

**Bonneville Power Administration
Fish and Wildlife Program FY99 Proposal Form**

Section 1. General administrative information

Amazon Basin/Eugene Wetlands Phase II

Bonneville project number, if an ongoing project 9205900

Business name of agency, institution or organization requesting funding
The Nature Conservancy

Business acronym (if appropriate) TNC

Proposal contact person or principal investigator:

Name	Edward R. Alverson
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Subcontractors.

We may hire consultants and youth work crews to perform some tasks under this contract but at this point it is not certain who they will be. We can provide information on who has done these tasks in the past on request.

List one subcontractor per row; to add more rows, press Alt-Insert from within this table

Organization	Mailing Address	City, ST Zip	Contact Name

NPPC Program Measure Number(s) which this project addresses.

11.3F.1

NMFS Biological Opinion Number(s) which this project addresses.

N/A

Other planning document references.

Subbasin.

The project area is located within the Long Tom watershed in the Willamette River basin

Short description.

We propose to continue to implement restoration and enhancement activities as defined in the Management Plan/EA for the Willow Creek Natural Area for the following target wildlife species: beaver, black-capped chickadee, red-tailed hawk, valley quail, western meadowlark, yellow warbler, and western pond turtle.

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
	Anadromous fish		Construction		Watershed
	Resident fish	+	O & M		Biodiversity/genetics
X	Wildlife		Production		Population dynamics
	Oceans/estuaries		Research		Ecosystems
	Climate	+	Monitoring/eval.		Flow/survival
	Other	X	Resource mgmt		Fish disease
			Planning/admin.		Supplementation
			Enforcement	X	Wildlife habitat en-
		+	Acquisitions		hancement/restoration

Other keywords.

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
	(There are related projects but none that depend upon this project being funded or vice versa)	

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Continue wildlife maintenance and enhancement activities as outlined in the Willow Creek Management Plan	a	Continue non-native species control efforts; eliminate top five problem non-native plant species from the site
		b	Continue bullfrog control measures, reduce adult bullfrog populations by 50%
		c	Monitor and evaluate non-native species control efforts
		d	Continue oak woodland enhancement efforts on 2 acres of oak woodland
		e	Continue woody plant removal for prairie habitat maintenance on 2 acres of wet prairie
		f	Install and monitor erosion control installations
2	Continue hydrology and water quality monitoring	a	Continue streamflow and groundwater monitoring and analyze results
		b	Continue precipitation monitoring
		c	Continue turbidity monitoring
		d	Refine wildlife management and enhancement activities based upon results of monitoring and analysis
3	Document effects of wildlife maintenance and enhancement activities performed under the Willow Creek Mgmt. Plan	a	Perform a HEP analysis to compare with baseline HEP
		b	Monitor population levels and habitat use of selected target wildlife species
4	Continue actions to improve defensibility of the site and reduce unauthorized use and associated impacts	a	Continue volunteer defensibility monitoring
		b	Maintain or update public use signage and entry controls (gates and fences) as necessary

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	4/1999	3/2000	70%
2	4/1999	3/2000	5%
3	4/1999	3/2000	20%
4	4/1999	3/2000	5%

Schedule constraints.

There are no major schedule constraints for this project.

Completion date.

Since the habitat enhancements described in the Willow Creek Management Plan represent a vision for implementation over a 20 year period, the likely completion date (depending upon funding availability) could be as far out as the year 2015.

Section 5. Budget

FY99 budget by line item

Item	Note	FY99
Personnel		12,900
Fringe benefits	(38.5%, based upon line 1 and part of line 4 costs)	7,000
Supplies, materials, non-expendable property		2,000
Operations & maintenance	(some of this is personnel expense applied to O&M tasks)	7,500
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		0
PIT tags	# of tags:	
Travel		1000
Indirect costs		7600
Subcontracts		12,000
Other		
TOTAL		50,000

Outyear costs

Outyear costs	FY2000	FY01	FY02	FY03
Total budget	50,000	50,000	50,000	50,000
O&M as % of total	15%	15%	15%	15%

Section 6. Abstract

This proposal is to continue to implement restoration and enhancement activities as defined in the Willow Creek Wildlife Mitigation Project Environmental Assessment. This project has been designed to provide for protection and improvement of wildlife habitat for mitigation of habitat loss as outlined in the Northwest Planning Council's 1994 Fish and Wildlife Program. The Willow Creek EA was developed in 1995 to implement this project on the 350 acre Willow Creek Natural Area. The EA describes five management alternatives and quantifies the increase in habitat units for the target species that would occur under each alternative. The alternative that was selected for implementation in the alternative that was designed to maximize wildlife and biodiversity values on the site. This would be accomplished by restoring, enhancing, or maintaining, sufficiently large areas of a variety of habitats occurring on the site. For FY >99 we anticipate achieving native wet prairie and savanna habitat restoration, enhance oak woodland, reduce target non-native plant species abundance, improve populations of native aquatic species by removing bullfrogs and applying data from hydrologic monitoring to improve aquatic habitat conditions. These management actions are intended to increase available habitat units at Willow Creek for the following target wildlife species: beaver, black-capped chickadee, red-tailed hawk, valley quail, western meadowlark, yellow warbler, and western pond turtle. The results will be monitored by performing a habitat analysis (HEP) to compare the habitat units provided after implementation with the habitat units provided prior to the start of the project.

Section 7. Project description

a. Technical and/or scientific background.

The Amazon Basin/Eugene Wetlands project has been designed to provide for protection and improvement of wildlife habitat for mitigation of habitat loss as outlined in the Northwest Planning Council's 1994 Fish and Wildlife Program. These efforts would partially fulfill BPA's obligations to protect, mitigate, and enhance wildlife habitat affected by the development of federal hydroelectric projects in the Columbia River Basin, including the Willamette River Drainage. The Willow Creek Wildlife Mitigation Project Environmental Assessment (EA) was developed in 1995 to implement this project on the 350 acre Willow Creek Natural Area. Prior to completing the EA, a habitat assessment was conducted of the Willow Creek site to document baseline conditions in terms of habitat units for the following target species: beaver, black-capped chickadee, red-tailed hawk, valley quail, western meadowlark, yellow warbler, and western pond

turtle. The EA also describes five management alternatives and quantifies the increase in habitat units for the target species that would occur under each alternative. The alternative that was selected for implementation in the alternative that was designed to maximize wildlife and biodiversity values on the site. This would be accomplished by restoring, enhancing, or maintaining, sufficiently large areas of a variety of habitats occurring on the site.

b. Proposal objectives.

We anticipate achieving the following outcomes: 1) An increase of five acres of native wet prairie and savanna habitat in FY >99 by removal of invading woody vegetation. 2) Enhancement of five acres of oak woodland by reducing trunk density and removing invasive non-native understory vegetation. This would increase the structural diversity and productivity of the oak woodlands for target wildlife species. 3) A reduction of target non-native plant species abundance and distribution to target control levels. 4) Improvement of populations of native aquatic species by reducing density of adult bullfrogs in aquatic habitats by 50% from pre-control levels. 5) Application of data from hydrologic monitoring to maintain or improve habitat conditions for target aquatic wildlife species. 6) Protection of habitat quality from disturbance related to unauthorized uses of the site.

The accomplishments achieved under this project would be documented in quarterly progress reports and an annual report at the end of the project year. We anticipate performing another habitat evaluation (HEP) analysis at this point to compare Habitat Units available for target wildlife species as a result of this project with the analysis from the original 1994 HEP. We also will continue to implement monitoring of vegetation and other wildlife use of the site to document improvements resulting from this project.

In addition to the habitat management activities identified here, it is also possible that some adjacent lands with significant wildlife habitat value may be purchased from private owners to add to the existing protected Natural Area. If so, these acquisitions may provide additional opportunity for BPA to mitigate for the effects of federal hydroelectric projects in the Columbia basin. However, since specific lands for acquisition have not been identified at this point, such acquisitions are not included within the project goals or budget.

c. Rationale and significance to Regional Programs.

This project was developed because of the opportunity to provide BPA with in-kind mitigation for wildlife habitat loss as outlined in the Northwest Planning Council's 1994 Fish and Wildlife Program. The types of wildlife species and habitats, including wetlands, riparian zones, prairie, and oak woodlands, are typical of habitats that were impacted by construction of BPA hydroelectric dams in the Willamette River drainage. This project was included in the 1993 Oregon Trust Agreement Planning Project and is listed in Appendix C at the end of that report. The Willow Creek project is relevant to ongoing

project #9705900, Securing Mitigation Sites in the Columbia River Basin in Oregon. It is complementary to the ongoing Burlington Bottoms project (#9107800). It is also complementary to the Willamette Basin Mitigation Program (#9206800) which includes the Mt. Pisgah site. The relationship of Willow Creek to the Mt. Pisgah site is described in Section 8 below.

Work at Willow Creek funded by BPA benefits from the site being located within the West Eugene Wetlands Project and the Amazon Creek Basin, as described in Section 8 below.

d. Project history

This is a continuing project. The proposal for this project was originally submitted in August 1991, and the project was initiated in 1992. The original proposal included funding for both habitat protection through acquisition, and habitat improvement through restoration, enhancement, and O&M. The Habitat Evaluation (HEP) for the Willow Creek site was completed in 1994, and the Management Plan/EA was completed in 1995. Also in 1995, The Nature Conservancy purchased approximately 325 acres of habitat at Willow Creek. At the same time, BPA acquired a conservation easement for the entire site from The Nature Conservancy. The Nature Conservancy still owns the underlying fee title for the 325 acres. In 1996 and 1997, The Nature Conservancy contracted with BPA to perform wildlife habitat restoration, enhancement, O&M, and monitoring. This funding has been used to continue inventory of small mammals, reptiles, and amphibians, to develop better hydrology and water quality monitoring programs, to implement a non-native vegetation control program, and restore over 14 acres of wet prairie. A creative approach to project implementation, use of flexible work crews, and a focused monitoring program allows us to take an adaptive management approach to implementing the Management Plan/EA. We anticipate that the opportunity for BPA to fulfill wildlife habitat mitigation obligations at the Willow Creek site will continue into the future.

Costs through FY 1997 have totaled \$1,230,808, of which \$1,112,500 were for acquisition. Of the remainder, \$32,977 was for preparing the management plan and EA, and \$85,331 was been for habitat restoration, enhancement, O&M, and monitoring.

e. Methods.

The methods by which the Willow Creek project are being implemented are described in detail under Alternative 1 (Proposed Action Alternative) in the Willow Creek Management Plan/EA. Briefly, this alternative proposes to maximize wildlife and biodiversity values by maintaining a diverse mix of habitats on the site, including open prairie, savanna, woodland, riparian forest, and wetland. In some portions of the site, active habitat management has been initiated to maintain or restore open prairie habitats. In other areas, vegetative succession will be allowed to proceed and forested habitats (both forested wetlands dominated by Oregon ash and upland Douglas-fir forests) will be allowed to mature. The spatial configuration of different habitats on the site is designed

so as to maximize large blocks of contiguous habitat, thus minimizing habitat fragmentation. Under the proposed action, high priority is also given to controlling invasive, habitat-modifying non-native plant species. These activities are also integrated into other ongoing stewardship activities at Willow Creek that are not directly associated with this BPA project, such as prescribed burning, and management and monitoring of endangered species populations that occur on the site.

The environmental consequences of this project are also described in the Management Plan/EA. Based upon the Habitat Evaluation (HEP), there would be a 42% net increase in habitat units for the target species identified with full implementation of the management plan, from 575 to 815 habitat units. This increase is due generally to the increased habitat quality for wildlife. For example, habitat restoration or enhancement would generally provide improved nesting habitat for some species, or higher quality hunting and feeding areas for other species.

Although the Management Plan/EA identified some potential short term negative impacts that could occur, these impacts could be minimized by timing management activity appropriately. For example, this could be done by timing management activity to seasons when wildlife species are not breeding or nesting, or when vegetation is dormant, or when the ground is dry and hard, and not likely to be disturbed. The Management Plan/EA concluded that even taken cumulatively, these short term impacts would have little or no long term impact to the Willow Creek environment.

Long-term monitoring and evaluation of management activities is designed to determine if the objectives of the Proposed Action alternative are met, and to evaluate the success of the management plan. Monitoring and evaluation will include the use of a quantifiable method to analyze change in habitat units (based upon the HEP conducted in 1994). In addition, wildlife surveys have been designed to document species presence and occurrence before, during, and after project implementation in response to habitat restoration, enhancement, and maintenance activities.

f. Facilities and equipment.

There are no special or high cost facilities or items of equipment that are identified for purchase during FY >99. To date, each year's project budget has included a small amount (typically less than 5% of the overall project budget) for vehicle operation, equipment, supplies, and other materials.

g. References.

Bonneville Power Administration, 1995. Willow Creek Wildlife Mitigation Project, Final Environmental Assessment. DOE-EA-1023, Portland, OR

Beilke, Susan. 1995. Willow Creek Habitat Evaluation. Oregon Dept. of Fish and Wildlife, Clackamas, OR.

Section 8. Relationships to other projects

The Willow Creek project has obvious links to the Willamette Basin Mitigation Program (#9206800), which includes a number of sites elsewhere in the Willamette Valley that have similar opportunities for wildlife mitigation. For example, the Mt Pisgah site, which is located about 11 miles east of the Willow Creek site, supports some similar habitats and target species (such as wetlands and riparian habitats supporting species such as the western pond turtle). Mt Pisgah also provides some similar opportunities for wildlife habitat enhancement, such as removal of invasive non-native species such as Scot's broom.

Work at Willow Creek funded by BPA benefits from the site being located within the West Eugene Wetlands Project and the Amazon Creek Basin. The West Eugene Wetlands Plan is being implemented by an interagency partnership that includes The Nature Conservancy, the City of Eugene, the Bureau of Land Management, the Corps of Engineers, and the Oregon Youth Conservation Corps. These agencies work together to manage wetland resources in a landscape context over the entire project area. Each partner has a particular role that it brings to the partnership, which provides for stronger implementation of the program. For example, the Bureau of Land Management has received over \$7 million for land acquisition in west Eugene, and the City of Eugene operates a wetland mitigation bank that provides funding for wetland restoration. These projects are helping to build an interconnected network of wetlands and riparian corridors that help to strengthen the viability of habitats and wildlife populations over the entire system. In summary, the Willow Creek wildlife mitigation project benefits from the wetland partnership but is not constrained by it.

The U.S. Fish and Wildlife Service has published a recovery plan for Bradshaw's tomatium, a Federally listed endangered species. This is just one of the seven species that occur at Willow Creek that are Federally listed, proposed, candidate, or species of concern. In addition, the U.S. Fish and Wildlife Service is in the process of developing a multi-species recovery plan for numerous listed, proposed, candidate, or species of concern that occur in the Willamette Valley. It is anticipated that the activities described under the Proposed Action alternative would be compatible with these recovery plans and no modifications would be required should additional species be federally listed.

Section 9. Key personnel

Edward R. Alverson, Willamette Valley Stewardship Ecologist, is the project manager for The Nature Conservancy on this project. Mr. Alverson is an ecologist and field botanist with expertise in wetland ecology, monitoring, ecological restoration, landscape ecology, and natural area management planning.

RESUME FOR EDWARD R. ALVERSON

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EDUCATION: Oregon State University, Corvallis, 1986-1989; M.S. in Botany. Thesis title: "Biosystematics of Parsley-ferns, *Cryptogramma* R. Br., in Western North America".
The Evergreen State College, Olympia, WA, 1977-1979; 1981-1984, B.S. in Biology and B.A. in Environmental Studies.

WORK EXPERIENCE:

1991-Present. Willamette Valley Stewardship Ecologist, The Nature Conservancy, Eugene OR. As the Nature Conservancy's staff ecologist for the southern Willamette Valley, I am responsible for all aspects of management of five natural areas. Responsibilities include organizing and writing site management plans; ongoing management, research, and monitoring of rare animals, plants, and plant communities; planning and implementation of ecological restoration projects; and representing TNC in local partnerships and cooperative projects.

1990-1991. Environmental Scientist, David Evans and Associates, Inc., Portland OR.
Staff botanist for an engineering, planning, and environmental consulting firm.

1980-1989. Contract Botanist/Botanical Consultant. Conducted surveys for endangered, threatened, and sensitive plants; prepared status reports for specific sensitive plant species, and conducted general floristic and vegetational studies. Worked on projects throughout the states of Washington and Oregon for the Bureau of Land Management, U.S. Forest Service, Oregon Dept. of Agriculture Endangered Species Program, Washington Natural Heritage Program, and the Washington Native Plant Society. Projects in the Willamette-Puget Trough included inventory surveys for *Aster curtus* in the southern Puget Sound region, field studies and monitoring of *Aster vialis*, field surveys for rare plant populations and native prairie remnants in the Willamette Valley.

SELECTED PUBLICATIONS:

Alverson, E.R. 1993a. When "native" plants aren't native. *Hortus Northwest* 4:20-24.

_____. 1989a. *Cryptogramma cascadenis*, a new parsley fern from western North America. *American Fern Journal* 79(3):95-102.

_____. 1989b. Use of a county soil survey to locate remnants of native grassland in the Willamette Valley, Oregon. Pp. 107-112 in Mitchell, R.S., C.J. Sheviak, and D.J. Leopold (eds.). *Ecosystems Management: Rare Species and Significant Habitats*. Proc. 15th Ann. Natural Areas Conf. New York State Museum Bull. 471.

Alverson, E. and J. Arnett. 1986. From the steppe to the alpine: a botanical reconnaissance

of the Lake Chelan-Sawtooth Ridge Area, Washington. Pp. 1-63 *in* Plant Life of the North Cascades: Lake Chelan-Sawtooth Ridge, Stehekin Valley, and Glacier Peak. Douglasia Occasional Papers vol. 2.

Section 10. Information/technology transfer

The Nature Conservancy is a participant in a number of partnerships and organizations, such as the West Eugene Wetlands partnership described above. Another organization that we participate in is the Willamette Valley Natural Areas Network. The network is comprised of land managers, researchers, and agency staff with an interest in natural areas and biodiversity in the Willamette Valley. The network communicates through meetings and mailings; the possibility of holding a conference on Willamette Valley natural areas in the next few years has been discussed.

Staff from The Nature Conservancy have been involved on an informal or advisory basis with other BPA wildlife mitigation projects and proposals, including sites such as Burlington Bottoms and Mt. Pisgah.

Nature Conservancy staff regularly participate in national meetings of professional and scientific organizations, such as the Society for Ecological Restoration, the Natural Areas Association, Ecological Society of America, and The Wildlife Society.

Finally, Nature Conservancy staff from Oregon communicate on a regular basis with equivalent staff from Nature Conservancy programs in other states. Every two years Oregon staff attend a national meeting of Nature Conservancy stewards.