

Riparian Planting Plan - 2018

All Ecology grant recipients are required to submit a riparian planting plan to the Ecology Project Manager whenever any planting is to be done that will be funded in part or whole with Ecology funding or when it is being used as match for Ecology funding. When planting is to occur at multiple sites as part of a single agreement, individual riparian planting plans must be submitted for each site. All restoration activities must be consistent with the current NRCS standards and Technical Guide¹ and the Stream Habitat Restoration Guidelines². An alternative plan can be submitted in lieu of this template, as long as it contains all elements described herein. In the case of match projects, planting plans developed by partnering entities is acceptable.

AGREEMENT / RECIPIENT INFORMATION	
Grant Number: WQC-2018-PierCD-00165	Grant Recipient: Pierce Conservation District
Project Manager/Contact: Jayme Gordon (jaymeg@pierccd.org , (253) 845-9770)	
PROJECT INFORMATION	
Property / Site Name: South Prairie Creek Preserve (SPCP)	Implementation Target Date: September 2018-September 2021
Closest Water Body and Type: South Prairie Creek, Puyallup River watershed (WRIA 10)	

PROJECT LOCATION
<i>Briefly describe location. Include lat / long³, Township/Range/Section, river mile, and any other landmarks or coordinates available.</i>
The project site is located approximately one mile southwest of the town of South Prairie in Pierce County. Site address is 13518 Pioneer Way East, Orting 98360. Latitude is 47.136396; longitude is -122.118594.

PROJECT / SITE DESCRIPTION
<i>Discuss historic condition, site potential, plant communities, and stream condition. Also, discuss water quality problems and causes, current condition, etc.</i>
The SPCP is comprised of land owned by the Pierce Conservation District (approx. 100 acres) and Pierce County Surface Water Management (approx. 25 acres), and contains a little more than 0.5 miles of South Prairie Creek. Two tributaries run through the property: one from the south, and one that collects water at the base of a large plateau on the north side of the property. South Prairie Creek supports many species of salmonids, including ESA-listed chinook and steelhead.
Before European settlement, this area was used as a seasonal hunting and fishing area by members of the Puyallup and other tribes. For much of the 20 th century, the land at SPCP was used as a dairy and for other agricultural practices. Today, the section of stream at SPCP is incised, disconnected from its floodplain, and has seasonal water velocities and streambed material that is inhospitable to salmon. Some of the streambanks have a narrow strip of mature trees (e.g. cottonwood and maple), but there is also a lot of blackberry along the stream edge, and former pasture land

¹ http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/references/?cid=nrcs143_026849.

² Cramer, Michelle L. (managing editor). 2012. Stream Habitat Restoration Guidelines. Co-published by WDFW, WDNR, WDOT, and Ecology, Wa. State RCO, Puget Sound Partnership, and the USFWS. Olympia, Wa. <http://wdfw.wa.gov/publications/01374/wdfw01374.pdf>.

³ <http://www.latlong.net/>.

dominates the site. Additionally, South Prairie Creek has TMDLs for water temperature and fecal coliform bacteria.

RESTORATION GOALS

What are the goals of your restoration and planting efforts? This may include water quality goals, fish/wildlife goals, and others.

SPCP is the site of a salmon habitat restoration project slated for construction in 2019. This project is multi-faceted and includes the installation of channel-spanning structures in the mainstem to recruit rocks and gravels suitable for salmon spawning and raise the level of the streambed. Another component is to recreate a historic side channel through the north fields. When completed, this project will restore approx. 0.5 miles of South Prairie Creek, create 0.5 miles of side channel habitat, improve spawning and refugia conditions, and increase groundwater recharge and flood storage capacity.

Additionally, this project will include implementation of 37 acres of riparian and floodplain planting. This revegetation is the project component covered by the Centennial grant, and will provide a number of critical ecological benefits, including terrestrial wildlife habitat, organic material for aquatic insects, shade to reduce water temperatures (vital for salmon health and to address one of South Prairie Creek's TMDLs), floodplain roughness, and more.

GENERAL DESCRIPTION OF PLANTING

Discuss how the site should look after planting. How will the plants be distributed across the project site? Will they be evenly distributed or planted in groups? Are you planting a diversity of trees, shrubs, forbs, and grasses, or are there limitations to what you are planting and why?

At the conclusion of this project, 37 acres of former pastureland will be transformed into a riparian floodplain forest. A wide variety of native tree, shrub, and emergent species will be planted to account for the different microhabitats found on the site. Species best suited for the various microhabitats (e.g. wetland, seasonally wet, high/dry) will be grouped together.

Throughout much of the site, plants will be planted in rows to allow for efficient maintenance with a tractor mower. Rows are a minimum of 10' apart; plants are spaced 5' apart on average within rows. In other areas, plants will be distributed randomly (trees an average of 10' apart on-center, shrubs 5' on-center, emergent 1-3' on-center). Maintenance in these areas will be done by hand or with tools other than a large tractor mower. The general density goal for the site is 680 stems/acre. Modifications to increase the density may be made under certain circumstances – for example, tightly spacing live stakes on bank of new side channel to discourage bank erosion.

Note: Cottonwood, willow, red osier dogwood, and possibly other species may be planted as live stake cuttings. There is no option for live stakes in the table below. Additionally, some emergents (and possibly other species) may be planted as plugs or as seed. There is no option for plugs or seed in the table below. Plants that may be purchased as live stakes, plugs, or seed will be counted as bare root for the purpose of the table below.

PLANTING SPECIES AND TYPE				
<i>List each species (common or latin name), type of planting, and number to be planted (of each species, or combination of species if unknown). We understand that this may be an estimate only and species composition may change as site conditions are better understood. Please copy and paste more lines as necessary.</i>				
Species: Douglas fir	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 660
Species: Grand fir	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 475
Species: Western red cedar	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 2260
Species: Sitka spruce	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 550
Species: Western hemlock	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 100
Species: Black cottonwood	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 2340
Species: Oregon ash	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 1070
Species: Big leaf maple	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 2065
Species: Red alder	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 730
Species: Cascara	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 540
Species: Pacific willow	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 215
Species: Sitka willow	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 475
Species: Red osier dogwood	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 705
Species: Pacific crabapple	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 465
Species: Beaked hazelnut	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 655
Species: Serviceberry	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 340
Species: Black hawthorn	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 670
Species: Indian plum	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 1710
Species: Red elderberry	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 1590
Species: Vine maple	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 1085
Species: Pacific ninebark	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 1260
Species: Salmonberry	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 660
Species: Black twinberry	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 500
Species: Thimbleberry	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 1560
Species: Snowberry	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 1165
Species: Nootka rose	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 480
Species: Swamp rose	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 50
Species: Slough sedge	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 1 gallon	Amount: 100

Species: Sawbeak sedge	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 4", 1 gallon	Amount: 50
Species: Dagger leaf rush	<input checked="" type="checkbox"/> Bare root	<input checked="" type="checkbox"/> Pots	Pot Size: 4", 1 gallon	Amount: 50
<i>Who will be installing the plants (list all that apply)?</i>				
<input checked="" type="checkbox"/> Our Staff <input checked="" type="checkbox"/> WCC Crews <input checked="" type="checkbox"/> Volunteers <input checked="" type="checkbox"/> Other: other contracted planting crew(s)				

NOXIOUS WEED MANAGEMENT

Describe the noxious weeds present on the site, which species are of most concern, which species will be treated / managed, and what pre-planting and post-planting treatment / management you are planning.

As noted above, most of the planting area is former agricultural pastures. There are some significant patches of reed canary grass within the planting area, and blackberry is present along much of the planting site's perimeter. Patches of thistle and poison hemlock have also been identified on the site. All of these species will be addressed and targeted during site prep and post-planting maintenance. See the Vegetation Management Plan for more detail about pre-planting and post-planting weed management strategies at this site.

PLANTING SITE PREPARATION

Describe how you will prep the site for planting. Include weed control, mulching, soil amenities, deer or livestock exclusion fencing, or any other site prep conducted before or during the planting.

Planting site preparation will emphasize mowing and herbicide treatment of grass and weeds. Additional site prep includes setting up the planting rows to ensure clearance for the mowing tractor. See the Vegetation Management Plan for more detail about site prep strategies planned for this site.

PLANTING SITE MAINTENANCE

Describe how you will maintain plants during the life of the agreement. Discuss browse protection, mortality replacement, or any other methods you will use to increase survival. Also, will plants need / receive maintenance after the project period? Why or why not? How long?

Maintenance of the plantings is crucial to successful plant establishment. Mowing and clearing grass from around the plants is considered a fundamental maintenance practice at this site. Spot treatment with herbicide in rings around plants and targeting re-infestations of blackberry, thistle, and poison hemlock are also priority actions. Tree protector tubes will be installed on plants, and herbivore repellent will be used to deter elk/deer browse. See the Vegetation Management Plan for more detail about anticipated maintenance strategies at this site.

IRRIGATION

Will your plantings be given supplemental irrigation? Yes No

If not, why not? Do not have budget and resources for a temporary irrigation system over such a large area. There is generally good water supply; site is not especially droughty or excessively drained. May utilize a watering truck if extreme drought conditions are causing significant plant mortality.

<i>If yes, please answer the remaining questions⁴.</i>
<i>How long do you intend to irrigate the plants (months per year and number of years)?</i>
<i>How will you irrigate the plantings?</i> <input type="checkbox"/> With On Site Ground Water <input type="checkbox"/> With On Site Surface Water <input type="checkbox"/> Transporting It In From Another Location. <i>From where?</i> <input type="checkbox"/> Other (<i>please describe</i>):
<i>Will you be irrigating a total of ½ acre or less?</i> <input type="checkbox"/> Yes <input type="checkbox"/> No, more than ½ acre <input type="checkbox"/> Not Sure
<i>Is the project within the 'place of use' of a water right?</i> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure
<i>Do you need a temporary water right permit⁴?</i> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure
<i>If yes, have you already obtained one?</i> <input type="checkbox"/> Yes <input type="checkbox"/> No, but have applied <input type="checkbox"/> No, and I haven't yet applied

PLANTING SITE MONITORING
<i>What is your planting goal at the end of the project period?</i>
85% survival Density Other:
<i>How was your plant goal determined? Please describe.</i>
Per discussions with Ecology staff, then written into the contract for the Centennial Grant award.
<i>How will you measure this goal? Please describe.</i>
An estimated 10-12 80-foot diameter circular plots covering a total area of 5,026 sq. ft. each will be established to monitor the vegetative composition of the restoration plantings. Plot locations are randomly selected using the ArcMap Random Point Generator tool. Each plot contains three 25-foot transects that radiate out from the center of the plot. This will account for at least 5% of the surface area of the planting site. The percent cover of each species will be monitored using line point intercept methodology (LPI). The health and survival of every plant within each monitoring plot will be tracked by collecting data on each plant's survival, vigor, height and any damage; this will account for at least 10% of all plants installed on the site. Every plant within each monitoring plot will receive a plant ID number that sticks with that individual plant through Year 10 of monitoring or until the plant dies. This allows us to track the health of each specific individual plant over many years.
<i>What is your timeline for monitoring or project tracking? How frequently will you visit and for how long?</i>
Formal monitoring of the planting will occur once a year during the summer growing season. Informal assessments of the planting will be made throughout the year during other site visits. Monitoring under this grant will occur from 2019-2021; initial monitoring began in 2018. Monitoring may continue as resources allow and/or until the site has reached a reasonable level of success.
<i>What other monitoring, short and long term, will you do to determine whether your planting goals have been achieved? Please describe.</i>

⁴ If you cannot answer one or more of these questions, or think you may need a temporary water right for irrigation, please contact the Project Manager or Water Resources Customer Service Line (Ecology, CRO) at 509-575-2597.

To the degree possible, baseline monitoring will occur before the initial installation of plantings. Monitoring under this grant will occur once a year for Years 1, 2, and 3. Monitoring will continue in Years 5 and 10, dependent on funding and staff capacity. Survival, health, vigor and height of each plant within the monitoring plots are the metrics we will use to determine if the 85% survival goal has been met. We will also use LPI methodology to track the percent cover of each species within our plots over time.

Are you doing any water quality, shade, or other environmental data collection?

Yes⁵ No *If yes, please describe:* Percent cover by species will be tracked within each of the monitoring plots. This will help inform whether our management practices are working to reduce the cover of invasive species and increase the cover of native species. With LPI monitoring, we will also track the development of structural diversity within the planting by determining how many species compose the varying canopy layers, as well as the average height of woody and herbaceous plants.

If yes, have you or are you developing a QAPP for this agreement? Yes No N/A

PROJECT SIZE

What is the size of the area to be planted, treated, enhanced, and/or protected? Please provide all of these metrics if you can: Acres: 37 Square Feet: Stream Feet: approx. 3300 linear feet (mainstem South Prairie Creek)

1 or both sides of stream: One: X Two: Other: The majority of this planting will be in the fields north of South Prairie Creek (approx. 37 acres). There may be some planting on the south side of the stream in areas disturbed during construction.

PLANTING SITE RIPARIAN BUFFER

What will be the minimum width of the buffer?

35 ft. 50 ft. 75 ft. Other: 200'+

How has the Ordinary High Water Mark (OHWM)⁶ been determined for this site?

The OHWM was determined by engineering consultants who designed the instream, side channel, and floodplain structures. Bankfull flow approximately equivalent to the annual flood event (Q1) of 1500 cfs was utilized as the OHWM.

If any or all of the project site will not meet the minimum required buffer size⁷, please describe why:

LIVESTOCK

Are livestock present or near? Yes No *If yes, what type?*

Will there be a livestock exclusion fence installed? Yes No

If yes, describe the fencing and who will install and maintain it:

If no, why? Livestock cannot access plants Fence already in place

⁵ May require the development of a QAPP. Discuss with Ecology Project Manager.

⁶ For information on determining OHWM, see: <https://fortress.wa.gov/ecy/publications/documents/0806001.pdf>.

⁷ Refer to the appropriate Funding Guidelines for buffer size requirements, ask Ecology Program Manager if unsure.

Other:

CULTURAL RESOURCES REVIEW

Have you initiated a 05-05 / 106 cultural resources review⁸? Yes No

If no, please state when you expect it to be initiated:

If yes, please describe where it is at in the process: A final report of surveys and discoveries, including monitoring plan and site treatment, is being prepared by archeological consultants. An Inadvertent Discovery Plan will also be included with the final report. To date, the cultural resources review has followed the Army Corps of Engineers' Section 106 process. Project sponsors will insure that cultural resource requirements for the WA State Recreation and Conservation Office and Department of Ecology are also met if not otherwise covered under the Army Corps review.

Have you developed an Inadvertent Discovery Plan (IDP)? Yes No In process

OTHER

Provide any additional information that will help us understand the project better.

⁸ Go to: <http://www.ecy.wa.gov/programs/wq/funding/Res/EnvRev/EnvRevMain.html> for Ecology cultural resource documents.

RIPARIAN PLANTING PLAN APPROVAL PAGE
GRANT NUMBER: WQC-2018-PierCD-00165
RECIPIENT NAME: Pierce Conservation District
PROJECT SITE NAME: South Prairie Creek Preserve
<i>Once approved by the recipient and the Ecology Project Manager, this document must be signed by both parties before any implementation can begin. Failure to do so could result in the rejection of any related reimbursement request.</i>

Approval Signatures

 Recipient Organization Manager

 Date

 Recipient Project Manager

 Date

 Ecology Project Manager

 Date

Appendix A. Project Site Map

Attach a full-page aerial photo or detailed drawing of the site and adjacent water body. Indicate within that map, 1) the project boundary, 2) locations of plants and plant species or types, 3) location of exclusion fencing (existing and/or new), 4) existing plant communities, and 5) other BMPs within boundary. Map should include T/R/S lines and numbers and needs to be clear and detailed.

Appendix B. Project Site Photos

Please attached “before” photos of the project that are representative of the site conditions, problems, and cause of problems, particularly in relation to the vegetation and planting effort.