

AMAZON BASIN/EUGENE WETLANDS - PHASE I I

9205900

SHORT DESCRIPTION:

Continue implementation of management activities as defined in the Management Plan for the Willow Creek Natural Area for the following target species: beaver, black capped chickadee, red-tailed hawk, valley quail, western meadowlark, yellow warbler, and western pond turtle.

SPONSOR/CONTRACTOR: TNC

The Nature Conservancy

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GOALS

GENERAL:

Maintains biological diversity, Provides needed habitat protection

WATERSHED:

Coordination

WILDLIFE:

Habitat, O&M

NPPC PROGRAM MEASURE:

11.3F.1

BIOLOGICAL OPINION ID:

Duncan/Cohen letter

TARGET STOCK

Black-capped Chickadee

Western Pond Turtle

Yellow Warbler

Red-tailed Hawk

Western Meadowlark

Valley Quail

Beaver

LIFE STAGE

MGMT CODE (see below)

BACKGROUND

LAND AREA INFORMATION

Subbasin:

Willamette River

Land ownership:

Private plus BPA easement

Acres affected:

329

Habitat types:

Habitat types include riparian/beaver ponds, forested wetland, wet prairie, upland prairie, oak woodland, and coniferous forest.

HISTORY:

Habitat evaluations and an environmental assessment were completed for the project in 1995. The Nature Conservancy and Bonneville Power Administration acquired fee ownership and conservation easements (respectively) on 329 acres. The conservation easements cost \$1,112,500. The site is part of the larger West Eugene Wetlands managed by the Bureau of Land Management, City of Eugene, and The Nature Conservancy. Project partners have provided staff expertise, funding, and volunteer assistance to reduce management costs for the site. The first year of management implementation was 1996, and was budgeted at \$46,538.97.

BIOLOGICAL RESULTS ACHIEVED:

- 1) Protection of 329.36 acres providing a baseline of 575.39 Average Annual Habitat Units for the following target species: beaver, black capped chickadee, red-tailed hawk, valley quail, western meadowlark, yellow warbler, and western pond turtle.
- 2) Initiation of management actions to maintain and increase habitat units from 575.39 to 814.71 AAHU's as outlined in the Environmental Assessment and Management Plan.

PROJECT REPORTS AND PAPERS:

Bonneville Power Administration, 1995. Willow Creek Wildlife Mitigation Project Final Environmental Assessment, DOE-EA-1023. (This is the Environmental Assessment/Management Plan)

ADAPTIVE MANAGEMENT IMPLICATIONS:

Knowledge gained from this project will be relevant to: 1) managing other Willamette Valley lowland mitigation projects and wildlife habitats; 2) managing mitigation projects in an urban context; 3) evaluating the costs and benefits of conservation easements relative to fee acquisition of mitigation project; and 4) evaluating the costs and benefits and organizational approaches to developing mitigation partnerships with non-profit organizations and local governments.

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:

Increase AAHU's for target species from 575.39 to 814.71 by increasing the area and quality of key habitats for target species.

CRITICAL UNCERTAINTIES:

To date the effectiveness of management methods outlined for improving or enhancing habitat for non-game wildlife species in the Willamette Valley is largely untested.

BIOLOGICAL NEED:

This project has been implemented to partially meet the need for mitigation for wildlife and wildlife habitat adversely affected by the development of Federal hydroelectric projects in the Willamette River drainage. The purposes as identified in the EA of the project are to: provide for protection and improvement of wildlife habitat for mitigation of habitat lost as outlined in the Northwest Power Planning Council's 1994 Columbia River Basin Fish and Wildlife Program, and; be consistent with BPA's obligation under provisions of the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act) of 1980. To achieve these primary purposes and address the biological needs at the site, the following specific goals were established:

- 1) Secure protection for lands necessary to maintain target species and habitats, provide for key ecological processes, and reduce off-site impacts to critical habitat areas;
- 2) Protect important ecological processes that are essential to the long-term ecological viability of the site;
- 3) Manage the area for plant and animal habitat as the highest priority;
- 4) Manage the site to maintain a diversity of native plants and animals, and protect Willamette Valley habitats;
- 5) Manage human use of the site to minimize impacts to wildlife, wildlife habitats, and rare, threatened, and endangered species; and
- 6) Contribute to the protection of rare, threatened, and endangered plant and animal species.

The Willow Creek Natural Area is a mosaic of wet prairie -- riparian forest -- oak woodlands. Historic fire disturbance and seasonal flooding were the key processes that maintained these habitats at the site for the target species and other native animal and plant species. Fire suppression, development in the watershed, and introduction of non-native species has resulted in a loss of habitat quality for the target species identified. To achieve the purpose of the project and the biological needs of the target species, management actions must be implemented to reverse these changes.

HYPOTHESIS TO BE TESTED:

Ho: Maintenance and enhancement work identified in the EA will not increase habitat units for target species. Ha: Maintenance and enhancement work identified in the EA will increase habitat units for target species.

ALTERNATIVE APPROACHES:

Alternative approaches were analyzed in the Willow Creek Wildlife Mitigation Project Final Environmental Assessment.

METHODS:

Habitat management and enhancement activities will employ manual and mechanical (tractor mower, loppers, chain saws, hand saws) removal of invasive non-native species and enhancement of oak woodland habitat structure, and removal of invading woody vegetation. For most of the non-native and native invading species only the above ground portions of plants will be removed. Implementation of vegetation management treatments will be timed to minimize wildlife disturbance and maximize effectiveness of the treatment on target species. Off-site protection planning will incorporate air photo interpretation, GIS mapping, and qualitative evaluations of existing habitat conditions. Water quality assessments will be done by certified water quality testing facilities and on-site evaluation of turbidity using a Hach turbidity meter. Continuously recording rain gages will be used to monitor precipitation. Surface water and ground water will be monitored on a regular basis (monthly) and during specific precipitation events. Monitoring for treatment effectiveness will be based on paired comparisons of data from permanent sampling units using repeated measures analysis and qualitative comparison of photographs from permanent photo-monitoring stations. Population densities of target avian species will be tracked using a series of permanent fixed-radius point count stations.

PLANNED ACTIVITIES

SCHEDULE:

Implementation Phase **Start** 10/1/97 **End** 9/30/98 **Subcontractor**

Task Project Tasks for 1998:

- 1) Implement third year of non-native plant species control to improve habitat for target wildlife species, and rare, threatened, and endangered animal and plant species.
 - 2) Restore 5 acres of grassland habitat for target wildlife species, and rare, threatened, and endangered animal and plant species.
 - 3) Implement first year of habitat management in the oak woodlands according to the completed wildlife habitat assessment to restore optimal structural diversity, increase productivity for target wildlife species, and reduce invasive and non-native plant species.
 - 4) Implement bullfrog control measures in riparian/beaver pond habitats recommended after 1997 pilot study.
 - 4) In cooperation with the City of Eugene, refine and implement watershed level protection efforts for the Willow Creek basin. Work to increase protection of key stream segments, wildlife corridors, and other ecological functions and processes from adverse land use impacts.
 - 5) Monitor hydrologic and water quality parameters critical to the condition.
 - 6) Continue monitoring of populations and/or habitat use for target species and other wildlife species of interest.
 - 7) Conduct defensibility monitoring on the site and complete necessary maintenance/site defensibility activities.
- Significant Changes in Project Activities for 1998 - 2001: None.

CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:

There are no known risks associated with the continuing implementation of this project. Potential environmental impacts to fish and wildlife habitat, fish and wildlife resources, hydrologic resources, air quality, cultural resources, and wetlands and floodplains were identified and addressed in the Environmental Assessment for the project. Most of the impacts identified were positive. Minor short-term impacts to wildlife, wetlands, cultural resources, and air quality could result from implementation of habitat enhancement activities, however, these can be minimized through the proper timing and methodology of the activities. Evaluation of the potential impacts of the project were reviewed by federal, state, local and tribal governments and the public. No new risks have been identified during the implementation phase.

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

Expected performance of target population or quality change in land area affected:

1) Reduction of target non-native plant species abundance and distribution to target control levels.2) Increase of 5 additional acres of wet prairie habitat.3) Increase in the structural diversity and productivity of the oak woodlands habitat for target wildlife species.4) Identification of off-site needs and strategies (priority acquisitions, land use zoning, land management recommendations) for protecting wildlife corridors and existing hydrologic conditions.5) Completion of year of hydrologic monitoring baseline.6) Wildlife population and habitat use data for target species and other wildlife species of interest.7) Protection of habitat quality from disturbance related to unauthorized uses of the site.

Present utilization and conservation potential of target population or area:

In some cases, present utilization of the site by target wildlife species and other wildlife is believed to be below optimal or potential levels due to habitat changes resulting from invasive and non-native plant species. Present utilization is documented in the Willow Creek Wildlife Habitat Evaluation.

Assumed historic status of utilization and conservation potential:

Historically the site was primarily native prairie and savanna, which provided optimal habitat for prairie and savanna dependent wildlife species.

Long term expected utilization and conservation potential for target population or habitat:

The long-term targeted habitat types are described in the proposed action section of the Willow Creek Management Plan/Environmental Assessment. The overall goal of the proposed action alternative is to support viable examples of a diversity of habitat types presently found on the site. Achieving this goal will require a sustained program of habitat enhancement and maintenance.

Contribution toward long-term goal:

Accrual of HUS through habitat enhancement projects.

Physical products:

Physical products will be acres of land that have been enhanced. For 1998, we anticipate enhancement of 5 acres of wet prairie and removal of invasive non-native plant species from 15 acres.

Environmental attributes affected by the project:

Environmental attributes affected by the project will include maintenance or increase in populations of target and non-target wildlife species and native plant species; and continuation of natural processes such as hydrology that are important to riparian and wetland habitats.

Changes assumed or expected for affected environmental attributes:

Populations of target and non-target wildlife species and native plant species will be maintained over the short term, and in some cases enhanced over the long term. Continuation of natural processes such will help to ensure viable populations are maintained.

Measure of attribute changes:

The Willow Creek Environmental Assessment/Management Plan proposes management actions to increase habitat units from 575.39 to 814.71 AAHU's.

Assessment of effects on project outcomes of critical uncertainty:

Critical uncertainties are related to the effectiveness of restoration and enhancement methods. Using an adaptive management approach, we will use the results of ongoing monitoring to modify or adjust management techniques as necessary, to identify and utilize the most effective and cost efficient methods available.

Information products:

Annual monitoring includes qualitative monitoring (photo plots, written descriptions), and quantitative monitoring (quantitative surveys for specific wildlife species, quantitative vegetation monitoring, and wildlife habitat assessment). The monitoring results will be summarized in an annual report. The annual report will also evaluate the implications of the documented results in an adaptive management context.

Coordination outcomes:

Habitat Evaluation Report and Final Management Plan/Environmental Assessment have been completed as of March, 1995.

MONITORING APPROACH

Habitat management and enhancement activities will employ manual and mechanical (tractor mower, loppers, chain saws, hand saws) removal of invasive non-native species and enhancement of oak woodland habitat structure, and removal of invading woody vegetation. For most of the non-native and native invading species only the above ground portions of plants will be removed. Implementation of vegetation management treatments will be timed to minimize wildlife disturbance and maximize effectiveness of the treatment on target species. Off-site protection planning will incorporate air photo interpretation, GIS mapping, and qualitative evaluations of existing habitat conditions.

Qualitative and quantitative monitoring of site conditions and effectiveness of management treatments will be conducted to monitor the project outcomes. Ultimately, the project's outcomes will be measured by monitoring changes in population size and/or habitat use by target species, and in the number of AAHU at the site (as defined in the Habitat Evaluation Procedures for the target species). Other key habitat components such as surface and groundwater quality, quantity, and timing will be monitored to evaluate our success in minimizing off-site impacts to existing hydrologic conditions. Water quality assessments will be done by certified water quality testing facilities and on-site evaluation of turbidity using a Hach turbidity meter. Continuously recording rain gages will be used to monitor precipitation. Surface water and ground water will be monitored on a regular basis (monthly) and during specific precipitation events. Monitoring for treatment effectiveness will be based on paired comparisons of data from permanent sampling units using repeated measures analysis and qualitative comparison of photographs from permanent photo-monitoring stations. Population densities of target avian species will be tracked using a series of permanent fixed-radius point count stations.

Provisions to monitor population status or habitat quality:

Baseline monitoring of AAHU's for the site was completed in 1995, which allows comparisons to be made on an annual basis or as necessary to track the increase in AAHU's.

Data analysis and evaluation:

Data will be summarized and evaluated by TNC staff, using appropriate statistical parameters where appropriate.

Information feed back to management decisions:

Qualitative observations will be incorporated immediately (on a daily basis) into management decisions. Quantitative data will be analyzed on a yearly basis and incorporated into management decisions.

Critical uncertainties affecting project's outcomes:

We anticipate that many of the uncertainties can be resolved by communicating and collaborating with other natural area managers and scientists working in the Willamette Valley and in similar habitats elsewhere. We are collaborating on this level with other participants in the Willamette Valley Natural Areas Network, the Natural Areas Association, the Society of Wetland Scientists, and the Society for Ecological Restoration.

EVALUATION**Incorporating new information regarding uncertainties:**

New information will be incorporated into the prioritization process and in preparing annual work plans.

Increasing public awareness of F&W activities:

The Willow Creek Natural Area is located on the edge of the Eugene metropolitan area. The site is open to public visitation (foot

access only). Ongoing volunteer work parties and other organized volunteer activities provide the general public with opportunities to see first hand the features of the site and the work that is being undertaken to protect, mitigate, and enhance fish and wildlife. The site is also visited by classes and other small groups from the University of Oregon and local public schools, and provides an opportunity to inject real world case studies into the broader curriculum.

RELATIONSHIPS

OPPORTUNITIES FOR COOPERATION:

This project benefits from the West Eugene Wetlands partnership, which includes the BLM Eugene District, City of Eugene, U.S. Army Corps of Engineers, and the Oregon Youth Conservation Corps. The City of Eugene has developed and adopted the West Eugene Wetlands Plan, a document that provides a multi-objective approach to wetland protection, management, and permitting. One of the main goals of the Plan is do protect a viable, interconnected system of wetlands in West Eugene, of which Willow Creek is a part. The partnership is also cooperating to implement restoration and enhancement activities throughout the plan area. For example, in 1996 Eugene BLM provided staff and equipment for conducting a prescribed burn, and for mechanical control of invasive non-native vegetation. The Oregon Youth Conservation Corps assisted in obtaining matching funds that greatly reduced the cost of work crews that worked on wildlife projects at Willow Creek in 1996. The City of Eugene's volunteer coordinator will work with TNC staff to provide increased volunteer resources to perform maintenance work at Willow Creek. The City of Eugene is completing a study of open space protection needs that may lead to acquisition of wildlife habitat in the Willow Creek basin adjacent to the TNC/BPA project area. These contributions will reduce the costs of the projects identified by an estimated \$10,000.

COSTS AND FTE

1997 Planned: \$51,000

FUTURE FUNDING NEEDS:

<u>FY</u>	<u>\$ NEED</u>	<u>% PLAN</u>	<u>% IMPLEMENT</u>	<u>% O AND M</u>
1998	\$46,800		90%	10%
1999	\$36,000		50%	50%
2000	\$36,000		50%	50%
2001	\$26,000		0%	100%
2002	\$26,000		0%	100%

PAST OBLIGATIONS (incl. 1997 if done):

<u>FY</u>	<u>OBLIGATED</u>
1993	\$495,477
1995	\$696,539
TOTAL:	\$1,192,016

Note: Data are past obligations, or amounts committed by year, not amounts billed. Does not include data for related projects.

OTHER NON-FINANCIAL SUPPORTERS:

City

LONGER TERM COSTS: We anticipate annual costs for implementation of \$26,000/year (1997 dollars)

1997 OVERHEAD PERCENT: 19%

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:

[Overhead % not provided so BPA appended older data.] Applies to total project costs

CONTRACTOR FTE: Approximately 0.67 FTE

SUBCONTRACTOR FTE: Approximately 0.22 FTE

SUPPLEMENTAL WILDLIFE EVALUATION FACTORS:

s for education and volunteer involvement on the site.6) Terrestrial and aquatic habitats found on the site include: Riparian forest/beaver pondsWet prairieForested wetland (Oregon ash)Upland prairieConiferous forestOak woodland8) As noted above, this project benefits from the protection provided by the West Eugene Wetlands Plan. In addition, the BLM is acquiring protected wetlands within the plan area using congressional appropriated Land and Water Conservation Funds. It is anticipated that a total of \$9 million in Land and Water Conservation Funds will be appropriated to complete BLM's acquisition program. 9) The site design implemented by TNC now incorporates more extensive buffers surrounding the core habitat areas than originally envisioned. Currently, site design analyses are looking at ways to protect major wildlife movement corridors, and important upstream riparian and hydrological links. Working with adjacent land owners and other members of the West Eugene Wetlands partnership, we anticipate being able to increase the protection of the core area through buffers and corridors on adjacent undeveloped lands.1