, contracts for lesser amounts of water. If the DEA had data showing PCWD's actual water demands and the prospects for feasible water conservation measures, it might show that the district could get by with a lot less stored water than proposed.

In addition, the DEA should have considered an option for a *short-term* water service contract to last no longer than, say, four years. This option would preserve Reclamation's ability to revisit the contract at the completion of the pending reauthorization study. It also would allow data to be developed on PCWD's actual water needs and on the environmental effects of the proposed use.

**The water quality section is badly flawed.**

Probably the major environmental impacts of the proposed action relate to water quality. The DEA, however, gives short shrift to these potential impacts in just over two pages of analysis. The data and analysis presented do not support the conclusion that there will be no significant water quality impacts (p. 3-9).

As already mentioned, the DEA uses outdated water quality data.

Many key statements in the DEA are unsupported by data, analysis or environmental commitments, and several of them seem counterintuitive. These statements include:

> "The quality of Palmer Creek water is not expected to change significantly due to the proposed action". This statement appears based on an assumption that irrigation practices within PCWD won't change because of the proposed action. But if district growers suddenly have an additional 13,000 AF of water at their disposal, they probably will do some things differently.

> "The impacts expected for the Yamhill River are limited primarily to maintenance of flow levels". This statement assumes not only that the previous statement is true, but that Palmer Creek flows don't change as a result of the proposed action. But if Palmer Creek flows increase as a result of the contract (which they probably would if PCWD uses the contract as anything more than an emergency drought supply), and if that water is as polluted as other irrigation return flows in the Yamhill Basin, the proposed action could further impair water quality in the Yamhill.

> "The proposed water contract would be used primarily during drought years". This statement appears to be based solely on wishful thinking. The PCWD manager stated only that the district's existing supply was inadequate to meet existing demands in roughly every fifth year; he *did not* say that the district would use the water only in drought years, or that PCWD's cropping patterns would not change if it received the proposed contract. In fact, providing PCWD with a secure source of stored water seems likely to lead to long-term changes in district water use, as water supply no longer constrains growers' planting decisions.

The EA does admit that the proposed contract might cause changes in PCWD's water use, which could increase nutrient loading and further impair water quality in the already-polluted Yamhill. However, the EA makes no effort to assess how likely or serious these effects could be. And the EA fails to explain its conclusion that further irrigation-related water quality problems in the Yamhill are not a significant environmental impact (p. 3-9).

Moreover, the DEA does not even acknowledge a major water quality issue regarding the proposed action. The Willamette River does not meet water quality standards for several parameters, and it would be far worse if the Willamette Basin Project reservoirs did not release water to meet minimum flows in the mainstem. In the future, particularly in drought years, there may be too little water stored in these reservoirs to meet all demands for irrigation, M&I uses, and instream needs for water quality and fish & wildlife habitat. The proposed contract would commit 13,000 AF to irrigation uses, foreclosing the possibility of using it for anything else, including water quality needs. That 13,000 AF could be significant, especially in a drought year when the Willamette Basin reservoirs are well short of filling.

For these reasons, the EA needs far more information and analysis on water quality impacts. Reclamation should consult with the Oregon Department of Environmental Quality, which was apparently not contacted for the DEA (p. 4-1).

**The cumulative impacts discussion omits major factors.**

The cumulative impacts discussion on pp. 3-31 and 3-32 identified three "proposed or ongoing activities that could result in incremental impacts to various resources that could be affected by the proposed action." These activities were Corps of Engineers flow releases from the Willamette Basin dams, Reclamation's water marketing program, and state water right applications. But the DEA devotes only two sentences to each activity, and in each case it leaves out a major factor.

As for Willamette Basin project releases, the DEA states that the Corps of Engineers does not

anticipate changing its release patterns. It is possible that dam release operations will change significantly, however, based on the results of the pending reauthorization effort. A major focus of the study will be changes in dam releases. The DEA needs to evaluate how reauthorization might affect the proposed action, and vice versa. As stated above, WaterWatch believes Reclamation should not issue the proposed contract until the reauthorization is completed.

In mentioning Reclamation's water marketing program for the Willamette Basin, the DEA notes that there are 60 other pending applications for the use of up to an additional 11,000 AF of water. (Presumably this is the cumulative total for the 60 applications, although the statement as written is ambiguous.) The DEA ignores the prospect of additional contract requests. Given that both irrigation and municipal interests are seeking to reserve at least 550,000 AF of space in the existing Willamette Basin reservoirs (as explained below), such requests are not only foreseeable, but likely. The DEA should consider this probability, rather than focusing only on existing contract requests.

Under the heading of "OWRD Applications," the DEA notes that new water rights cannot be issued on the Willamette below Salem because it is already overappropriated. The DEA ignores requests by the Oregon Department of Agriculture and the Oregon Department of Land Conservation and Development to reserve mammoth quantities of water for irrigation and muncipal & industrial uses, respectively. The irrigation request seeks 1127 cfs of live streamflow, 225,000 AF from future storage, and 550,000 AF from existing federal storage. The M&I request seeks 266,225 AF of live streamflow and 20,992 AF from existing and future storage. By failing to identify these reservation requests, the DEA ignores enormous new claims on Willamette Basin water which are directly related to the proposed action.

Other OWRD Applications which the DEA fails to mention are minimum perennial streamflows in the Willamette Basin which have not yet been converted to instream water rights as required by law. There are unconverted minimum perennial streamflows on the mainstem Willamette both above and below the point of diversion, as well as on the tributaries with Willamette Basin Project reservoirs. One reason the minimum perennial streamflows remain unconverted is the uncertainty regarding the availability of water from federal storage. The proposed action could prejudice the conversions of the minimum perennial streamflows, but the DEA fails even to consider this issue.

Any cumulative impacts analysis of the proposed action should assess all these factors and more, such as water quality and fish needs on the Willamette mainstem and tributaries. All of these issues will be evaluated as part of the reauthorization study. This is another reason why the proposed action should be deferred until reauthorization is completed.

Thank you for the opportunity to comment.

Best regards,

Reed D. Benson
Reclamation Issues Director

xc: US Army Corps of Engineers
Oregon Department of Environmental Quality
Oregon Water Resources Department

Jan-13-99 05:03P

# MEMO

**To:** Reed Benson, Water Watch
**From:** Richard E. Craven
**Subject:** Palmer Creek Water District Improvement Company, EA

Palmer Creek has decided to proceed with the completion of the EA for the proposed water service contract with the Bureau of Reclamation. The EA has been revised to reflect comments received from the DEQ relating to the amount of water requested. Palmer Creek is requesting an additional 570.48 acre-feet (2.5 cfs) as a primary right to irrigate 228.19 acres of land not presently irrigated. The remainder of the request (62.18 cfs) will be used to offset declining flows during drought years or when Palmer cannot divert flows because of other senior rights by other entities that predate Palmer's water rights.

I discussed the clarification with DEQ. According to DEQ, their concerns have been addressed. I have attached the DEQ letter for your files as discussed today. If you have any questions about the technical specifics of the letter, I probably can address them. If you have questions of a policy nature that relates to the Bureau of Reclamation (BR), then you probably should contact Eric Glover, although Bob Christensen (BR) in Boise is responsible for completing the EA. Mr. Christensen's phone number is 208-378-5039.

You can contact me at 650-0683. My fax number is 557-7540. My email is edmunds@teleport.com.

# Memo

**To:** Reed Benson
**From:** Richard E. Craven
**Subject:** Palmer Creek Water District Improvement Company
**Date:** January 26, 1999

I appreciate the time for the conversation last Friday night concerning questions that you have about the Palmer Creek project. I called Sam Sweeney of the District that evening to discuss your request for additional information. He has provided additional information that may clarify your question of the historic delivery of water to the District, that is does the District presently divert or use 2.5 acre-feet per acre.

The District started operation in 1968. Since 1968, the District has increased in size from approximately 3500 acres to 5900 acres. Irrigation water is pumped from the Willamette River to the District canal. Water flows down the canal and eventually to Palmer Creek. Water in Palmer Creek is then pumped to provide irrigation flows.

Water use between 1968 and 1977 is shown below. Water pumped to the canal and the acre-feet pumped from the canal and Palmer Creek are shown for comparison.

| Year | Acres in District | Water Diverted to the Canal (Acre-feet) | Acre-Feet Used |
|---|---|---|---|
| 1968 | 3462 | 2366 | 826 |
| 1969 | 3569 | 2366 | 1245 |
| 1970 | 3569 | 2470 | 1465 |
| 1971 | 3620 | 2040 | 1470 |
| 1972 | 3620 | 1880 | 1448 |
| 1973 | 3620 | 2900 | 1612 |
| 1974 | 3938 | 3010 | 1172 |
| 1975 | 3938 | 2020 | 1134 |
| 1976 | 3938 | 2580 | 1015 |
| 1977 | 4050 | 2130 | 1244 |

As shown, the amount used is less than the amount diverted. The Water Resources Department measured flows diverted and acre-feet used for irrigation. An average of approximately 55% of the water diverted to the canal was pumped from the canal and Palmer Creek for irrigation. The remainer of the diverted water remained in Palmer Creek. According to Sam Sweeney, the value of 55% is not a canal efficiency (indicating loss of water during conveyance) since the canal is highly impermeable. The difference in water diverted to water used is a result of not pumping it from Palmer Creek.

# MEMO

**To:** Reed Benson
**From:** Richard E. Craven
**Subject:** Palmer Creek Water District Improvement Company
**Date:** February 3, 1999

I appreciate the time for conversation concerning questions that you have about the Palmer Creek project. I called Sam Sweeney of the District to discuss your request for additional explanation. He has provided additional information that may clarify your question of the historic delivery of water to the District, that is does the District presently divert or use up to 2.5 acre-feet per acre.

The District started operation in 1968. Since 1968, the District has increased in size from approximately 3500 acres to 5900 acres. The District's use of water begins by pumping from the Willamette River to the District canal. The amount of water pumped to the canal depends on the amount needed for irrigation or for conveyance of water through the system. Excess water is not pumped because of the electrical pumping costs.

Once in the canal, water flows down the canal and eventually to Palmer Creek. Some water is pumped directly from the canal for irrigation, but the majority of water is pumped from Palmer Creek to provide irrigation flows.

Water use between 1968 and 1977 is shown below. Water pumped to the canal and the acre-feet pumped from the canal and Palmer Creek are shown for comparison.

| Year | Acres in District | Water Diverted to the Canal (Acre-feet) | Ac-Ft/Ac | Acre-Feet Used |
|---|---|---|---|---|
| 1968 | 3462 | 2366 | .68 | 826 |
| 1969 | 3569 | 2366 | .66 | 1245 |
| 1970 | 3569 | 2470 | .69 | 1465 |
| 1971 | 3620 | 2040 | .56 | 1470 |
| 1972 | 3620 | 1880 | .52 | 1448 |
| 1973 | 3620 | 2900 | .80 | 1612 |
| 1974 | 3938 | 3010 | .76 | 1172 |
| 1975 | 3938 | 2020 | .51 | 1134 |
| 1976 | 3938 | 2580 | .65 | 1015 |
| 1977 | 4050 | 2130 | .53 | 1244 |

The Water Resources Department measured flows diverted and acre-feet used for irrigation during these years. Based on acres in the District and the water diverted to the canal, the

application of water for irrigation was 0.51 to 0.80 acre-feet/acre.

As shown, the amount used is less than the amount diverted from the canal. An average of approximately 55% of the water diverted to the canal was pumped from the canal and Palmer Creek for irrigation. The remainer of the diverted water was necessary for conveyance, evaporation, seepage, or remained in Palmer Creek. According to Sam Sweeney, the value of 55% is not a canal efficiency (indicating loss of water during conveyance) since the canal is highly impermeable. The primary difference in water diverted to water used is a result of not pumping it from Palmer Creek. The water left in Palmer Creek likely cannot be reduced because conveyance flows are necessary to distribute water to users. Water remaining in Palmer Creek provides a beneficial impact to riparian conditions as well as the creek, and District considers this a cost of doing business.

Additional information also was provided by the District for comparison. The Water Resources Department did not measure water diverted to the canal (efficiency) during the years between 1988 and 1998.

| Year | Acres in District | Water Diverted to the Canal | Acre-Feet Used |
|---|---|---|---|
| 1988 | 4781 | no data | 3085 |
| 1989 | 4880 | no data | 2719 |
| 1990 | 5321 | no data | 2530 |
| 1991 | 5421 | no data | 2813 |
| 1992 | 5469 | no data | 3390 |
| 1993 | 5661 | no data | 2501 |
| 1994 | 5661 | no data | 3292 |
| 1995 | 5850 | no data | 2775 |
| 1996 | 5851 | no data | 2673 |
| 1997 | 5870 | no data | 2987 |
| 1998 | 5870 | no data | 3013 |

Measurements of the amount diverted to the canal versus acre-feet used were not made. According to Sam Sweeney, the value of 55% for "efficiency" is probably applicable for these years as well.

Based on the information provided, the District does not divert or use all the flow allowable, therefore the historic delivery to the District is less that the 2.5 acre-feet.

**From:** Richard Craven <edmunds@teleport.com>
**To:** Reed Benson <rdbwater@teleport.com>
**Cc:** Robert Christensen <rchristensen@pn.usbr.gov>; Eric Glover <eglover@pn.usbr.gov>
**Date:** Wednesday, March 03, 1999 6:45 AM
**Subject:** Palmer Creek

I talked to Sam Sweeney of Palmer Creek last night concerning the number of acres irrigated each year. He said that in recent years the number of acres irrigated is roughly the same number as the acre feet. If you review the February 3, 1999 memo from me for the years 1988 to 1998, this would be between approximately 2,500 to 3,400 acres, depending on the year (i.e., the right hand column on page 2).

**From:** "Richard Craven" <edmunds@teleport.com>
**To:** "Reed Benson" <rdbwater@teleport.com>
**Date:** 3/9/99 8:38AM
**Subject:** Re: Palmer Creek

Sorry that I did not get back to you. I have had a minor problem gettting on email from home. You can contact me at the office Monday if you would like to talk or clarify any information. Richard.
-----Original Message-----
From: Reed Benson <rdbwater@teleport.com>
To: Richard Craven <edmunds@teleport.com>
Date: Wednesday, March 03, 1999 7:41 AM
Subject: Re: Palmer Creek

>Richard,
>
>thanks for all your research on this. I got a call from Bob Christiansen
>the other day asking if we were going to send in comments on the proposed
>contract. I need to sit down, probably on Friday, go over this file and
>draft some sort of comment letter. Do we need to talk before then? If so,
>please give me a call some time in the next day or two. If not, I'll send
>you a copy of the letter.
>
> Reed
>
>At 06:45 AM 3/3/99 -0800, you wrote:
>>I talked to Sam Sweeney of Palmer Creek last night concerning the number
of
>acres irrigated each year. He said that in recent years the number of
acres
>irrigated is roughly the same number as the acre feet. If you review the
>February 3, 1999 memo from me for the years 1988 to 1998, this would be
>between approximately 2,500 to 3,400 acres, depending on the year (i.e.,
the
>right hand column on page 2).
>>
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>><HTML>
>><HEAD>
>>
>><META content=text/html;charset=iso-8859-1 http-equiv=Content-Type>
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last
>>night concerning the number of acres irrigated each year.  He said
>that in
>>recent years the number of acres irrigated is roughly the same number as
the
>>acre feet.  If you review the February 3, 1999 memo from me for the
years
>>1988 to 1998, this would be between approximately 2,500 to 3,400 acres,
>>depending on the year (i.e., the right hand column on page
2).</FONT></DIV>

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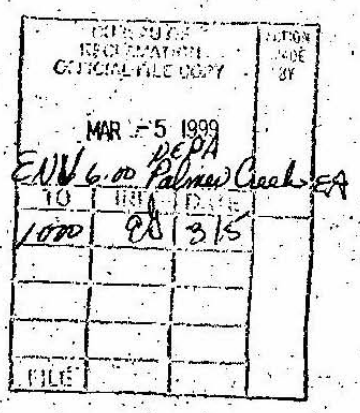
>>
>

CC: "Robert Christensen" <rchristensen@pn.usbr.gov>, "Eric Glover" <eglover@pn.usbr.gov>

# WaterWatch

RIVERS NEED WATER

March 4, 1999




Eric Glover
Area Manager, LCAO
US Bureau of Reclamation
825 NE Multnomah
Portland, OR 97232

Re: proposed contract, Palmer Creek Water District

Dear Eric:

As you know, I have talked and exchanged several e-mails with Richard Craven regarding the proposed Palmer Creek Water District (PCWD) water service contract and the draft Environmental Assessment (DEA) on that contract. Richard has been very helpful in producing useful information on this issue, answering some of my big questions.

WaterWatch continues to have major concerns regarding the proposed contract and the DEA. Based on Richard's response to my questions, it is not at all clear whether or why PCWD needs the water, or how it will be used. And to my knowledge, none of the other concerns I raised in my comment letter of 2/12/96 (copy attached) have been addressed. In fact, with the imminent Endangered Species Act listings of steelhead and chinook salmon in the upper Willamette Basin, we have greater concerns today than we did three years ago. Thus, WaterWatch still opposes Reclamation's proposal to issue a long-term water service contract to PCWD.

Need for/Use of the Water

In my 1996 comment letter, I criticized the EA for having no data on PCWD's current water use or any analysis of need for the water. Richard has provided some good information on PCWD's water use since 1968, and in my view, it tends to show that the district really doesn't need the water. I base this on three factors: First, PCWD has never used more than 3390 AF in any year, roughly 1 AF/acre. There is no indication of why the district needs a storage contract for nearly 13,000 AF or 2.5 AF/acre. Second, PCWD has never been regulated off by the water master—even in such severe drought years as 1977 and 1992. Thus, it is not clear that the district has any real need for a backup supply in drought years, as their rights remain in priority. Third, the highest diversion year in district history was the severe drought year of 1992--and there is nothing to indicate that the district did not have adequate water in that year. In sum, PCWD seems to need nowhere near 13,000 AF in any year, drought or otherwise, barring a dramatic change in irrigated acreage or cropping patterns. The DEA makes no mention of any such changes--and in fact, the Oregon DEQ letter of 12/24/98 seems to assume that such changes would not occur.

WaterWatch of Oregon • 213 Southwest Ash, Suite 208 • Portland, OR 97204
Phone: (503) 295-4039 Fax: (503) 295-2791 Email: watrwtch@teleport.com

Water Quality

The new information regarding PCWD's current water use reinforces my concerns regarding the potential water quality effects of the proposed contract. In my 1996 letter, I suggested that there could be significant water quality impacts in Palmer Creek and the Yamhill River if PCWD changed its irrigation practices. It now appears that PCWD has no real need for the contract, or certainly for 13,000 AF of water supply, unless it changes its irrigation practices dramatically. The DEA must provide some analysis of possible water quality impacts from such changes--that is, from expanding the irrigated acreage, increasing the volume of water applied per acre, or both.

DEQ's letter of 12/24/98 appears to assume that the proposed contract will only maintain the status quo of irrigation deliveries within the district. Given the size of the proposed contract versus the district's history of water use, I believe that is a highly questionable assumption. At a minimum, there has been no commitment that if PCWD receives the contract, it will not increase irrigated acreage or water deliveries per acre, or even that it will only use the contracted water in a drought year.

Endangered Species Listing

The National Marine Fisheries Service is due to make a decision within days on listing both chinook salmon and steelhead in the Upper Willamette Basin under the Endangered Species Act. Most observers expect these populations to be listed under the ESA. The potential effects of the proposed contract on these imperiled fish populations were not examined in the DEA. The DEA did note, however, that both chinook and steelhead are present in the Willamette River near the PCWD diversion, and steelhead are present in the Yamhill River and possibly even Palmer Creek. Prior to issuing any proposed contract for PCWD, there must be a full analysis of the contract's possible effects on chinook and steelhead, and consultation with NMFS. Anything less would be a dereliction of Reclamation's ESA conservation duties.

Other issues raised in 1996 comments

WaterWatch raised several other issues in its 1996 comments, including the range of alternatives considered in the DEA, the cumulative impacts analysis, and the pending Willamette Reservoir study. None of these issues has been addressed. As for the Willamette Reservoir study, it is finally nearing completion, and therefore we believe even more strongly that no new long-term contract should issue until it is finished. If Reclamation issues any contract at all, it should be limited to a maximum of two years, so that it may be revisited after the completion of the study.

Thank you for the opportunity to comment. Please call me if you have questions or would like to discuss this matter.

Best regards,

Reed D. Benson
Executive Director

enclosures

xc: Russell Harding, ODEQ
Lance Smith, NMFS
Bob Christiansen, USBR
Richard Craven for PCWD

# Appendix B

## Agency Correspondence

# United States Department of the Interior

FISH AND WILDLIFE SERVICE

Oregon Fish and Wildlife Office
2600 SE 98th Avenue, Suite 100
Portland, Oregon 97266
Phone: (503)231-6179 FAX: (503)231-6195

Reply To: 8330.SP07(06)

July 17, 2006

Pete Baki
Craven Consulting Group
647 River Hills Drive
Springfield, OR 97477

Subject: Palmer Creek Water District Improvement Co. Project
USFWS Reference # FD8EECC0485BBEC9882571AE0074D938

Dear Mr. Pete Baki:

This is in response to your request, dated July 17, 2006, requesting information on listed and proposed endangered and threatened species that may be present within the area of the Palmer Creek Water District Improvement Co. Project in Yamhill County(s). The Fish and Wildlife Service (Service) received your correspondence on July 17, 2006.

We have attached a list (Enclosure A) of threatened and endangered species that may occur within the area of the Palmer Creek Water District Improvement Co. Project. The list fulfills the requirement of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). U.S. Bureau of Reclamation requirements under the Act are outlined in Enclosure B.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems on which they depend may be conserved. Under section 7(a)(1) and 7(a)(2) of the Act and pursuant to 50 CFR 402 *et seq.*, the U.S. Bureau of Reclamation is required to utilize their authorities to carry out programs which further species conservation and to determine whether projects may affect threatened and endangered species, and/or critical habitat. A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) which are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (NEPA) (42 U.S.C. 4332 (2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to the Biological Assessment be prepared to determine whether they may affect listed and proposed species. Recommended contents of a Biological Assessment are described in Enclosure B, as well as 50 CFR 402.12.

If the U.S. Bureau of Reclamation determines, based on the Biological Assessment or evaluation, that threatened and endangered species and/or critical habitat may be affected by the project, the U.S. Bureau of Reclamation is required to consult with the Service following the requirements of 50 CFR 402 which implement the Act.

Enclosure A includes a list of candidate species under review for listing. The list reflects changes to the candidate species list published May 11, 2005, in the Federal Register (Vol. 69, No. 86, 24876) and the addition of "species of concern." Candidate species have no protection under the Act but are included for consideration as it is possible candidates could be listed prior

to project completion. Species of concern are those taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates), but for which further information is still needed.

If a proposed project may affect only candidate species or species of concern, the U.S. Bureau of Reclamation is not required to perform a Biological Assessment or evaluation or consult with the Service. However, the Service recommends minimizing impacts to these species to the extent possible in order to prevent potential future conflicts. Therefore, if early evaluation of the project indicates that it is likely to adversely impact a candidate species or species of concern, the U.S. Bureau of Reclamation may wish to request technical assistance from this office.

Your interest in endangered species is appreciated. The Service encourages the U.S. Bureau of Reclamation to investigate opportunities for incorporating conservation of threatened and endangered species into project planning processes as a means of complying with the Act. If you have questions regarding your responsibilities under the Act, please contact Kevin Maurice at (503) 231-6179. All correspondence should include the above referenced file number. For questions regarding salmon and steelhead trout, please contact NOAA Fisheries Service, 525 NE Oregon Street, Suite 500, Portland, Oregon 97232, (503) 230-5400.

For future species list requests, please visit our website (http://www.fws.gov/pacific/oregonfwo/EndSpp/EndSpp_SpLstReq.html) for instructions on how to make requests.

Enclosures
EnclosureA: Yamhill COUNTY.PDF
EnclosureB: EnclosureB_Federal_Agencies_Responsibilities.PDF

ENCLOSURE B

FEDERAL AGENCIES RESPONSIBILITIES UNDER SECTION 7(a) and (c)
OF THE ENDANGERED SPECIES ACT

**SECTION 7(a)-Consultation/Conference**

Requires: 1) Federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species;

2) Consultation with FWS when a Federal action may affect a listed endangered or Threatened species to insure that any action authorized, funded or carried out by a Federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of Critical Habitat. The process is initiated by the Federal agency after they have determined if their action may affect (adversely or beneficially) a listed species; and

3) Conference with FWS when a Federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed Critical Habitat.

**SECTION 7(c)-Biological Assessment for Major Construction Projects**[1]

Requires Federal agencies or their designees to prepare a Biological Assessment (BA) for construction projects only. The purpose of the BA is to identify proposed and/or listed species which are/is likely to be affected by a construction project. The process is initiated by a Federal agency in requesting a list of proposed and listed threatened and endangered species (list attached). The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the species list, the accuracy of the species list should be informally verified with our Service. No irreversible commitment of resources is to be made during the BA process which would foreclose reasonable and prudent alternatives to protect endangered species. Planning, design, and administrative actions may be taken; however, no construction may begin.

To complete the BA, your agency or its designee should: (1) conduct an on-site inspection of the area to be affected by the proposal which may include a detailed survey of the area to determine if any species are present and whether suitable habitat exists for either expanding existing populations or for potential reintroduction of species; (2) review literature and scientific data to determine species distribution(s), habitat needs, and other biological requirements; (3) interview experts including those within FWS, National Marine Fisheries Service, State conservation departments, universities, and others who may have data not yet published in scientific literature; (4) review and analyze the effects of the proposal on the species present in terms of effects to individuals and populations, including consideration of cumulative effects to the species and habitat; (5) analyze alternative actions that may provide conservation measures and (6) prepare a report documenting the results, including a discussion of study methods used, any problems encountered, and other relevant information. The BA should conclude whether or not any listed species will be affected. Upon completion, the report should be forwarded to our Portland Office at 2600 SE 98th Ave., Suite 100, Portland, Oregon, 97266.

---

[1] A construction project (or other undertaking having similar physical impacts) which is a major Federal action significantly affecting the quality of the human environment as referred to in NEPA (42 U.S.C. 4332. (2)c). On projects other that construction, it is suggested that a biological evaluation similar to the biological assessment be undertaken to conserve species influenced by the Endangered Species Act.

**FEDERALLY LISTED THREATENED, ENDANGERED, PROPOSED, CANDIDATE SPECIES AND SPECIES OF CONCERN WHICH MAY OCCUR WITHIN YAMHILL COUNTY, OREGON**

LISTED SPECIES[1/]

| | | |
|---|---|---|
| Birds | | |
| Marbled murrelet[2/] | *Brachyramphus marmoratus* | CH T |
| Bald eagle[3/] | *Haliaeetus leucocephalus* | T |
| Northern spotted owl[4/] | *Strix occidentalis caurina* | CH T |
| Fish | | |
| Steelhead (Upper Willamette River)[5/] | *Oncorhynchus mykiss* ssp. | T* |
| Chinook salmon (Upper Willamette River)[6/] | *Oncorhynchus tshawytscha* | T* |
| Invertebrates | | |
| Fender's blue butterfly[7/] | *Icaricia icarioides fenderi* | E |
| Oregon silverspot butterfly | *Speyeria zerene hippolyta* | T |
| Plants | | |
| Golden Indian paintbrush[8/] | *Castilleja levisecta* | T |
| Willamette daisy[9/] | *Erigeron decumbens* var. *decumbens* | E |
| Howellia | *Howellia aquatilis* | T |
| Bradshaw's lomatium | *Lomatium bradshawii* | E |
| Kincaid's lupine[10/] | *Lupinus sulphureus* var. *kincaidii* | T |
| Nelson's checker-mallow | *Sidalcea nelsoniana* | T |

PROPOSED SPECIES

None

CANDIDATE SPECIES[11/]

| | |
|---|---|
| Mammals | |
| Pacific fisher[12/] | *Martes pennanti pacifica* |
| Birds | |
| Yellow-billed cuckoo | *Coccyzus americanus* |
| Streaked horned lark | *Eremophila alpestris strigata* |
| Amphibians and Reptiles | |
| Oregon spotted frog | *Rana pretiosa* |

SPECIES OF CONCERN

| | |
|---|---|
| Mammals | |
| White-footed vole | *Arborimus albipes* |
| Red tree vole | *Arborimus longicaudus* |
| Pacific western big-eared bat | *Corynorhinus townsendii townsendii* |
| Silver-haired bat | *Lasionycteris noctivagans* |
| Long-eared myotis (bat) | *Myotis evotis* |
| Fringed myotis (bat) | *Myotis thysanodes* |
| Long-legged myotis (bat) | *Myotis volans* |
| Yuma myotis (bat) | *Myotis yumanensis* |
| Camas pocket gopher | *Thomomys bulbivorus* |

| | |
|---|---|
| **Birds** | |
| Band-tailed pigeon | *Columba fasciata* |
| Olive-sided flycatcher | *Contopus cooperi* |
| Yellow-breasted chat | *Icteria virens* |
| Acorn woodpecker | *Melanerpes formicivorus* |
| Lewis' woodpecker | *Melanerpes lewis* |
| Mountain quail | *Oreortyx pictus* |
| Oregon vesper sparrow | *Pooecetes gramineus affinis* |
| Purple martin | *Progne subis* |
| **Amphibians and Reptiles** | |
| Tailed frog | *Ascaphus truei* |
| Northwestern pond turtle | *Emys marmorata marmorata* |
| Northern red-legged frog | *Rana aurora aurora* |
| Southern torrent (seep) salamander | *Rhyacotriton variegatus* |
| **Fishes** | |
| Pacific lamprey | *Lampetra tridentata* |
| Coastal cutthroat trout (Oregon Coast) | *Oncorhynchus clarki clarki* |
| Coastal cutthroat trout (Upper Willamette) | *Oncorhynchus clarki clarki* |
| Steelhead (Oregon Coast) | *Oncorhynchus mykiss* ssp. * |
| **Invertebrates** | |
| American acetropis grass bug | *Acetropis americana* |
| Oregon giant earthworm | *Megascolides (=Driloleirus) macelfreshi* |
| **Plants** | |
| Bog anemone | *Anemone oregana* var. *felix* |
| White top aster (Curtus) | *Aster curtus* |
| Pale larkspur | *Delphinium leucophaeum* |
| Willamette Valley larkspur | *Delphinium oreganum* |
| Peacock larkspur | *Delphinium pavonaceum* |
| Coast Range fawn-lily | *Erythronium elegans* |
| Queen-of-the-forest | *Filipendula occidentalis* |
| Henderson's horkelia | *Horkelia hendersonii* |
| Thin-leaved peavine | *Lathyrus holochlorus* |

*(E) - Listed Endangered* *(T) - Listed Threatened* *(CH) - Critical Habitat has been designated for this species*
*(PE) - Proposed Endangered* *(PT) - Proposed Threatened* *(PCH) - Critical Habitat has been proposed for this species*

*Species of Concern - Taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates), but for which further information is still needed.*

* *Consultation with NOAA's National Marine Fisheries Service may be required.*

[1] *U.S. Department of Interior, Fish and Wildlife Service, October 31, 2000, Endangered and Threatened Wildlife and Plants, 50 CFR 17.11 and 17.12*
[2] *Federal Register Vol. 57, No. 45328, October 1, 1992, Final Rule - Marbled Murrelet*
[3] *Federal Register Vol. 60, No. 133, July 12, 1995, - Final Rule - Bald Eagle*
[4] *Federal Register Vol. 57, No. 10, January 15, 1992, Final Rule - Critical Habitat for the Northern Spotted Owl*
[5] *Federal Register Vol. 64, No. 57, March 25, 1999, Final Rule - Middle Columbia and Upper Willamette River Steelhead*
[6] *Federal Register Vol. 64, No. 56, March 24, 1999, Final Rule - West Coast Chinook Salmon*
[7] *Federal Register Vol. 65, No. 16, January 25, 2000, Final Rule - Erigeron decumbens var. decumbens, Lupinus sulphureus ssp. kincaidii, and Fender's blue butterfly*

[8/] *Federal Register Vol. 62, No. 112, June 11, 1997, Final Rule - Castilleja levisecta*
[9/] *Federal Register Vol. 65, No. 16, January 25, 2000, Final Rule - Erigeron decumbens var. decumbens, Lupinus sulphureus ssp. kincaidii, and Fender's blue butterfly*
[10/] *Federal Register Vol. 65, No. 16, January 25, 2000, Final Rule - Erigeron decumbens var. decumbens, Lupinus sulphureus ssp. kincaidii, and Fender's blue butterfly*
[11/] *Federal Register Vol. 69, No. 86, May 4, 2004, Notice of Review - Candidate or Proposed Animals and Plants*
[12/] *Federal Register Vol. 69, No. 68, April 8, 2004, 12-Month Finding for a Petition to List the West Coast Distinct Population Segment of the Fisher*

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
PORTLAND OFFICE
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OREGON 97232-1274

F/NWR5

December 2, 2005

Richard E. Craven
Craven Consulting Group
9170 SW Elrose Court
Tigard, OR 97224

RE: Palmer Creek Water District Proposal of 9/26/2005

Dear Mr. Craven:

On September 26, 2005, you emailed the National Marine Fisheries Service (NMFS) a proposal for screening the Palmer Creek Water District diversion on the Willamette River at about river mile 140, right bank.

Our understandings, according to your letter and drawings:

- The proposed fish screen and pump station will have a maximum capacity of 50 cfs.
- An ISI[1] submerged mechanically-cleaned drum screen is proposed.
- Each drum cylinder will be 60" diameter x 66" in length, yielding approximately 172 square feet of screen area.
- The screen will be 0.068" wedge-wire.

Our conclusions:

- The proposed fish screen design concept is acceptable. Please contact Ben Meyer, Willamette Basin Habitat Branch Chief (503-230-5425; ben.meyer@noaa.gov) regarding other possible requirements.
- We recommend that an environmentally gentle hydraulic oil such as Chevron Clarity[2] (or one similar) be employed. Hydraulic oil was not specified, except as "food grade". Clarity is superior environmentally and operationally, and is cheaper than food grade vegetable oils.
- The clearance above and below the screen does not meet the usual NMFS' criteria. We are accepting it in this case because we believe that this design is the most appropriate for this site because it has the least riparian impact.

[1] http://www.intakescreensinc.com/
[2] http://www.chevron.com/products/prodserv/nall/powergeneration/content/prodspecs.shtm#hydraulic

- The dead-end slough will not generate sweeping flows at the pump screen, which we normally desire to help cleanse the screen. Nevertheless, we accept the proposed design in the slough for the following reasons:
    - The US Bureau of Reclamation's (USBR) December 4, 2003, assessment of inlet channel approach velocity was quite informative and useful. The USBR's calculations indicate that average water velocity induced by the pumps into the inlet would be small, approximately 0.21 fps toward the pumps at lowest water levels. The fish should be able to contend with this amount.
    - The nominal average approach velocity at the screen face will be 157 $ft^2$/50 $ft^3$/sec = 0.31 fps. This is considerably safer for the fish than NMFS' customary criteria velocity of 0.4 fps, which will make it relatively easier for fish to avoid this screen.
    - Continued employment of a trashboom will keep trash from the screen. (This was not included in the plans, but needs to continue to be employed).

You will be required to demonstrate that the screen meets velocity criteria of less than 0.4 maximum after construction, including documenting the approach velocity of the screen with acoustic velocimeters or similarly accurate devices.

Please continue to keep John Johnson (503-231-2110; john.k.johnson@noaa.gov) of my staff informed regarding the progress of this project.

Sincerely,

Keith Kirkendall

Keith Kirkendall, Chief
FERC & Water Diversions Branch
Hydropower Division

Enclosures

Oregon
Theodore R. Kulongoski, Governor

Department of Fish and Wildlife
Fish Division
3406 Cherry Avenue NE
Salem, OR 97303
(503) 947-6200
Fax (503) 947-6202
TTY (503) 947-6339
www.dfw.state.or.us

9 Dec 2005

Richard E. Craven
Craven Consulting Group
9170 SW Elrose Court
Tigard, OR 97224

Re: Palmer Creek Water District Improvement Company Fish Screen

Dear Richard,

I have reviewed the design for the proposed fish screen at the Dayton Pump Station on Palmer Creek near river mile 73.4 on the Willamette River. This design was submitted to my office via your e-mail on 27 Sep 2005. The proposed fish screen facility is characterized as a slant retrievable intake screen, sized for up to 50 cfs.

The location of the Dayton Pump Station (on a backwater of the Willamette River) presents challenges for a reliable water intake that consistently protects fish. The challenges include widely varying river stages, with consequent changes in channel configurations, and inadequate sweeping velocities to move juvenile fish and water-borne debris away from the screen. Still, after consideration of numerous alternative fish screening concepts for this site, this proposal addresses the issues and constraints well. Screen area and calculated approach velocities are acceptable, and the absence of sweeping velocity may be compensated by regular removal and inspection of the screen by means of the retrieval track and mechanisms. Continued use of a floating trash barrier device will also be beneficial. Consequently, the proposed, retrievable, wedge wire T-Screen is approved for use at the Dayton Pump Station water intake.

Please proceed with detailed designs for this important fish passage facility. Keep me posted as your plans progress

Thank you for your efforts to protect fish.

Michael B Lambert
Lead Fish Passage Engineer
Fish Screening & Passage Program

cc: Steve Mamoyac
Bob Hair
Bernie Kepshire
Jon Bartch
John Johnson

**Main Identity**

**From:** <Larry_Rasmussen@fws.gov>
**To:** "Richard Craven" <richard.craven@verizon.net>
**Sent:** Wednesday, August 02, 2006 11:35 AM
**Attach:** DaytonPumps1.TIF; Dayton Pumps.pdf
**Subject:** Proposed new fish screen at Dayton Pump Station

Richard-

We have reviewed the Palmer Creek Water District's proposed fish screen plans for the Dayton pump station. The Fish and Wildlife Service concurs with the Oregon Department of Fish and Wildlife and the National Marine Service (letters attached) that the proposed design is acceptable. The site presents significant challenges to achieve fish protection and we believe the proposed design with the reduced approach velocity will provide adequate protection.

Larry

(See attached file: DaytonPumps1.TIF)(See attached file: Dayton Pumps.pdf)

><( ( ( ( '> <' ) ) ) )><
Larry Rasmussen
U.S. Fish and Wildlife Service
Oregon State Office
2600 S.E. 98th, Suite 100
Portland, OR 97266
(503) 231-6179

Oregon
Theodore R. Kulongoski, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St. NE, Suite C
Salem, OR 97301-1271
(503) 986-0707
FAX (503) 986-0793
www.hcd.state.or.us

July 13, 2006

Mr. Steven Highland
Craven Consulting Group
3930 NW Witham Hill Dr No 252
Corvallis, OR 97330

RE: SHPO Case No. 06-1642
Palmer Ranch Project
6S 3W 59, Dayton Yamhill County

Dear Steven:

Our office recently received your report about the project referenced above. I have reviewed your report and agree that the project will have no affect on any known cultural resources. No further archaeological research is needed with this project.

Please be aware, however, that if during development activities you or your staff encounters any cultural material (i.e., historic or prehistoric), all activities should cease immediately and an archaeologist should be contacted to evaluate the discovery. Under state law (ORS 358.905-955) it is a Class B misdemeanor to impact an archaeological site on public or private land in Oregon. Impacts to Native American graves and cultural items are considered a Class C felony (ORS 97.740-760). If you have any questions regarding any future discovery or my letter, feel free to contact our office at your convenience.

Dennis Griffin

Dennis Griffin, Ph.D., RPA
State Archaeologist
(503) 986-0674
dennis.griffin@state.or.us

**Table B1. Threatened and endangered species of vegetation, fish, wildlife, and invertebrates**

| Species | Federal Status | Critical Habitat Designated? | Habitat Requirements | Habitat Present in Project Area? | Anticipated Impacts |
|---|---|---|---|---|---|
| Bradshaw's Lomatium *(Lomatium bradshawii)* | Listed Endangered October 31, 1988 | No | Wet, open areas of Willamette Valley. | Possible in service area, but not at the irrigation intake | None. Irrigation would be confined to presently farmed lands. No appropriate habitat on riprap slope at intake where fish screen would be installed. |
| Howellia *(Howellia aquatilis)* | Listed Threatened July 14, 1994 | No | Rooted in shallow ponds, floats under or near water surface. | Possible in service area, but not at the irrigation intake | None. Irrigation would be confined to presently farmed lands. No appropriate habitat on riprap slope at intake where fish screen would be installed. |
| Nelson's checker-mallow *(Sidalcea nelsoniana)* | Listed Threatened September 30, 1998 | No | Endemic to Willamette Valley and adjacent Coast Range. | Possible in service area, but not at the irrigation intake | None. Irrigation would be confined to presently farmed lands. No appropriate habitat on riprap slope at intake where fish screen would be installed. |
| Golden Indian paintbrush *(Castilleja levisecta)* | Listed Threatened June 11, 1997 | No | Once prolific in Willamette Valley in Linn, Marion, and Multnomah Counties. | Unlikely | None. Species thought to be extinct in Oregon. Project area outside of historical range. If present, unlikely to be affected since irrigation would be confined to presently irrigated lands. |
| Willamette daisy *(Erigeron decumbens var.decumbens)* | Listed Endangered January 25, 1990 | No | Heavy soils on native Willamette Valley prairies, grassland. | Possible in service area, but not at the irrigation intake | None. Irrigation would be confined to presently farmed lands. No appropriate habitat on riprap slope at intake where fish screen would be installed. |
| Kincaid's lupine*(Kincaidii sulphureus)* | Listed Threatened January 25, 2000 | No | Willamette Valley | Possible in service area, but not at the irrigation intake | None. Irrigation would be confined to presently farmed lands. No appropriate habitat on riprap slope at intake where fish screen would be installed. |
| **Species** | **Federal Status** | **Critical Habitat Designated?** | **Habitat Requirements** | **Habitat Present in Project** | **Anticipated Impacts** |

| Species | Federal Status | Critical Habitat Designated? | Habitat Requirements | Habitat Present in Project Area? | Anticipated Impacts |
|---|---|---|---|---|---|
| | | | | **Area?** | |
| Upper Willamette River Chinook *(Oncorhynchus tshawytcha)* | Listed Threatened March 24, 1999 | Yes January 2, 2005 | Cool, flowing, well-aerated water with refugia in mainstem rivers, tributaries, backwaters, and sloughs. | Likely | None. Proposed contract would not alter habitat for this species. Screening of diversions under the proposed contract will reduce or avoid take of this species. |
| Upper Willamette River Steelhead *(Oncorhynchus mykiss)* | Listed Threatened March 25, 1999 | Yes September 2, 2005 | Cool, flowing, well-aerated water with refugia in mainstem rivers, tributaries, backwaters, and sloughs. | Likely | None. Proposed contract would not alter habitat for this species. Screening of diversions under the proposed contract will reduce or avoid take of this species. |
| Bald eagle *(Haliaeetus leucocephalus)* | Listed Threatened July 12, 1995 | No | Near water bodies with nearby roost trees. | Possible in service area, but not at the irrigation intake | None. Proposed project would not alter habitat requirements for this species. Fish screen installation would occur in the late fall after typical nesting activities for bald eagle. |
| Northern Spotted Owl *Strix occidentalis caurina* | Listed Threatened June 26, 1990 | Yes January 15, 1992 | Mainly old growth/second growth forests with closed canopy. | No | None. Proposed project would not alter habitat requirements for this species. |
| Marbled Murrelet *Brachyramphus marmoratus* | Listed Threatened October 1, 1992 | Yes June 24, 1996 | Mainly along the Oregon Coast area in Oregon near old growth timber. | No | None. Proposed project would not alter habitat requirements for this species. |
| Fenders blue butterfly *(Icaricia icarioides fenderi)* | Listed Threatened January 25, 2000 | No | Associated with lupines in low elevation, open habitats. | Possible in service area, but not at the irrigation intake | None. No new lands are to be brought into farming by the PCWD which might remove lupine plant species. |
| Oregon Silverspot Butterfly (*Speyeria zerene hippolyta*) | Listed Threatened October 15, 1980 | Yes October 15, 1980 | Central Oregon Coast in Oregon | No | None |

**TAKE OUT**

# Appendix C

**SHPO Letter**

Oregon
Theodore R. Kulongoski, Governor

**Parks and Recreation Department**
State Historic Preservation Office
725 Summer St. NE, Suite C
Salem, OR 97301-1271
(503) 986-0707
FAX (503) 986-0793
www.hcd.state.or.us

July 13, 2006

Mr. Steven Highland
Craven Consulting Group
3930 NW Witham Hill Dr No 252
Corvallis, OR 97330

RE: SHPO Case No. 06-1642
Palmer Ranch Project
6S 3W 59, Dayton Yamhill County

Dear Steven:

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Please be aware, however, that if during development activities you or your staff encounters any cultural material (i.e., historic or prehistoric), all activities should cease immediately and an archaeologist should be contacted to evaluate the discovery. Under state law (ORS 358.905-955) it is a Class B misdemeanor to impact an archaeological site on public or private land in Oregon. Impacts to Native American graves and cultural items are considered a Class C felony (ORS 97.740-760). If you have any questions regarding any future discovery or my letter, feel free to contact our office at your convenience.

Dennis Griffin, Ph.D., RPA
State Archaeologist
(503) 986-0674
dennis.griffin@state.or.us

# Appendix D

**Agency and Public Mailing List**

# *Agency and Public Mailing List*

## Federal Agencies

U.S. Department of the Interior
Attn: Mr. Stanley Speaks
Bureau of Indian Affairs
911 N.E. 11th
Portland, OR 97232

Kemper McMaster
U.S. Fish and Wildlife Service
2600 S.E. 98th Avenue, Suite 100
Portland, Oregon 97266

Larry Rasmussen
U.S. Fish and Wildlife Service
2600 S.E. 98th Avenue, Suite 100
Portland, Oregon 97266

U.S. Department of the Interior
National Park Service
83 S. King, Suite 212
Seattle, WA 98104

U.S. Department of the Interior
Regional Environmental Officer
500 NE Multnomah, Suite 600
Portland, OR 97232-2136

U.S. Department of Agriculture
Forest Service
Pacific NW Region
319 S.W. Pine
Portland, OR 97208

Larry Evans, Chief Regulatory Branch
U.S. Army Corps of Engineers
Portland District – Regulatory Branch
333 S.W. First Avenue
Portland, OR 97204

Michael Tehan
National Marine Fisheries Service
1201 N.E. Lloyd Blvd, Suite 100
Portland, Oregon 97232-1274

L. Michael Bogert, Regional Administrator -
Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, Washington 98101

## State Agencies

The Honorable Ted Kulongoski
Governor of Oregon
160 State Capitol
900 Court Street
Salem, Oregon 97301-4047

Karen Quigley, Executive Officer
Oregon Legislative Commission on Indian Services
167 State Capitol
Salem, OR 97310-1347

Katy Coba, Director
State of Oregon
Department of Agriculture
635 Capitol St. NE
Salem, OR 97301

Stephanie Hallock, Director
Oregon Department of Environmental Quality
811 S.W. Sixth Avenue
Portland, OR 97204-1390

Phil Ward, Director
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, OR 97301

Tom Murtagh, District Fish Biologist
State of Oregon
Department of Fish and Wildlife
17330 S.E. Evelyn Street
Clackamas, Oregon 97015

Virgil Moore, Executive Director
Oregon Department of Fish and Wildlife
3604 Cherry Street N.E.
Salem, OR 97303-4924

Oregon Dept. of Fish and Wildlife
Roy Elicker, Deputy Director
3406 Cherry Ave. NE
Salem, OR 97303

Marvin D. Brown, State Forester
Oregon Department of Forestry
2600 State St.
Salem, Oregon 97310

Ann Hanus, Director

Oregon Department of State Lands
775 Summer Street NE
Salem, OR 97301-1279

Dr. Dennis Griffin, PhD., State Archaeologist
Oregon Department of Parks and Recreation
State Historic Preservation Office
725 Summer Street NE, Suite C
Salem, OR 97301

Vicki McConnell, Director and State Geologist
Oregon Dept. of Geology and Mineral Industries
800 NE Oregon Street #28
Portland, OR 97233

Lane Shetterly
State of Oregon
Land Conservation and Development Dept.
635 Capitol Street NE, Suite 150
Salem, OR 97301-2540

Mike Carrier, Natural Resource Policy Director
Governor Natural Resource Office
Public Service Building
255 Capitol Street NE, Room 126
Salem, OR 97301

Tim Wood, Director
Oregon Department of Parks and Recreation
725 Summer Street NE, Suite C
Salem, OR 97301-1271

Matthew Garrett, Director
Oregon Department of Transportation
355 Capitol Street NE, Room 135
Salem, OR 97301

Michael Grainey, Director
State of Oregon
Department of Energy
625 Marion NE
Salem, OR 97310

## Congressional Delegation

Senator Ron Wyden
United States Senate
Portland, OR
1220 SW 3rd Avenue
Suite 585
Portland, OR 97204

Senator Gordon Smith
United States Senate
One World Trade Center
121 SW Salmon Street, Suite 1250
Portland, OR 97204

Representative David Wu
United States House of Representatives
Portland Office
620 SW Main, Suite 606
Portland, OR 97205

## State Representative/Senator

Senator Gary George
900 Court Street NE
Suite S-214
Salem, OR 97301-4067

Representative Donna Nelson
900 Court Street NE
Suite H-279
Salem, OR 97301-4050

## Native American Tribes

Confederated Tribes of Siletz
Mr. Robert Kentta
P.O. Box 549
Siletz, OR 97380

Confederated Tribes of Grand Ronde
Ms. Khani Schultz
9615 Grand Ronde Road
Grand Ronde, OR 97347

## *Agency and Public Mailing List*

### County Offices/Commissioners

Leslie Lewis, Chairwoman
Yamhill County
Board of Commissioners
535 NE Fifth Street
McMinnville, OR 97128

Mike Brandt, Planning Director
Yamhill County
Department of Planning
and Development
525 NE 4th Street,
McMinnville, Oregon 97128

Kathy George, Vice Chair
Yamhill County
Board of Commissioners
535 NE Fifth Street
McMinnville, OR 97128

Mary P. Stern, Commissioner
Yamhill County
Board of Commissioners
535 NE Fifth Street
McMinnville, OR 97128

Bill Gille, Public Works Director
Yamhill County Public Works Department
2060 Lafayette Avenue
McMinnville, OR 97128

### Cities (Including Mayor, Library, etc.)

Rhine McLin, Mayor
City of Dayton
416 Ferry Street
PO Box 339
Dayton Oregon 97114

Mary Gilkey City Library
416 Ferry Street
Dayton, OR 97114

### Special Interest Groups

Oregon Trout Association
65 S.W. Yamhill Street, Suite 300
Portland, OR 97204

Oregon Wildlife Federation
2753 N. 32nd
Springfield, OR 97477

The Nature Conservancy
821 S.E. 14th Avenue
Portland, OR 97214

Oregon Chapter Sierra Club
2950 S.E. Stark, Suite 110
Portland, OR 97214

Trout Unlimited
1300 North 17th Street, Suite 500
Arlington, VA 22209

OSPIRG
1536 S.E. 11th Avenue
Portland, OR 97214

Salmon & Steelhead Anglers
P.O. Box 293
Gladstone, OR 97027

Kathryn Thomsen
Izaak Walton League of America
1589 Wilson Street
Eugene, OR 97402

Water Watch of Oregon
213 S.W. Ash, Suite 208
Portland, OR 97204

Assoc. N.W. Steelheaders
P.O. Box 22065
Milwaukie, OR 97269

### NEWSPAPERS

News Register

611 East Third
McMinnville, OR 97128

# ADDENDUM

## Assessment of Potential Effects to Essential Fish Habitat

## Addendum to the Biological Assessment for the Palmer Creek Water District Improvement Company Water Service Contract

# Addendum - ASSESSMENT OF POTENTIAL EFFECTS TO ESSENTIAL FISH HABITAT

## 1.0 Introduction

Under Section 305 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), Federal agencies that authorize, fund, or undertake any action that may adversely affect any Essential Fish Habitat (EFH) are required to consult with NMFS. EFH has been defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (PFMC, 1999). EFH has been designated for federally managed groundfish, coastal pelagics, and Pacific salmon fisheries as those waters and substrate necessary to ensure the production needed to support a long-term sustainable fishery (PFMC, 1999).

The Bureau of Reclamation (Reclamation) has prepared this assessment to evaluate the impacts of the proposed project on EFH for Chinook salmon (*Oncorhynchus tshawytscha*) and coho salmon (*Onycorhynchus kisutch)* that inhabit the project area. Pink salmon are not found in the project area. Freshwater EFH includes all streams, lakes, ponds, wetlands, and other water bodies currently, or historically, used by salmon, and necessary to provide habitat for spawning, breeding, feeding, or growth to maturity. Fish protected under the MSA present in this vicinity of the Willamette River are coho salmon and Chinook salmon.

## 2.0 Description of the Proposed Action

Please refer to the analysis in the EA for detailed information on the project description, impacts, and mitigation for the proposed project.

## 3.0 Effects Evaluation on EFH for Coho and Chinook Salmon

The proposed project impacts on EFH necessary for migration, feeding, rearing, and spawning were evaluated in terms of migration of adults, spawning, rearing, and emigration of juvenile fish.

**Migration** – The project would not impose an impediment to upstream movement of adult coho or Chinook salmon during construction or operation. There are no coffer dams or other obstructions necessary in the Willamette River for installation of the fish screen at the existing intake on a backwater of the Willamette River. Installation would occur during the ODFW designated inwater work period (June 1 to September 30). Adult coho or chinook would not be expected to be present or present in the backwater area of the Willamette River where elevated temperatures would be expected to occur. If adult fish were present, any noise or other installation activities possibly could cause fish to avoid the area and continue upstream. Although installation activities would be unlikely to have a measurable effect, some impact could occur.

Operation of the intake structure during irrigation season could potentially attract fish. The approach velocity would be low (less than 0.3 ft/sec) compared to the velocities of the

Willamette River (greater than 3 ft/sec), and entrainment or impingement of fish would not be expected to occur on the fish screen that meets the fish protection criteria approved by NMFS and ODFW.

**Spawning** – Spawning activities during the inwater work period of June 1 to September 30 are unlikely for coho and Chinook salmon. There are no records of spawning activities in the backwater area where the substrate material consists of sand-sized sediments. Water quality impacts, such as turbidity and sedimentation likely would not occur during installation of the fish screen. Impacts are not expected to occur.

**Rearing and Emigration** – Habitat conditions for juvenile fish in the vicinity of the existing intake are relatively minimal. Although the substrate is primarily sand with no undercut banks, side channels, large cobble, or large woody debris, it is likely that juvenile fish use the area during portions of the year when water temperatures are adequate or during downstream movement. Installation of the fish screen would occur during the inwater work period and after the major migration period in the spring months; however some fish likely would be present. Any juvenile fish present likely would avoid the area because of disturbances during installation of the fish screen. The operation of the project would minimize impacts on fish and habitat by maintaining a fish screen on the intake that would have a low approach velocity.

**Conclusion** - Based on the timing of the work, the relatively minimal habitat in the vicinity of the project, the minimal amount of work needed for the installation of the fish screen on an existing intake structure, there will be a minimal to no adverse impact. Installation of the fish screen approved by NMFS and USFWS will have a significant positive impact on coho and Chinook salmon. The positive effects would occur from minimizing or avoiding the entrainment and/or impingement of fish at the irrigation intake.

# 4.0 References

PFMC. 1999. Amendment 14 to the Pacific Coast Salmon Plan. Appendix A: Description and Identification of Essential Fish Habitat, Adverse Impacts and Recommended Conservation Measures for Salmon (August 1999). Pacific Fisheries Management Council.