

FINAL ENVIRONMENTAL ASSESSMENT
WETLAND IRRIGATION / RESTORATION PROJECT
COUGAR RESERVOIR
LANE COUNTY, OREGON

INTRODUCTION

Cougar Reservoir is formed by a dam on the South Fork of the McKenzie River in the upper McKenzie watershed (Figure 1). The proposed reservoir-bed work site is a shallow, 20-acre basin just north (downstream) of where Smith Creek enters the reservoir near the upper end of the reservoir (Figure 2). The reservoir will be drawn down until 2005 for construction downstream at Cougar Dam. This drawdown provides an opportunity to conduct habitat improvements. Installation of a temporary irrigation system and native wetland plantings is proposed. The irrigation system would be removed before normal pool elevations are again maintained, and the wetland plantings would be expected to survive.

The basin supports a significant established population of native sedge (*Carex aperta*) on a gentle slope that starts at full pool elevation and drops to approximately -50 ft near the riverbed. This plant community has been established and maintained under years of seasonal inundation by the reservoir. An old highway runs along the river in this section making the area easy to access with equipment, but no public motor vehicle access is provided.

NEED AND PURPOSE FOR ACTION

The entire reservoir lies within the Willamette National Forest, and is managed by the McKenzie River Ranger District. Forest lands to the east of the work-site lie within the Three Sisters Wilderness Area; to the west are lands included in the Central Cascades Adaptive Management Area. The Northwest Forest Plan (1994) p. D-12 emphasizes the importance of "Intensive research on ecosystem and landscape processes and its application to forest management in experiments and demonstrations at the stand and watershed level; approaches for integrating forest and stream management objectives and on implications of natural disturbance regimes; and management of young and mature stands to accelerate development of late-successional conditions.....". Several small recreation areas in the vicinity provide access to the reservoir and day-use facilities (Figure 3).

Water levels in Cougar Reservoir will be lowered and held at or near stream bed elevation (1450 ngvd) until the spring of 2005, to allow construction of temperature control facilities at the dam. Normal operation of the dam since construction in 1963 includes refilling of the reservoir by May 15th with subsequent lowering to provide flood control storage commencing in September. This water level regime creates harsh conditions for survival of wetland plants in the reservoir-bed; plants are inundated during their growing season and then exposed to drought conditions during the end of the summer. In general, few native plants survive the unnatural hydrology imposed by flood control operations, although several large sedge stands occur in the Cougar reservoir-bed. During the two growing seasons between 2003 and 2005 it is expected that a significant amount of upland vegetation will become established within the exposed draw down zone of the reservoir, yet the majority of it will not survive refilling the pool in 2005. Willamette Valley Projects and McKenzie River Ranger District biologists reviewed a number of sites within the Cougar reservoir-bed during March 2002 for the purpose of identifying wetland and riparian habitat development opportunities that could be initiated during the extended draw-down. It's hoped that given an opportunity to grow without inundation for 2 years,

riparian vegetation will establish to the point where it will survive subsequent flooding. There is a general consensus that the establishment and maintenance of reservoir-bed vegetation where practical will result in significant fish, wildlife and water quality benefits.

The proposed wetland/riparian enhancement project will also attempt to insure the continued health and vigor of an existing sedge plant community, which may be affected by the three successive dry growing seasons anticipated due to reservoir draw down. Additionally, the proposal includes measures to manage invasive exotic species such as reed canary grass (*Phalaris arundinacea*) and to further diversify the vegetated zone by establishing a flood tolerant woody vegetation component of native willows which may be expected to survive and continue to grow following resumption of normal water level management in the reservoir.

PROPOSED ACTION AND ALTERNATIVES

The proposed action is to install an irrigation system capable of irrigating the approximately 20-acre vegetation zone at the Smith Creek site, using water drawn from the adjacent South Fork of the McKenzie River. The Corps will work in cooperation with the McKenzie River Ranger District to implement this action. Smith Creek enters the South Fork of the McKenzie River just upstream of the proposed work site. The irrigation system will be operated through the dry part of the growing season, i.e., June through September of 2003 and 2004. A total of 12 to 15 8-hour days of irrigation is planned per year. The vegetation within the existing sedge zone will be augmented during spring of 2003 by the planting of several hundred ball and bare root willows within the upper reaches of the site, between the full pool level and approximately –20 feet where survival of the established plantings is expected to be greatest. The availability of nursery stock ranging in size from 1 to 3 gallons appears to be good for willow species including *Salix sitchensis*, *Salix scouleriana* and *Salix lasiandra*. There is also opportunity for growing rooted stock of other native species exhibiting flood tolerance.

Exotic species, such as reed canary grass, will be controlled by grubbing. Labor for planting and maintenance of vegetation within the irrigation plot will be provided with the assistance of the McKenzie River Ranger District through their agreement with the Lane County Forest Work Camp.

The irrigation system will be portable with the exception of approximately 1700 feet of 6 inch PVC pipe with risers buried in a trench along an approximate – 30 foot contour line through the site. A trailer mounted 8-inch diesel pump with revolving screen draft tube assembly and six aluminum tripod mounted Nelson gun sprinklers served by 3-inch aluminum surface laterals will comprise the portable components that can be mobilized on site as needed. Placement of the draft tube and screen along the shore of the South Fork of the McKenzie River will involve excavation of 10 to 15 cubic yards of material. Set up, operation and take down of the portable system components should be accomplished in one day by two laborers. Installation of the 6-inch PVC main line will require the excavation and back filling a 12-inch wide trench approximately 18-inch deep. Concrete thrust blocks will be necessary at several locations. Additionally, a draft screen sump and/or graded coarse rock filter will need to be excavated and maintained in the bed of the river adjacent the pump location to facilitate submersion of the draft tube screen. It is anticipated that the pump will run not more than 8 hours at a time, for an estimated 12 to 15 days per year. Irrigation will commence early enough to prevent water stress, probably sometime between late May and late June, depending on the weather, and end by October. Early and late season watering may occur less than once a week. The pump will have a silencer installed to reduce noise during operation, and a baffle will be constructed to direct sound towards the south away from the hillsides.

Concurrence to install the draft tube outside the in-water work period was obtained from the Oregon Department of Fish and Wildlife. A water withdrawal permit for the irrigation water was obtained from the Oregon Department of Water Resources.

Plantings are expected to survive after the reservoir is filled because plantings will be established and close to the water table.

Alternative sites were considered. The current site was chosen because of easy accessibility and habitat improvement potential.

The No Action alternative would not improve habitat on this site and could lead to greater temporary invasion of unwanted non-native upland plants until normal pool levels are again maintained.

AFFECTED ENVIRONMENT

The proposed reservoir-bed work site is a shallow, 20-acre basin just north of where Smith Creek enters the reservoir near the upper end of the reservoir. The basin is now vegetated primarily with sedge. Numerous large tree stumps are present, resulting from salvage of trees when Cougar Dam was built.

Several listed species could potentially occur within or near the work area. Potential impacts to these species were assessed in a Biological Assessment submitted to the U.S. Fish and Wildlife Service dated January 22, 2003. These include the northern spotted owl (*Strix occidentalis*), bald eagle (*Haliaeetus leucocephalus*), and bull trout (*Salvelinus confluentus*). In addition to these three species, eighteen species on the Regional Forester's sensitive species list, Willamette National Forest, were addressed in the Biological Assessment.

A total of 10 to 15 cubic yards of mostly material (mostly cobbles) will be removed from the river margin to place the draft tube and screen in order to pump water out of the stream for irrigation. Installation of the 1,700-foot long, 6-inch PVC mainline will involve excavation of about 100 cubic yards of soil that will then be placed back over the buried mainline.

Two campgrounds are in the vicinity of the proposed project: the Slide Creek campground located about ½ mile north of the worksite and the Cougar Crossing campground located about ¾-1 mile south of the worksite. Access to the worksite is closed to motor vehicles but camping in this area is allowed.

ENVIRONMENTAL CONSEQUENCES

Environmental consequences during construction are expected to be negligible and short and long-term environmental benefits are the goals of this project. Short-term benefits include reduction of likelihood of invasion of upland weeds into the dewatered 20-acre work area and long-term benefits include creation of permanent riparian habitat.

Any excess cobble material from excavation of the screen pit will be used to backfill around the screen and/or be distributed in a manner around the pit to maintain adequate surface water level over the top of the screen. The coarse cobble material may function as a preliminary surface screen for any debris before it reaches the revolving screen. Any silty or organic material, which is expected to be very minor, will be placed on the bank and be used to cover the draft tube leading up to the pump. Upon screen removal, the pit will be backfilled with cobble material. Cobble material will be temporarily

stored in a nearby upland location. Minor short-term increases in turbidity may result from this excavation and material replacement.

The pump will be operated from a trailer with a 100-gallon diesel fuel tank. It will be removed from the worksite at the end of each day of use. A 30-millimeter thick plastic-lined spill pad will be placed beneath the trailer to provide containment of possible leaks or spills during operation. The tank will be fueled off-site between days of operation. The tank will be filled with the minimum amount of fuel needed for each day of operation.

A Corps environmental inspector will be on-site to supervise the installation of the mainline and operation of the system and a fish biologist will be on-site to monitor and assist during installation of the draft tube and screen assembly.

The possibility of runoff during construction has been discussed with the McKenzie River Ranger District. Based on their recommendations, application will be limited to a maximum of 2 inches per hour to maximize infiltration and minimize runoff (1 inch per hour will be the limit on steeper slopes and shallower soil areas near the normal high water line). Application rates will be lowered if observations reveal excess runoff. Corps' monitors will be on-site at all times during days of operation and will monitor the pump and manage gun movements in accord with the irrigation plan.

The system will be capable of taking 620 gallons per minute at full operating capacity. Total quantities for each irrigation year will not exceed 20 acre-feet. A license for removal of water for irrigation purposes has been issued by the Oregon Water Resources Department.

Operation of the pump is not expected to disturb campers at the nearby Slide Creek and Cougar Crossing campgrounds. Hours of operation were coordinated with the U.S. Forest Service. The pump will only operate during daytime hours (about 8am to 4pm). A hospital-grade silencer will be retrofitted to the pump and will decrease decibel levels 30 to 40% and a baffle will be installed to direct sound away from the campgrounds. Noise from the pump is not expected to be noticeable at the nearby Slide Creek and Cougar Crossing campgrounds because of the silencer and because these campgrounds are sheltered from the noise source by topography and vegetation.

COORDINATION

This Environmental Assessment was prepared to address the requirements of the National Environmental Policy Act and was issued for 30-day public and agency review on March 26, 2003 under Public Notice CENWP-PM-E-03-02.

CONSULTATION REQUIREMENTS

- a. Clean Air Act of 1970, as amended: The proposed action would not affect clean air.
- b. Clean Water Act of 1977 (33 U.S.C. 1344): There would be no adverse affects on water quality from implementation of the proposed work.

This work is covered under Nationwide Permit Number 27 for which a state water quality certificate was previously issued.

- c. Coastal Zone Management Act: Not applicable.

- d. Endangered Species Act of 1973, as amended: A Biological Assessment, was prepared for the U.S. Fish and Wildlife Service by the Portland District and concurrence was obtained via a letter dated March 19, 2003. The project will have no effect on fish species managed by NOAA Fisheries.
- e. Fish and Wildlife Coordination Act: The proposed action was coordinated with the U.S. Fish and Wildlife Service by the Portland District and concurrence was obtained via a letter dated March 19, 2003.
- f. Marine Protection, Research, and Sanctuaries Act of 1972, as amended: No marine resources would be affected by the proposed action.
- g. Natural Historic Preservation Act: A Corps' Cultural Resource Specialist conducted a cultural resource survey of the proposed project area and determined that cultural resources would not be affected by the proposed action.
- h. Executive Order 11988, Flood Plain Management, 24 May 1977: The proposed action would have no effect on flood plains.
- i. Executive Order 11990, Protection of Wetlands, 24 May 1977: The proposed action would have minor temporary effects on waters of the U.S. These effects would include removal of 10 to 15 cubic yards of material for installation of a draft tube and screen to extract water and trenching and backfilling for the irrigation line.
- j. Analysis of Impacts on Prime and Unique Farmlands: Not applicable.
- k. Comprehensive Environmental Response, Compensation, and Liability (CERCLA) and Resource Conservation and Recovery Act (RCRA). There is no indication that any hazardous, toxic and radioactive waste (HTRW) are in the vicinity. Presence of HTRW would be responded to within the requirements of the law and Corps regulations and guidelines.