

ENVIRONMENTAL ASSESSMENT

**Paisley Town Weir Project
Paisley Ranger District
Fremont-Winema National Forests
Lake County, Oregon**

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ENVIRONMENTAL ASSESSMENT
Paisley Town Weir Project

I. INTRODUCTION

A. Background

The Bagley Ditch Corp. proposes to remove an existing weir and change the point of diversion. This will improve aquatic species passage, reduce the risk of weir failure during flood events and restore sediment transportation mechanism and riparian function. The weir is located on the Chewaucan River just upstream from the town of Paisley, Oregon. The legal description is Section 23 and 24 of Township 33S, Range 19E.

A fish passable diversion structure, screen and pipeline will be installed to divert water. The new diversion will be screened to allow for improved fish habitat and a reduction in incidental takes. The new diversion will not involve placement of a permanent barrier structure such as a weir or dam in the Chewaucan River.

Rehabilitation will be conducted on a reach of river from 1,300 feet downstream of the existing weir to approximately 2,600 feet upstream of the Mill Street Bridge. This rehabilitation will potentially bring the river to grade and allow for fish passage and proper functioning of the riparian area. Rehabilitation will be developed according to an economical, stable, and fish passable stream design. Rehabilitation efforts will include placement of root wads, small stabilization structures, and planting of cottonwoods and willows.

B. Purpose and Need for the Action

The purpose and need for the proposed action is threefold: the need for improved aquatic passage, a decreased risk of channel damage, and water diversion from the river for a variety of uses such as irrigation, fire suppression, recreation, and the watering of livestock. The purpose of the proposed action is to meet the need for action with the least environmentally damaging practical solution. This solution will be accomplished through removal of the existing weir, relocation and screening of the diversion, and improvement of the stream condition and riparian function through rehabilitation efforts.

The need for the action was established by the Chewaucan Watershed Council, the Resource Advisory Council, and the Lake County Resources Initiatives. They identified this as an important reach of the river to rehabilitate. The project need was recommended by the Resource Advisory Committee to be addressed now through use of Forest Service funds, prior to a weir failure. Failure of the weir would incur more costs for rehabilitation, than addressing the current situation. The recommendation for this action was developed by HDR Engineering in 2002 after meetings with Oregon Water Resource Department, Oregon Department of Fish and Wildlife, US Forest Service Fremont National Forest and local water users and community members in 2000.

The ultimate goal of the Paisley Weir proposal is to regain lost fish habitat and spawning grounds, maintain acceptable diversion levels, reestablish a historic channel state, and restore a lucrative economic factor to the area. With the removal of the weir, fishing may again be a viable activity in the entire Chewaucan River system. The Chewaucan River will again support a natural ecosystem.

II. PROPOSED ACTION AND ALTERNATIVES

A. PROPOSED ACTION – Remove existing weir; create diversion, fish screen, and pipeline; place check dams. The project will remove the 15 foot high weir, allowing for the restoration of aquatic species passage to the Chewaucan River. After the structure is removed, the rubble will be removed to an acceptable upland fill area. In addition, a non-barrier diversion structure will be built approximately 3/8 of a mile upstream of the current diversion site. The design will use the natural geology of the streambed to divert water through a gravity flow system. 14-16 placed rock weirs, constructed of washed rock, will provide unimpeded upstream fish passage without the use of fish ladders or other upstream passage methods. The rock weirs will be placed within the Chewaucan River from approximately 1300 feet downstream of existing weir to approximately 2600 feet upstream of the Mill Street Bridge. A fish screen and pipeline will be installed at the new point of diversion.

Engineering has been conducted for the past two years by HDR Engineering to assist in site plan development and design. HDR Engineering is consulting with Oregon Department of Fish and Wildlife (ODFW) to ensure that site plan and design are acceptable for aquatic passage. The ODFW fish biologist and engineer will sign off on the final designs prior to implementation.

Construction of the pipeline and removal of the existing diversion structure is scheduled to begin in the fall of 2004 with complete removal of the weir to take place by 2008. The existing weir will be removed in stages.

Year 1: remove training wall from existing diversion structure.

Year 2: remove top 2 feet of existing diversion structure.

Year 3: remove an additional 2 feet of existing diversion structure.

Year 4: remove the rest of the existing diversion structure.

All construction should be completed by year 4 with later grade control such as rocks and root wads placed as needed.

Recent geological testing concluded that the sediment load directly upstream of the existing diversion structure is far lower than initially believed, around 3%. The amount of sediment released would be negligible especially as the weir is being removed in stages. As the weir is gradually removed, the stabilization structures downstream of the structure should slowly begin to retain sediment, and eventually rebuild the downstream areas to historic levels. Geological testing also indicated that the grade difference above and below the weir is due to a headcut migrating upstream toward the existing weir.

All construction will take place on privately owned property and within the stream channel. The pipeline will be placed on private property with an easement held by Bagley Ditch Corp. The structures and fish screen will be placed within the channel from staging areas on private property adjacent to the channel.

The appropriate permits for the Proposed Action will be obtained. These permits include US Army Corps of Engineers' 404 permit and Oregon Department of State Lands fill/removal permit. The Bagley Ditch Corp. has obtained a change in their water right stating the new diversion point from Oregon Department of Water Resources.

B. Alternative 1 – No Action

The “no action” alternative would leave the weir and diversion system in its current condition.

III. EXISTING CONDITIONS

A. GENERAL SETTING

The project is situated within the town of Paisley, Oregon on the Chewaucan River. The physical description is Township 33S, Range 19E, Sections 23 & 24. The town of Paisley is located in Lake County in the southeast area of Oregon. The area is generally considered high desert, which is extremely dry. The Chewaucan River is considered a sub-basin watershed and flows into Lake Abert. The Chewaucan River is a 5th-field watershed and contains nine 6th-field watersheds.

B. SPECIFIC RESOURCE DESCRIPTIONS

Hydrology

Paisley, Oregon, lies in a low rainfall area, averaging 12-16 inches of precipitation per year. The headwaters of the Chewaucan River average 24-35 inches of precipitation per year due to the higher elevation. This rainfall and the higher elevation lead to a large snow pack. The ascending limb of the typical yearly hydrograph begins in early to mid-March, with the peak of the hydrograph occurring in late April. The descending limb thins in early July, when flows remain fairly constant until the next spring.

Storm event flows from historic gauge data are as follows:

- 2-year storm event = 910 cfs
- 25-year storm event = 4525 cfs
- 100-year storm event = 6515 cfs

The Chewaucan River is considered distressed in the project area due to blockage of sediment by the existing diversion structure. Because sediment is not allowed to move down stream, natural erosion of the river bed is not present. At this time, the river bed below the existing structure is extremely incised (approximately 10-15 feet) from a headcut migrating upstream to the existing weir. Downstream of the existing structure, the river bed now

displays a soft clay foundation; this clay is prone to flaking during high flows, further eroding the channel. The incision restricts the stream from naturally meandering. The lack of meanders increases the grade and flow velocity reducing sediment deposition and increasing potential for erosion.

Water Quality

The upper reaches of the Chewaucan River are listed as impaired according to the Oregon Department of Environmental Quality 303(d) list for the following parameters:

Parameter: Temperature

Criteria: 20.0 C

Season: Summer

Listing Status: 303(d) List

The seven day average maximum temperature may not exceed 20.0 degrees Celsius for streams with Lahontan cutthroat trout or redband trout. Since the Chewaucan River contains redband trout, this is the temperature standard according to OAR Chapter 340, Division 41 Water Quality Standards.

According to the Oregon Department of Environmental Quality (1998), the Chewaucan River exceeded the water temperature standard based on a calculated maximum 7-day moving average in 1997 and 1998. Therefore, the Chewaucan River is water quality impaired for the water temperature standard.

Parameter: Biological Criteria

Criteria: Waters of the state shall be of sufficient quality to meet BCI standards.

Listing Status: 303(d) list

Supporting Data: USFS Data (2 sites: p7, 34s-18e-16 SWNW and P8, 35S-18E-34 SWSE): BCI of 62 and 70 respectively indicated stress conditions in 1994 with indication of sedimentation. Fair-good (74 and 82) BCI values were found in 1990.

Sedimentation scores on the Chewaucan River dropped by an average of 12 points in a 4 year period. The above biological criteria are based on a narrative rule, "Waters of the State must be of sufficient quality to support aquatic species without detrimental changes in the resident biological communities." (Stat. Auth.: ORS 468.020, 468B.030, 468B.035, 468B.048 Stats. Implemented: ORS 468B.030, 468B.035, 468B.048 Hist.: DEQ 14-1991, f. & cert. ef. 8-13-91; Renumbered from 340-041-0027 by DEQ 17-2003, f. & cert. ef. 12-9-03).

The lower portion of the river is not displaying acceptable levels of sedimentation; in some cases too much sedimentation, and in the case of the area just downstream of the Paisley Town Weir, no sediment at all. All of the above indicators point to areas of concern within the Chewaucan River. The lack of sediment transport below the weir, disturbs the alluvial fan nature of

the Chewaucan River. The alluvial fan system requires transport of acceptable levels of sediment.

The Paisley Town Weir contributes to the high water temperature by slowing and widening the river, this in turn raising water temperature. This warmer water then enters the lower reaches of the river and warms them. The weir also changes sediment levels by not releasing the existing small amounts of sediment to the lower reaches of the river. The headcut below the existing weir has removed almost all of the sediment in that reach and has allowed for downcutting of the stream bed.

Wildlife

More than 300 species of fish and wildlife exist in the area. Game animals most often hunted include mule deer (*Odocoileus hemionus*), Rocky Mountain elk (*Cervus canadensis*), and pronghorn antelope (*Antilocapra americana*). Several varieties of trout inhabit the area's lakes and streams, and a few lakes also support warm-water fish, such as large mouth bass (*Micropterus salmoides*). Water fowl such as Canada geese (*Branta canadensis*) and mallards (*Anas platyrhynchos*) are frequently found in the area. The area supports populations of large predators such as black bear (*Ursus americanus*), mountain lion (*Puma concolor*), bobcat (*Lynx rufus*), and a great variety of nongame species. Fish species such as the redband trout (*Oncorhynchus mykiss* ssp.), tui chub (*Gila bicolor* ssp.), and the speckled dace (*Rhinichthys osculus*) are found in the project river. (HDR Engineering, 2004)

Threatened and Endangered Species

Bald eagles, *Haliaeetus leucocephalus*, have been recorded in the area. They are suspected of nesting nearby, but nests were never verified. For a complete list of T & E species in Lake county see **Appendix I**. (Mauer, 2004)

Vegetation

A plant survey was conducted of the project area to identify any sensitive species or habitats, and identify any populations of noxious weeds. General observations regarding vegetation: The upland within the project site exhibited juniper sagebrush scrub plant community. In this area the junipers cover approximately 5-10% of the site, with the shrubs covering approximately 50% of the area. Sparse bunch grass and forb cover also existed in the upland regions.

Closer to the Chewaucan River there is a narrow band of riparian vegetation, exhibiting facultative wet, facultative and obligate plants. The riparian vegetation was dominated by willows and black cottonwoods. Understory vegetation included sedges, rushes and scouring rush. The reach above Mill Street Bridge exhibited much less shrub/tree cover in the riparian area, approximately 10%. The riparian vegetation is confined to the steeper banks of the incised stream, at and above the bank full levels.

The central reaches of the project area between Mill Street Bridge and the existing weir exhibit a mix of understory and shrub/tree cover. The southeastern side of this reach has about 80% cover of black cottonwood, with the northwestern side displaying about 20% cover of shrubs and trees. The understory exhibited about 30% cover of sweetclover.

The downstream reaches within the project area below the existing weir exhibit a wider (but still narrow) riparian area. These reaches are dominated by willows and black cottonwoods, which cover about 90% of the riparian area. The understory is primarily vetch, sedges, rushes, and scouring rush. The understory is evidenced closer to the river edge, at or below bank full levels. Whereas, the overstory is located at or above bank full on a narrow flood plain or on steeper banks of the incised river. A general plant list for the project site is located in **Appendix II**.

No noxious weeds were evidenced at the time of this survey on June 8, 2004. During construction noxious weed colonization is a potential problem as the project will disturb the soil, allowing for prime noxious weed germination ground. If noxious weeds are evidenced during construction, then control and spread prevention measures will be implemented. The control measures may include manual or chemical methods. Spread prevention measures will include washing vehicles and equipment and flagging the area for minimal traffic.

No threatened or endangered plants were exhibited within the project site, according to the plant survey on June 8, 2004. The plant survey was conducted by trained botanists from Rabe Consulting. The survey consisted of visual inspection of the entire project area.

Noxious Weeds

No noxious weeds were evidenced in the project vicinity at the time of the survey on June 8, 2004. The following plants, listed on the Oregon State noxious weed list, are known to exist in Lake County: Mediterranean Sage (*Salvia aethiopsis*), Yellow Starthistle (*Centaurea solstitialis*), Hoary cress/Whitetop (*Cardaria draba*), Dyers Woad (*Isatis tinctoria*), Spotted Knapweed (*Centaurea maculosa*), Russian Knapweed (*Acroptilon repens*), Diffuse Knapweed (*Centaurea diffusa*), Dalmation toadflax (*Linaria genistifolia*), Yellow toadflax (*Linaria vulgaris*). For a complete noxious weed list of Lake County see **Appendix III**. Noxious weed information was provided by the OSU Extension Service in Lakeview, Oregon (2004).

Aquatic Species Habitat

The Paisley Town Weir currently completely blocks aquatic species passage to suitable habitat in the upper Chewaucan River. The weir also has blocked silt passage down stream, lowering the quality of the habitat downstream. The portion of the river immediately down stream of the weir is almost devoid of sediment and is eroded down to a clay deposit, due to a headcut migrating upstream to the existing weir.

The channel is currently incised by up to 15 feet below the existing weir, restricting the pool-riffle sequences and flood plain. These restrictions reduce aquatic spawning and habitat availability. The channel has an existing gradient of 2-4% within the project area above the existing weir. The gradient below the existing weir within the project area is 1-2%. There is a steep gradient at the existing weir (15 foot drop). The channel width ranges from 24-60 feet. The widest area is located just upstream of the existing weir. The narrowest areas are on the upstream portions of the project areas.

Cultural Resources

Complete pedestrian surveys of the proposed project area were conducted in May of 2004 by US Forest Service. Survey results were sent to SHPO (State Historic Preservation Office). Complete report is filed at the Paisley Ranger District.

IV. DIRECT AND INDIRECT EFFECTS

The Proposed Action and "No Action" alternative would have environmental effects for this reach of the Chewaucan River and the surrounding areas.

A. UNAFFECTED RESOURCES

The following resources are either not present or would not be affected by the proposed action or the alternative:

Areas of Critical Environmental Concern, prime or unique farm lands, Native American religious or cultural concern, Native American traditional uses, grazing, special status plant species, solid or hazardous wastes, Wild and Scenic Rivers, air quality, Wilderness/WSA's, visual resources, paleontology, minority populations and low income populations (environmental justice). There would be no adverse impact to exploration and development of energy resources under the proposed action or the alternative.

B. PROPOSED ACTION AND ALTERNATIVE

Hydrology

The Proposed Action would eliminate the need for added energy dissipation features and the stream will be able to function as naturally as possible with the proposed diversion structure. The overall stream system will function more like a healthy stream and the sediment transport mechanism will be restored. The channel downstream of the existing weir will have an opportunity to stabilize. The diverted water will be delivered to users via a pipeline, reducing the amount of seepage loss and the ditch bank failures associated with diversion channels along the Chewaucan River.

The proposed condition results from HEC-RAS modeling are as follows: They show decrease in stream velocities. These decreases would be evidenced just downstream of the removed town weir and just upstream of the town weir as a result of the proposed smaller rock weirs. The water surface elevations would be slightly elevated at the proposed diversion structure. Surface water elevation decreases would be evidenced in the area of the existing town weir.

HEC-RAS modeling was conducted on the proposed site design by HDR Engineering. This hydrologic modeling will estimate the flow changes as a result of the proposed action implementation.

The “no action” alternative would have a negative effect on hydrology leaving a natural sediment blocking structure in place. The “no action” alternative would not address the headcut, just downstream of the weir. Maintaining the incision from the headcut would not improve fish habitat, because flows will still have an increased velocity, development of stream meanders would be restricted and riffles/pools would not be able to develop.

Water Quality

The Proposed Action would likely have locally beneficial impacts on channel form (i.e., reduced width to depth ratios) that would reduce the rate at which the water warms by narrowing and deepening the channel. Sediment control in an alluvial fan system such as the Chewaucan River is extremely important. The damage to the channel below the existing weir, the presence of the dikes along the channel all point to flooding and sediment management issues. By installing an at grade non-barrier diversion structure, a fish screen, and stream rehabilitation measures, the Chewaucan River as a whole can function more like a natural alluvial fan system.

The Proposed Action will install a series of small check dams, designed to allow aquatic migration, placed within the Chewaucan River from approximately 1300 feet downstream of existing weir to approximately 2600 feet upstream of the Mill Street Bridge. It is likely that the small rock check dams’ effect on water temperature due to a decreased channel width to depth ratio might be offset by the small rock check dams’ effect on water temperature due to decreasing stream velocities, especially at low flows during the summer, when it is most critical. Also, it is likely most of the increase in water temperature has already occurred by the time the water gets to the vicinity of the existing weir and neither slowing water velocity nor slightly increasing stream depth will any real affect one way or the other on water temperature. Work on improving riparian vegetation and stream shading in the upper watershed is the most effective way to maintain stream temperatures (decrease heating from direct solar radiation).

The Proposed Action will improve riparian vegetation and shading opportunities. The increased riparian vegetation is due to the restored channel having the opportunity for a wider riparian area. Since the channel will be narrower and deeper, shade from the riparian area will reach a greater percentage of the stream. Improved riparian vegetation and shading will decrease, or at least maintain (keep from increasing), water temperature in this reach of the Chewaucan River.

Potential short-term impacts associated with project implementation include introduction of fine sediment during in stream work, fill removal and replacement, and runoff from disturbed areas. These impacts will be mitigated through use of washed boulders and rock and silt screens and

sediment fencing as needed. Mitigation will be completed by construction contractors and Bagley Ditch Corp.

The “no action” alternative would have a negative effect on water quality leaving a barrier structure that slows and widens the river which leads to warming of the water. This alternative would not increase opportunity for additional riparian vegetation or shading.

Another negative effect of the “no action” alternative is the risk of a catastrophic failure of the weir. Catastrophic weir failure would undoubtedly have both short and long term effects on water quality (turbidity) due to an immediate release of sediment stored behind the weir, to long term movement of fine-coarse sediment through the system, and channel destabilization/modification.

Transportation and Roads

The Proposed Action and the alternative would have no effect on existing transportation systems except for temporary closure of the frontage road during construction. Community will have alternate access routes, so road closure will not restrict access.

The “no action” alternative would have no effect on the transportation and roads unless the weir fails and existing roads are washed out.

Wildlife

There would be some short-term disturbances to any local wildlife species caused by construction of the Proposed Action. Wildlife, especially birds, will be affected by the use of a pipeline instead of the existing ditch. Currently, seepage from the existing irrigation ditch creates a narrow riparian vegetation band adjacent to the downhill side of the ditch. The pipeline would not maintain the seepage and the riparian vegetation would find the current habitat unsuitable as the hydrology would not meet riparian requirements. Loss of this narrow riparian vegetation band would reduce bird nesting and perching habitat and reduce food sources. However, returning the river to historic conditions will enhance in-stream habitat and riparian vegetation along the river banks. The benefit from the enhanced habitat outweighs the slight impact of removing a man-made wetland used for irrigation.

The “no action” alternative would have a positive effect by maintaining the narrow riparian area created by seepage from the irrigation ditch. Maintenance of this riparian area would allow for continued wildlife habitat and food source. The “no action” alternative would have a negative impact on local wildlife by limiting a potential food source with the in-stream area.

Threatened and Endangered Species

The Proposed Action would likely have a long-term beneficial effect on the bald eagles (*Haliaeetus leucocephalus*) suspected in the area, by increasing the amount of aquatic species upstream of the existing weir and increasing

feeding resources. In the short-term, project construction may disturb some small mammal feeding resources located within the staging areas.

The “no action” alternative would restrict the fish feeding resources for bald eagles in the project vicinity as some fish are not able to migrate up the Chewaucan River, passed the existing weir.

Vegetation

The Proposed Action will have a short-term negative effect on the vegetation at the staging sites and existing removal weir location. The vegetation in these areas will be disturbed during construction. Once construction is completed these areas will be revegetated with native plants. Depending on the location the species will be upland or facultative wetland plants.

The Proposed Action will also have both positive and negative long-term effects. The positive long-term effects will include healthier riparian vegetation along the banks of the project area. The existing riparian vegetation is not particularly degraded, but improving the channel morphology would have a positive effect on the riparian vegetation. A channel at grade with bank full, instead of incised, would allow for more spreading of flood waters. As the flood waters spread, the hydrology would be conducive for additional riparian vegetation establishment.

The long-term negative effects of the Proposed Action include dewatering riparian vegetation adjacent to the down-hill side of the irrigation ditch. This ditch will be piped within the Proposed Action, eliminating the seepage from the irrigation ditch. Without this seepage the riparian vegetation will not be able to survive, because the water necessary to support riparian vegetation will not be available. Some riparian vegetation will also be lost location of the new diversion. This is caused by the placement of the diversion footing. The area will be small providing minimal loss in vegetation. The loss of these riparian vegetation areas is more than offset by the gain in riparian vegetation along the Chewaucan River within the project area.

The “no-action” alternative would have neutral effect on the riparian vegetation adjacent to the irrigation ditch and at the footing of the new diversion. The “no-action” alternative would not disturb the existing vegetation in these locations and would not alter the hydrology of these locations. The “no-action” alternative would not increase riparian vegetation areas along the reach of the Chewaucan River within the project area. This alternative would keep the vegetation restricted to the incised bank of the stream and not allow for expanded areas of the riparian vegetation. This is because flood waters will not expand in a flood plain area, but will remain restricted to the incised channel.

Noxious Weeds Risk Assessment

The Proposed Action, because of ground disturbances, could create conditions that favor the invasion or spread of noxious weeds. The removal of the weir and fill material in staging areas and placement of the pipeline under the Proposed Action may create the disturbed conditions under which noxious

weeds have a competitive advantage. In particular, the Canada thistle and Hoary cress are problem weeds and will be monitored by the Bagley Ditch Corp. If noxious weeds are evidenced, they will be managed mechanical or spraying methods to minimize spread and colonization.

The “no action” alternative would not create any additional disturbed conditions under which noxious weeds have a competitive advantage.

Aquatic Species Habitat

A significant benefit of the Proposed Action will be improved aquatic species habitat. Not only will the barrier to upstream passage be removed, but also the proposed diversion system will allow for natural passage upstream without the use of a fish ladder. Those fish passing downstream will no longer become trapped in two separate, unscreened irrigation diversions, but will be bypassed back to the river via the screening system at one consolidated point of diversion. The affected reach of the river will have an average grade of two percent and will contain rock check dams throughout its length – providing habitat for fish and other aquatic species. The use of root wads will protect the rock weirs and abutments without the need for full bank riprap. The root wads will be willows from neighboring sites, according to the site concept plan. Habitat elements including boulder check dams will be installed for fisheries enhancement for Redband trout and other native species. The check dams will bring the river to grade, but not be so tall as to impede aquatic migration. The check dams will also increase the riffle-pool sequences to allow for additional fish habitat. The Proposed Action concept is suggests a final gradient of 2% across most of the project reach with some areas near the existing weir being 4%. The large drop at the existing weir will be eliminated with implementation of the proposed action.

The Proposed Action would have a limited, short-term negative effect on the aquatic species habitat. Some in stream work will be done including but not limited to removal of the existing weir and the placement of rock stabilization structures. However, any negative affects are far outweighed by the benefit of expanded habitat and spawning grounds. To mitigate the short-term impacts of construction on aquatic species habitat the following actions will be implemented: 1) Construction in-stream will occur during in-stream work period; 2) Rock and boulders placed in-stream will be washed; 3) Silt screens and sediment fencing will be used as needed. Mitigation will be completed by construction contractors and Bagley Ditch Corp.

The “no action” alternative will have an exceedingly negative impact on aquatic species habitat by leaving in place a barrier structure that completely blocks upstream habitat and spawning areas from redband trout and other aquatic species. The degraded stream channel does not provide appropriate riffle-pool sequences. The “no action” alternative does not meet fish passage regulations for the State of Oregon. This alternative would not address the 15 foot drop in stream bed level at the site of the existing weir. The gradient would remain to steep at this location to allow aquatic species migration.

Cultural Resources

The Proposed Action will be ground disturbing. An easement width of 80 feet will be permanently assigned along the length of the project for pipeline placement. Some ground disturbance will occur at locations along the riverbank with the placement of rock check dams. All of the area has been previously disturbed, either as part of the existing irrigation ditch system, or with past dike and riverbank work done after major flooding in 1964. When the project is implemented, particular attention will be focused on the possibility of cultural material coming out of any sub-surface excavation activities. On-the-ground monitoring will be used to address these cultural resource concerns. In the event that cultural resources are discovered during the course of the project, work will be stopped while measures are developed and implemented. These measures would allow for the mitigation of any adverse effects resulting from project implementation.

The “no action” alternative will have no effect on the cultural resources unless there is a catastrophic failure of the weir in which case any unknown number of artifacts and sites could be washed away.

V. SUMMARY

The above provides an analysis of the Proposed Action and “no action” Alternatives for the Paisley Town Weir Project. The Proposed Action includes removing an existing weir, placing 14-16 small check dams and installing a non-barrier diversion structure, fish screen and delivery pipeline. The “no action” alternative would leave the existing weir in place. The above analysis presents negative and positive impacts of both alternatives.

VI. CONSULTATION AND COORDINATION

A. LIST OF PREPARERS

Rabe Consulting contact: Andréa Rabe, Dan O'Connor

US Forest Service lead federal agency contact: William Aney.

US Forest Service, Fremont-Winema National Forest Interdisciplinary Review Team:

Martina Keil - Range specialist

Mike Nevill - Botany

Katie Blazer- NEPA coordinator

Rich Pyzik - Fisheries Biologist

Amy Markus- North Zone Biologist

David Pawelek - Forest Hydrologist, Fremont National Forest

William Aney - Paisley District Ranger

Jerry Haugen - Forest Environmental Coordinator

Brent Frazier - Forest Biologist

B. ESA CONSULTATION

Oregon Department of Fish and Wildlife contact: Curtis Edwards.

United States Department of Fish and Wildlife contact: Allan Mauer.

C. PUBLIC PARTICIPATION

Proposed action was sent to the USFS scoping list. A public scoping period ran from May 7 through May 31, during this time no public comment was received. Discussions were held within in the Town of Paisley with the Chewaucan Watershed Council, Lake County Resources Initiatives, community members and local water users, Bagley Ditch Corp., and the Fremont-Winema Resource Advisory Council to develop the proposed action. HDR Engineering, Oregon Water Resource Department, Oregon Department of Fish and Wildlife, US Forest Service Fremont National Forest were consulted for input on the technical aspects of the proposed action.

The project was listed on the Fremont-Winema Schedule of Proposed Actions beginning with the Summer 2004 issue. The information on the project was also posted on the world-wide-web at <http://www.fs.fed.us/r6/winema/management/analyses/paisleyweir/> on August 31, 2004 with an e-mail link to which public comments could be sent.

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Appendix I:

FEDERALLY LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES,
CANDIDATE SPECIES AND SPECIES OF CONCERN THAT MAY OCCUR
IN LAKE COUNTY

LISTED SPECIES^{0/}

Mammals

Canada lynx^{1/} *Felis lynx canadensis* T

Birds

Bald eagle *Haliaeetus leucocephalus* T

Fish

Modoc sucker *Catostomus microps*
Warner sucker *Catostomus warnerensis* CH
Hutton Springs tui chub *Gila bicolor* ssp. T
Foskett speckled dace *Rhinichthys osculus* ssp. T
Bull trout (Klamath Basin pop)^{2/} *Salvelinus confluentus* T

PROPOSED SPECIES

None

CANDIDATE SPECIES

Birds

Yellow-billed cuckoo *Coccyzus americanus*

Amphibians and Reptiles

Columbia spotted frog^{3/} *Rana luteiventris*

SPECIES OF CONCERN

Mammals

Pygmy rabbit *Brachylagus idahoensis*
Pale western big-eared bat *Corynorhinus (=Plecotus) townsendii*
pallascens
Pacific big-eared bat *Corynorhinus (=Plecotus) townsendii*
townsendii
California wolverine *Gulo gulo luteus*
Silver-haired bat *Lasionycteris noctivagans*
Small-footed myotis (bat) *Myotis ciliolabrum*
Long-eared myotis (bat) *Myotis evotis*
Long-legged myotis (bat) *Myotis volans*
Yuma myotis (bat) *Myotis yumanensis*
California bighorn *Ovis canadensis californiana*

Birds

Tircolored blackbird *Agelaius tricolor*
Northern goshawk *Accipiter gentilis*

Western burrowing owl
Upland sandpiper
Ferruginous hawk
Greater sage grouse
Black tern

Athene cunicularia hypugea
Bartramia longicauda
Buteo regalis
Centrocercus urophasianus
Chlidonias niger Olive-sided flycatcher

Contopus cooperi (= *borealis*)

Yellow rail
Willow flycatcher
Yellow-breasted chat
Western least bittern
Lewis' woodpecker
Mountain quail
White-headed woodpecker
Purple Martin
White-faced ibis

Coturnicops noveboracensis
Empidonax traillii adastus
Icteria virens
Ixobrychus exilis
Melanerpes lewis
Oreortyx pictus
Picoides albolarvatus
Progne subis
Plegadis chihi

Amphibians and Reptiles

Northern sagebrush lizard

Sceloporus graciosus graciosus

Fish

Goose Lake sucker
Sheldon tui chub
Oregon Lakes tui chub
Summer Basin tui chub
Catlow tui chub
Pacific lamprey
Goose Lake lamprey
Pit roach
Interior redband trout
Catlow Valley redband trout
Goose Lake redband trout
Warner Valley redband trout

Catostomus occidentalis lacusanserinus
Gila bicolor eurysona
Gila bicolor oregonensis
Gila bicolor ssp.
Gila bicolor ssp.
Lampetra tridentata
Lampetra tridentata ssp.
Lavinia symmetricus mitrulus
Oncorhynchus mykiss gibbsi
Oncorhynchus mykiss ssp.
Oncorhynchus mykiss ssp.
Oncorhynchus mykiss ssp.

Invertebrates

Abellan hydropsyche caddisfly
Montane peaclam

Hydropsyche abella
Pisidium ultramontanum

Plants

Crosby's buckwheat
Cusick's eriogonum
Prostrate wild buckwheat
Grimy ivesia
Venator Canyon ivesia
Playa phacelia
Oregon semaphore grass
Columbia cress

Eriogonum crosbyae
Eriogonum cusickii
Eriogonum prociduum
Ivesia rhypara var. *rhypara*
Mimulus evanescens
Phacelia inundata
Pleuropogon oregonus
Rorippa columbiae

(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.

(CF) - Candidate: National Marine Fisheries Service designation for any species being considered by the Secretary for listing for endangered or threatened species, but not yet the subject of a proposed rule.

*** Consultation with National Marine Fisheries Service required.^{0/}*

U. S. Department of Interior, Fish and Wildlife Service, October 31, 1999, Endangered and Threatened Wildlife and Plants, 50 CFR 17.11 and 17.12.

^{1/} Federal Register, Vol. 65, No. 58, April 24, 2000, Final rule - Canada Lynx

^{2/} Federal Register Vol. 63, No. 111, June 10, 1998, Final Rule-Columbia River and Klamath River Bull Trout

^{3/} Federal Register Vol. 66, No. 210, October 30, 2001, Notice of Review-Candidate or Proposed Animals and Plants

Lake County: updated 06/05/02

(Allen Mauer, Bend Field Office, USFWS. 2004)

Appendix II:

Plant Survey Species List

Upland Plants:

Trees

<i>Juniperus occidentalis</i>	Western juniper
<i>Pinus ponderosa</i>	Ponderosa pine

Shrubs

<i>Artemisia cana</i>	Silver sagebrush
<i>Artemisia tridentata</i>	Big sagebrush
<i>Cercocarpus ledifolius</i>	Mountain mahogany
<i>Chrysothamnus nauseosus</i>	Rubber rabbitbrush
<i>Chrysothamnus viscidiflorus</i>	Green rabbitbrush
<i>Purshia tridentata</i>	Bitterbrush
<i>Ribes cereum</i>	Golden currant
<i>Sambucus cerulea</i>	Elderberry

Forbs

<i>Erodium spicatum</i>	Filaree
<i>Eriophyllum lanatum</i>	Oregon Sunshine
<i>Castilleja</i> sp.	Indian paint brush
<i>Cirsium canescens</i>	Platte thistle
<i>Lactuca serriola</i>	Prickly lettuce
<i>Lupinus</i> sp.	Lupine
<i>Medicago sativa</i>	Alfalfa
<i>Penstemon duustus</i>	Hotrock Penstemon
<i>Sysimbrium altissimum</i>	Tumble mustard
<i>Zigadenus venenosus</i>	Death camas

Grasses/Rushes/Sedges

<i>Phleum pratense</i>	Timothy
<i>Bromus tectorum</i>	Cheat grass
<i>Elymus alymoides</i>	Bottlebrush Squirreltail
<i>Elytrigia repens</i>	Quack grass
<i>Festuca idahoensis</i>	Idaho fescue
<i>Poa pretensis</i>	Kentucky bluegrass
<i>Pseudoroegneria spicata</i>	Bluebunch wheatgrass

Riparian Plants:

Trees

<i>Populus</i> sp.	Hybrid poplar
<i>Robinia pseudoacacia</i>	Black locust
<i>Rosa gymnocarpa</i>	Wild rose
<i>Salix lasiolepis</i>	Willow
<i>Salix lasiandra</i>	Pacific willow
<i>Salix lucida</i>	Shining willow

Forbs

Adolphia californica
Amsinckia menziesii
Chaenactis douglasii
Crataegus suksdorfii
Medicago sativa
Melilotus officinalis
-Mertensia ciliata
Rumex maritimus
Tragapogon porrifolius
Vicia americana

California adolphia
Rigid fiddleneck
Dusty Maiden
Klamath hawthorn
Alfalfa
Sweet clover
Streamside bluebells
Golden dock
Purple salsify
American vetch

Grasses/Rushes/Sedges

Eleocharis acicularis
Equisetum hyemale.
Juncus balticus
Carex sp.

Spike rush
Scouring rush
Baltic rush
Sedge

Appendix III:

Lake County Noxious Weed List

<i>Bassia hyssopifolia</i>	Five-hook bassia
<i>Cardaria draba</i>	Hoary cress
<i>Carduus nutans</i>	Musk thistle
<i>Centaurea diffusa</i>	Diffuse knapweed
<i>Centaurea maculosa</i>	Spotted knapweed
<i>Centaurea repens</i>	Russian knapweed
<i>Centaurea solstitialis</i>	Yellow starthistle
<i>Centaurea virgata</i>	Squarrose knapweed
<i>Chondrilla juncea</i>	Rush skeletonweed
<i>Cicuta douglasii</i>	Western waterhemlock
<i>Cirsium arvense</i>	Canada thistle
<i>Conium maculatum</i>	Poison hemlock
<i>Convolvulus arvensis</i>	Field bindweed
<i>Dipsacus fullonum</i>	Teasel
<i>Euphorbia esula</i>	Leafy spurge
<i>Hypericum perforatum</i>	St. Johnswort (Klamath Weed)
<i>Isatis tinctoria n</i>	Dyer's woad
<i>Kochia scoparia</i>	Kochia
<i>Linaria genistifolia</i>	Dalmation toadflax
<i>Lythrum salicaria</i>	Purple Loosestrife
<i>Onopordum acanthium</i>	Scotch thistle
<i>Ranunculus repens</i>	Creeping Buttercup
<i>Salvia aethiopsis</i>	Mediterranean sage
<i>Senecio jacobaea</i>	Tansy ragwort
<i>Tribulus terrestris</i>	Puncturevine
<i>Xanthium spinosum</i>	Spiny cocklebur