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## PART I - ADMINISTRATIVE

### Section 1. General administrative information

#### Title of project

Sandy River Delta Riparian Reforestation

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**BPA project number:** 9902600

**Contract renewal date (mm/yyyy):**  Multiple actions?

#### **Business name of agency, institution or organization requesting funding**

USDA Forest Service, Columbia River Gorge National Scenic Area

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**Business acronym (if appropriate)** USFS-CRGNSA

#### **Proposal contact person or principal investigator:**

<b>Name</b>	<u>Virginia Kelly</u>
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<b>Email address</b>	<u>vkelly/r6pnw_crgnsa@fs.fed.us</u>

#### **NPPC Program Measure Number(s) which this project addresses**

11.3E.1

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#### **FWS/NMFS Biological Opinion Number(s) which this project addresses**

N/A

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#### **Other planning document references**

Sandy River Delta Watershed Analysis (page 16)

Sandy River Delta Plan (pages 17-18)

Sandy River Delta Plan Final Environmental Impact Statement (page 2-32\_

Columbia River Gorge National Scenic Area Management Plan (page III-38)

Northwest Forest Plan (page B-11).

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#### **Short description**

Restore 250 acres of rare Columbia River floodplain 'gallery' riparian forest (dense, unbroken stands of black cottonwood, willow, ash). Reforestation will improve habitat for riparian forest species.

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#### **Target species**

Restore 250 acres of rare Columbia River floodplain ‘gallery’ riparian forest (dense, unbroken stands of black cottonwood, willow, ash). Reforestation will improve habitat for riparian forest species.

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## Section 2. Sorting and evaluation

**Subbasin**  
Sandy

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### ***Evaluation Process Sort***

<b>CBFWA caucus</b>	<b>Special evaluation process</b>	<b>ISRP project type</b>
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories
<input type="checkbox"/> Anadromous fish <input type="checkbox"/> Resident fish <input checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Multi-year (milestone-based evaluation) <input type="checkbox"/> Watershed project evaluation	<input type="checkbox"/> Watershed councils/model watersheds <input type="checkbox"/> Information dissemination <input type="checkbox"/> Operation & maintenance <input type="checkbox"/> New construction <input type="checkbox"/> Research & monitoring <input checked="" type="checkbox"/> Implementation & management <input type="checkbox"/> Wildlife habitat acquisitions

## Section 3. Relationships to other Bonneville projects

***Umbrella / sub-proposal relationships.*** List umbrella project first.

<b>Project #</b>	<b>Project title/description</b>

### ***Other dependent or critically-related projects***

<b>Project #</b>	<b>Project title/description</b>	<b>Nature of relationship</b>
9902500	Lower Columbia River Wetlands Restoration and Evaluation Program	Close physical proximity

## Section 4. Objectives, tasks and schedules

### *Past accomplishments*

Year	Accomplishment	Met biological objectives?
1997	Restored three acres riparian forest	Yes
1998	Restored eight acres riparian forest	Yes
1999	Planned restoration of 50 acres	N/A

### *Objectives and tasks*

Obj 1,2,3	Objective	Task a,b,c	Task
1	Site Preparation	a	Site Preparation
2	Planting	b	Planting
3	Maintain Seedlings	c	Maintain Seedlings
4	Monitor Seedlings	d	Visual Documentation
		e	Measure Seedling Survival
5	Monitor Wildlife Populations	f	Monitor neo-tropical bird wildlife populations
6	Establish HEP Values	g	Establish HEP Values

### *Objective schedules and costs*

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	10/1999	9/2000	50 acres cleared	x	21.00%
2	11/1999	3/2000	50 acres planted	x	60.00%
3	6/2000	9/2000	50 acres maintained	x	4.00%
4	3/2000	9/2000	50 acres monitored	x	5.00%
5	4/2000	6/2000	Annual wildlife monitor.		4.00%
6	10/1999	9/2000	HEP values established	x	6.00%
				<b>Total</b>	100.00%

### **Schedule constraints**

None known at this time.

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### **Completion date**

9/2000

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## Section 5. Budget

**FY99 project budget (BPA obligated):** \$21,500

***FY2000 budget by line item***

<b>Item</b>	<b>Note</b>	<b>% of total</b>	<b>FY2000</b>
Personnel	Covered by USFS and partners		0
Fringe benefits	Covered by USFS and partners		0
Supplies, materials, non-expendable property	Plants: purchased with grant funds (\$40,000 granted in 1999)		0
Operations & maintenance	Covered by USFS and partners		0
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	USFS purchased property in 1991		0
NEPA costs	EIS completed by USFS in 1996.		0
Construction-related support	N/A		0
PIT tags	# of tags: N/A		0
Travel	Covered by USFS and partners		0
Indirect costs	Covered by USFS and partners		0
Subcontractor	Site Preparation: \$19,000 Prepare HEP vaues: \$5,000	% 100	24,000
Other			0
<b>TOTAL BPA FY2000 BUDGET REQUEST</b>			<b>\$24,000</b>

***Cost sharing***

<b>Organization</b>	<b>Item or service provided</b>	<b>% total project cost (incl. BPA)</b>	<b>Amount (\$)</b>
Lower Columbia River Estuary Program	Cash grant for plant materials	% 16	14,500
Metro	Cash grant for plant materials	% 18	16,000
Friends of Trees	Planting labor; plant maintenance; monitoring, admin.	% 18	16,000
Weyerhauser Found.	Plant Maintenance	% 2	2,100
USFS "Chief's Natural Resource Agenda"	Cash grant for plant materials	% 11	10,000
USFS, CRGNSA	Landowner, Admin, Monitor	% 6	6,000
<b>Total project cost (including BPA portion)</b>			<b>\$88,600</b>

***Outyear costs***

	<b>FY2001</b>	<b>FY02</b>	<b>FY03</b>	<b>FY04</b>
<b>Total budget</b>	\$21,500	\$21,500	\$21,500	\$21,500

## Section 6. References

Watershed?	Reference
<input type="checkbox"/>	
<input type="checkbox"/>	Columbia River Gorge Commission, and USDA Forest Service. 1992. Management Plan for the Columbia River Gorge National Scenic Area. Columbia River Gorge Commission, White Salmon, Washington.
<input type="checkbox"/>	Salix Associates. 1992. Sandy River Delta Inventory. Unpublished. On file at Columbia River Gorge National Scenic Area, Hood River, Oregon.
<input checked="" type="checkbox"/>	USDA Forest Service, Columbia River Gorge National Scenic Area. 1994. Sandy River Delta Watershed Analysis. Unpublished. On file at Columbia River Gorge National Scenic Area, Hood River, Oregon.
<input type="checkbox"/>	USDA Forest Service, Columbia River Gorge National Scenic Area. 1996. Sandy River Delta Plan. USDA Forest Service, Hood River, Oregon
<input type="checkbox"/>	USDA Forest Service, Columbia River Gorge National Scenic Area. 1996. Sandy River Delta Final Environmental Impact Statement. USDA Forest Service, Hood River, Oregon
<input checked="" type="checkbox"/>	USDA Forest Service, Columbia River Gorge National Scenic Area and Mt. Hood National Forest. 1998. Columbia Tributaries East Watershed Analysis. USDA Forest Service, Hood River, Oregon.
<input checked="" type="checkbox"/>	USDA Forest Service, Columbia River Gorge National Scenic Area. Columbia Tributaries West Watershed Analysis. (in progress).
<input type="checkbox"/>	USDA Forest Service and USDI Bureau of Land Management. 1994. Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the range of the Northern Spotted Owl. (Also known as the Northwest Forest Plan

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## PART II - NARRATIVE

### Section 7. Abstract

- a: Goal: The desired future condition is 600 acres of ‘gallery’ riparian forest (dense, unbroken stands of black cottonwood, willow, ash) and shrub-scrub community which have been extensively cleared and invaded by undesirable species. Riparian forest habitat has almost entirely disappeared from this stretch of the Columbia, and what remains is generally patchy strips along stream courses. The Delta represents one of the very best opportunities to re-establish a large block of dense, riparian forest.

Objectives:

- 1) Restore 250 acres of riparian forest, or 50 acres per year for five years, because the work can be reasonably accomplished with current staffing levels.

2) Use partnerships to extent possible to build advocacy for public lands and natural resources.

b. 1994 Columbia Basin Fish and Wildlife Program: Replace riparian forest habitat inundated above Bonneville Dam (in-kind, not in-place).

c. Methods: Site preparation and planting methods are based on previous Forest Service experience.

d. Outcomes: A 5 year plan which plants 50 acres per year in native riparian forest tree and shrub species (a total of 250 acres planted in 5 years). 50 plus acres per year maintained. Annual reports on planting success and neo-tropical monitoring.

Expected Benefits: Improve habitat for riparian forest species, particularly neo-tropical migrant birds, amphibians, herons and bald eagles.

e. Monitoring:

1. Annual photo documentation of reforestation to build long term visual record of reforestation results.
2. Annual measurement of planting success, and evaluation of any causes of planting failure. Corrective action taken as needed.
3. Annual population counts of neo-tropical migrants to determine affect on wildlife populations.

## Section 8. Project description

### a. Technical and/or scientific background

**Regional History:** The Columbia River hydropower system massively altered the river's riparian habitat. Bonneville Dam inundated most of the floodplain riparian habitat in the Columbia Gorge. (Columbia Tributaries East Watershed Analysis, USDA Forest Service 1998). Downstream of Bonneville Dam, the Columbia River dam system massively altered flood patterns, the predominant natural disturbance regime. In addition, the extensive pre-European settlement wetlands, prairies and riparian forests of the lower Columbia River have been cleared, diked, drained, farmed and urbanized (Sandy River Delta Watershed Analysis, USDA Forest Service, 1994). The remaining riparian habitat is primarily patchy, narrow strips along stream courses (Altman).

**Site Significance:** The 1400 acre Sandy River Delta is the last large undeveloped remnant of Columbia River floodplain in the Portland area. The Delta has enormous potential for wetland, prairie and riparian forest restoration.

**Site History:** Sandy River Delta is undeveloped, but hardly undisturbed. Before European settlement, it was largely forested, with some level "prairies", small lakes and wetlands. Beginning in the late 1800's, forests were cleared for grazing. Later, ditches were installed to drain wetlands. Prior to the Columbia River damming, annual spring floods in the 800,000 cfs range were common, with periodic large floods over 1,000,000 cfs. Now, floods in the 200,000 cfs range are uncommon (Sandy River Delta Watershed Analysis, USDA Forest Service, 1994). As a result, the land is massively altered. It's natural disturbance regime was altered by the dam system, and the land has been cleared, drained, diked, grazed, seeded and invaded by undesirable species.

**Location/Ownership:** The Delta, located just east of the Portland, Oregon metropolitan area, is located at the confluence of the Sandy and Columbia Rivers. The Forest Service, CRGNSA, bought the Delta in 1991 and began master planning in 1992.

**Watershed Analysis:** A watershed analysis was completed as part of the master planning process (Sandy River Delta Watershed Analysis, USDA Forest Service, 1994). Sandy River Delta is in the watersheds of both the Columbia and Sandy Rivers; clearly the watershed analysis could not include the entire watersheds of both rivers. Given the Delta's floodplain character, the Columbia River lowlands were considered a more appropriate watershed analysis context than the Sandy River uplands. Criteria for a "vicinity" watershed area were provision of a site context, and enough upland area to address connectivity. The chosen watershed analysis area included Columbia River lowlands on both sides of the river for several miles up and downstream of the Delta; uplands of the local Broughton Bluff watershed; and direct, short, cliff Columbia River tributaries on the Washington side.

The watershed analysis indicated that the extensive pre-European settlement wetlands, prairies and riparian forests of the analysis area have been cleared, diked, drained, farmed and urbanized. Beginning in the 1850's, the generally forested Columbia River lowlands were cleared for farming and for towns. While farms had some wildlife habitat value, these are now disappearing as the land becomes intensely urbanized. As a result, wetland, meadow, and riparian forest habitats are increasingly scarce in the analysis area.

**Management Direction:** The completed comprehensive management plan (Sandy River Delta Plan and EIS, 1996) envisions wetland, riparian forest, upland forest, upland meadow and shrub-scrub restoration, along with moderate recreation and natural resource interpretation.

The Sandy River Delta Plan divided the 1400 acre parcel into two distinct management areas. The northern 600 acre "Sundial Island" will be primarily reforested with riparian tree species to create a dense "gallery" old growth riparian forest. A shrub-scrub community will be created under Bonneville Power Administration powerlines due to vegetation height restrictions. Wetland restoration and upland meadow enhancement are desired on the southern 800 acre "Thousand Acres".

**Proposed Action:** Restore 250 acres of 'gallery' riparian forest (dense, unbroken stands of black cottonwood, willow, ash) which have been extensively cleared and invaded by undesirable species. The Sandy River Delta Watershed Analysis indicated riparian forest habitat has almost entirely disappeared from this stretch of the Columbia, and what remains is generally patchy. The Delta represents one of the very best opportunities to re-establish a large block of dense, riparian forest.

The desired future condition is 600 acres of riparian forest and shrub-scrub community. This proposal targets 250 acres, or 50 acres per year for five years, because the work can be reasonably accomplished with current staffing levels.

#### **b. Rationale and significance to Regional Programs**

**1994 Fish and Wildlife Program Goals:** Riparian reforestation will improve habitat for a community of native plants and animals. Reforestation will benefit the great blue heron, raptors (including bald eagles), and herptiles (including the sensitive red-legged frog). There is potential for a future reintroduction of the Western pond turtle. Habitat will be restored for neo-tropical migrants, some of which are extirpated in Oregon. The low elevation riparian forest is especially important to spring breeding migrants, who cannot reach the snow covered upper elevations. In the long term, site reforestation will benefit adjacent waterways, and provide shade along anadromous rivers (Sandy and Columbia Rivers).

**Mitigation:** Riparian reforestation will mitigate riparian forest losses upstream of Bonneville dam. As such, in-kind, not in-place mitigation would result.

#### **c. Relationships to other projects**

The proposed project takes place in close proximity to the Lower Columbia River Wetlands Restoration, Monitoring and Evaluation program (project 99-025-00). Separate proposals are submitted for each project due to the differing nature of the work.

**d. Project history** (for ongoing projects)

**1997:** Pilot Project: The Forest Service initiated a pilot restoration project in November, 1997 with partners Friends of Trees, American Forest's Global Releaf program, and the National Fish and Wildlife Foundation. The Forest Service cleared 11 acres of blackberries with hydro-ax.. American Forest's Global Releaf program, the National Fish and Wildlife Foundation and Forest Service paid for trees. Friends of Trees organized and supervised one hundred volunteers who planted three acres in one day with Oregon ash, black cottonwood and willow. Cost:

Findings: Willow cutting survival was poor; the identified cause was poor training and supervision of planting volunteers. Remedied by better volunteer training.

**1998:** Eight acres planted February, 1998. American Forest's Global Releaf program and the National Fish and Wildlife Foundation paid for trees. Friends of Trees organized and supervised volunteers. Cost:

Findings: 1) Good tree survival until summer, 1998 when girdling by voles was found. Long-term survival unknown at this time, but girdling remedied by using planting tubes. 2) Trees struggling against competing vegetation. Remedied by better site preparation, and better maintenance. Methods include one or more of the following: two cycles of herbicide spraying, grubbing out planting sites, using weed mats, grubbing around planted trees.

**1999:** Project Number: First year of BPA funding. Site preparation complete (Forest Service paid for hydro-ax in summer, 1998 and BPA 1999 funding requested to pay for site grubbing in October, 1999. First planting scheduled for December 11 and 12, 1998; second planting scheduled for January 30 and 31, 1999. Friends of Trees will organize volunteer planters, Trees paid for by Forest Service "Chief's NRA" grant, Lower Columbia River Estuary Program and Metro. No results available at time of this submittal (December 9, 1998).

**e. Proposal objectives**

Objective 1. Site Preparation: Clear unwanted vegetation from 50 acres per year, using a variety of methods (mechanical, manual, prescribed fire, spot herbicide treatment, etc.).  
*Outcome: 50 acres prepared for planting annually.*

Objective 2. Planting: Plant 50 acres per year of native riparian forest tree and shrub species. Utilize volunteers to build ownership in the local community and to leverage funds. Adequately train and supervise volunteers to ensure quality planting. Collect native plant stock through purchase or cuttings.  
*Outcome: 50 acres planted annually.*

Objective 3. Maintain Seedlings: Maintain acreage planted in previous years. Either grub unwanted vegetation or mulch seedlings to reduce competition. Three years of intensive maintenance are expected for any planted area, so acreage in this task will grow by 50 acres each year until year 3. Utilize volunteers to maintain seedlings to build ownership and to leverage funds.  
*Outcome: 50 acres + maintained annually, up to 150 acres.*

Objective 4. Monitor Planting: a) Photo document long term progress of reforestation. b) Determine annual success of planting; determine any causes of planting failure. c) Correct causes of planting failure.  
*Outcomes: Photo monitoring slides/photos. Annual report on planting success and altered planting methods.*

Objective 5. Monitor Wildlife Populations: Determine whether reforestation benefits wildlife as expected. Monitor neo-tropical migrant populations because they are target species, and because 4 years of baseline monitoring exist.  
*Outcome: Annual neo-tropical migrant population report.*

Objective 6. Establish HEP Values: The need for a HEP analysis was not known when the FY99 project was submitted. Therefore, the budget and schedule did not program funds or time for this task. We are requesting \$5,000 for a HEP analysis in FY2000. Task to be subcontracted to Ducks Unlimited and university of Idaho.  
*Outcome: HEP values.*

**f. Methods**

**Research Native Plant Communities** (task completed by Forest Service in 1997): The Forest Service proposes to re-establish the native community of the Columbia River bottomland riparian forest. The Forest Service researched current plant inventories of undeveloped Columbia bottomlands (Christy), early explorer journals and historical photos, and interviewed long time residents for references to the pre European settlement plant communities (Conley). Records of the exact composition of the native forest are

not available, but numerous sources indicated a native community of black cottonwood, Oregon ash, big leaf maple, various willow, and native shrubs and forbs. Most historic sources discuss the tree layer, fewer discuss the shrub layer, and discussion of the forb layer is almost non-existent.

**Develop Detailed Reforestation Design** (task completed by the Forest Service in 1997): A detailed reforestation design stratified the land by slope, soils and utility line requirements. Approximate compositions of tree and shrub species were outlined. Native forbs are expected to emerge from the seed bank.

### **Objective 1: Site Preparation**

Task a. Site Preparation The Forest Service would initiate a series of site preparation and planting experiments to find successful methods to re-establish native plants in a highly altered and invaded landscape. Plots would be established for the following strategies: burn/plant, spray/plant, burn/spray/plant, plant through existing vegetation, mow/spray/plant. Burning is a viable tool, but will require a high degree of planning and coordination. Burning will be constrained by extreme winds, high humidity, and proximity to an urban area and to the Troutdale airport. Subcontractors would be hired to mechanical brush clearing and herbicide spraying. *Rodeo* herbicide would be applied only as needed in spot treatments and only to resprouting stems of cleared plants.

Site preparation has been a significant cost to the Forest Service to date. Forest Service funding for this task can only allow small annual acreages to be prepared for planting. Forest Service funding cannot support reforestation on the desired scale.

*BPA funding is requested for this objective.*

### **Objective 2: Planting**

Task b. Planting: The Forest Service and partner Friends of Trees (a successful Portland-based volunteer tree planting organization) would select planting areas and dates. Trees and shrubs would be planted in the compositions described in the detailed Reforestation Design. Forbs are expected to emerge from the native seed bank. Dense planting is desired to create shade as a means to control shade-intolerant invasive plants. A mixture of whips, container stock and on-site cuttings would be planted.

Friends of the Trees would train and manage volunteer planters with Forest Service oversight. BPA funding is **not** requested for this objective. Friends of Trees and other partners would fund this objective.

### **Objective 3: Maintain Seedlings**

Task c. Maintain Seedlings: Friends of Trees would maintain seedlings planted by their group (grubbing, mulching, etc). BPA funding is **not** requested for this objective.

#### **Objective 4: Monitor Seedlings**

Task d. Visual Documentation: Visual documentation of long term reforestation progress would be created through annual collection of photos and slides. The Forest Service would establish one representative photo monitoring point per 50 acre planting area. A minimum of 4 slides and 4 photos per year (one photo and one slide to east, south, west, north) would be collected. Photos/slides would be maintained in binder in Forest Service office.

Task e. Measure Seedling Survival: Seedling survival would be measured twice per year. Causes of seedling failure (e.g. poor planting methods, poor planting conditions, poor stock) would be assessed. Site preparation or planting methods would be altered as monitoring indicates. An annual report would document results.

BPA funding is **not** requested for this objective. The Forest Service and Friends of Trees would fund this objective.

#### **Objective 5: Monitor wildlife populations**

Task f: Monitor neo-tropical bird wildlife populations: Neotropical migrant bird species are proposed as the indicator wildlife population. A neotropical monitoring system was established at Sandy River Delta in 1994, and four years of data have been collected. Bob Altman of Avifuana Northwest (the existing contractor) would continue the monitoring program.

BPA funding is **not** requested for this objective. The Forest Service would fund this objective.

#### **Objective 6: Establish HEP Values**

Task g: Establish HEP Values: The need for a HEP analysis was not known when the FY99 project was submitted. Therefore, the budget and schedule did not program funds or time for this task. We request funds for a HEP analysis in FY2000. Task to be subcontracted to Ducks Unlimited and University of Idaho.

*BPA funding is requested for this objective.*

**Environmental protections/Risks to Habitats, organisms or humans:** The existing wildlife habitat quality is quite low, due to invasive plant species. Temporary disruption to wildlife would be more than compensated by enhanced habitat.

No endangered or threatened plant and animal species are presently located in the project area, and none will be affected by the planting project.

Forest Service guidelines for herbicide application would be strictly followed to ensure operator, public, fish and wildlife safety. Only *Rodeo* (a glyphosphate approved for riparian areas) would be used. Glyphosphate breaks down quickly, and has been shown non-toxic to fish and wildlife. Signs would be posted to inform the public of herbicide application dates and locations.

**Sample size:** 50 acres per year are proposed for restoration. This acreage was chosen because it can be reasonably accomplished given current staffing levels, and because it has a reasonable chance of funding success with partners. A larger acreage may not be internally feasible, and may have difficulty obtaining enough grant funds for plant materials.

**Expected results:** The long term expected result is re-establishment of the Columbia River floodplain riparian forest. The Sandy River Delta reforestation will create a large block of habitat which is now regionally scarce. Riparian reforestation will improve habitat for neo-tropical migrants (some of which are extirpated in Oregon), herptiles (including the sensitive red-legged frog and potentially for Western pond turtles), the great blue heron, raptors (including bald eagles) and a community of native plants and animals. In the long term, site reforestation will benefit adjacent waterways, and provide shade along anadromous rivers (Sandy and Columbia Rivers).

To our knowledge, no one else has tried to restore such a large expanse of riparian bottomland forest along this stretch of the Columbia for the purpose of native plant and animal community enhancement. Our problems with invasive and noxious weeds are common in this region. Our site prep and planting experiments (burn/plant, spray/plant, burn/spray/plant, etc.) would have applicability for other land managers in the area.

#### **g. Facilities and equipment**

- Mechanical clearing: The Forest Service has had great success with a “hydro-ax” which is hired by contract.
- Herbicide spraying: The Forest Service hires contractors for this task.
- Planting tools: the Forest Service has adequate planting tools for use by volunteers such as shovels, planting shovels, polaskis, McClouds, rock bars, rebar.
- Vehicles: the Forest Service has adequate vehicles to carry equipment.
- Monitoring equipment: the Forest Service has adequate equipment for photo monitoring. The neotropical monitoring contractor supplies his own equipment.
- The Forest Service has adequate office space and computers; no lab space is needed.

#### **h. Budget**

Site preparation has been a significant cost to the Forest Service to date. Forest Service funding for this task can only allow small annual acreages to be prepared for planting. Forest Service funding cannot support reforestation on the desired scale. The \$19,000 would be used to contract a “hydro-ax” to clear blackberries and a contractor to spray herbicides.

We also request \$5,000 to prepare HEP values. Need for HEP analysis was not known when the FY99 proposal was submitted, but we have enough baseline information to be able to generate the values.

## **Section 9. Key personnel**

**Dobson, Robin.** Restoration Project Manager. Botanist/Ecologist, USDA Forest Service, Columbia River Gorge National Scenic Area. Full time appointment with Forest Service, approximately 6 weeks per year dedicated to Sandy River Delta project. Phd, Plant Pathology, Washington State University (1983); MS, Plant Pathology, Washington State University (1978); BS, Biochemistry, UC Davis (1972). Currently manages Sandy River Delta restoration. Restoration manager for East Pit (quarry pit) restoration, 1997/1998 and Historic Columbia River Highway revegetation, 1998.

**Allison, James.** Restoration Project Manager for Friends of Trees. Natural Area Program Manager for Friends of Trees. BA, English, UCLA; current graduate student in Environmental Science at Portland State University. Oversees the installation and maintenance of native plants on 25,000 acres of public property each year. Recruits and trains volunteers for planting. Six years experience in environmental education and volunteer management. Currently recruits and manages volunteer planters at Sandy River Delta.

**Kelly, Virginia.** Sandy River Delta Team Leader. Planning Team Leader, USDA Forest Service, Columbia River Gorge National Scenic Area. Full time appointment with Forest Service, approximately 4 weeks per year dedicated to Sandy River Delta project. MLA, Landscape Architecture and Environmental Planning, UC Berkeley, 1989; BA Biology, Oberlin College, 1982. Over 10 years experience in Environmental Planning. Responsible for overall Sandy River Delta coordination, grant writing, grant reporting, budget management.

**Larson, Richard.** Project Biologist. Fish/Wildlife Biologist, USDA Forest Service, Columbia River Gorge National Scenic Area. Full time appointment. BS, Fisheries Biology, Oregon State University (1974).. Over 15 years with federal government in fish/wildlife program management.

**Anderson, Eric.** Project Assistant. Biological Technician, USDA Forest Service, Columbia River Gorge National Scenic Area.. Temporary appointment with Forest Service, approximately 6 weeks per year dedicated to Sandy River Delta project. BS, Biology, University of Wisconsin (1993). Currently assists in Sandy River Delta

restoration; orders supplies and equipment, field review when project manager is unavailable.

**Altman, Bob.** Neo-tropical Monitoring Sub-contractor. Principal, Avifauna Northwest.

## **Section 10. Information/technology transfer**

To our knowledge, no one else has tried to restore such a large expanse of riparian bottomland forest along this stretch of the Columbia for the purpose of native plant and animal community enhancement. Our problems with invasive and noxious weeds are common in this region. Our site prep and planting experiments (burn/plant, spray/plant, burn/spray/plant, etc.) would have applicability for other land managers in the area.

Results would be shared through informal networking with other land managers in the area.

**Congratulations!**