# Vegetation Management Plan
# South Prairie Creek Preserve
# South Prairie Creek TMDL Response (WQC-2018-PierCD-00165)
# Centennial Clean Water Fund Grant, Washington State Department of Ecology

As part of a large-scale, multi-faceted salmon habitat restoration, floodplain reconnection, and water quality improvement project known as the South Prairie Creek Restoration (RM 4.0-4.5), an estimated 37 acres will be planted with approximately 25,000 native trees and shrubs on property owned by the Pierce Conservation District and Pierce County, referred to collectively as the South Prairie Creek Preserve.

Planting began in October 2017. This effort, referred to as Phase 1, will continue in areas outside of designated construction clearing limits. The remainder of the site, referred to as Phase 2, will be planted after earth moving, excavation, and other construction activities have been completed.

The purpose of this document is to describe the anticipated and/or potential best management practices that will be employed to meet the 85% plant survival metric required in Centennial Grant WQC-2018-PierCD-00165.

## Site Preparation

The vast majority of this site is former pasture fields. As such, it is comprised of a mix of native and non-native grasses, including reed canary grass. Areas of invasive and noxious weeds are also present, such as poison hemlock and thistle. Nettle is the primary forb throughout the fields. Blackberries dominate much of the planting area edge, and a mix of native trees and shrubs exist along some of the edge habitat as well.

Prior to plant installation, certain actions can take place to prepare the site for planting. At this site we intend to implement the following:

1. **Mowing**
   Planting areas may be mowed several times throughout the growing season. A final mowing to remove excess vegetative matter will occur shortly before planting.

2. **Spraying**
   Invasive and noxious weeds within the planting area will be prioritized for herbicide treatment. Additionally, areas on-line for planting may receive focused or additional herbicide applications.

3. **Site Layout**
   Where feasible, plants will be set out in rows that run more or less parallel to the stream(s). The purpose for this is so that annual mowing between rows can be done with a tractor to more efficiently cover the large planting area. Rows are expected to be spaced 10’ apart to allow for adequate clearance of the mower. Within rows, plants may be spaced an average of 5’ apart on-center.

## Plant Installation

Appropriate plant species will be selected based on knowledge of species and plant communities common to the project area, existing conditions, anticipated future conditions resulting from activation

of the in-stream and side-channel work, and microhabitats. Choices of plant stock will be based on a number of factors, including (but not limited to) time of year, availability, and budget.

Additionally, certain actions may be taken at the time of plant installation to increase the success of transplanting and establishment. This may include the following:

1. **Scalping**
   To the greatest degree possible, planting crews and volunteers will be instructed to scalp grass and weeds from the area where the plant will be planted. This will reduce immediate competition for soil moisture and other resources and minimize the need for certain maintenance actions.

2. **Tubes**
   Plant protector tubes (24" tall) are expected to be prescribed for most, if not all, of the plants at this site. When installed properly, plant tubes deter rodent browse, deter deer/elk browse (of smaller plants), and provide some protection from line trimmers or mowers.

3. **Weed Suppression**
   The use of burlap and mulch in the immediate vicinity around the plant has shown – in our experience – to provide helpful suppression of grass and other weeds, especially in the first year after planting. This reduces competition for soil moisture, sunlight, and other resources, and also makes the plant more visible, which is helpful for maintenance and monitoring purposes. We typically place 3-4 coffee bean bags around each plant, which provides two layers of biodegradable burlap, and cover that with 4-6" of hogfuel mulch.

<u>Post-Installation</u>
Once planting has occurred, maintenance of the plants will take place for a minimum of three years. Maintenance activities will occur year-round as needed, but be concentrated during the spring and summer growing months. In all instances, maintenance actions will be decided based on a number of factors including the site needs, staff/crew capacity, budget, efficiency, and feasibility. Adaptive management principles will be employed to respond to on-the-ground results and help ensure planting success.

Maintenance activities taken to increase the success of plant establishment may include the following:

1. **Mowing**
   Clearing of grass (or other weeds) will be conducted with a tractor mower, brush cutter, line trimmer, or similar tools to most efficiently and effectively reduce direct competition with plants and to allow for ease of movement through the site. Mowing should occur at least once each growing season, and more as needed (and as capacity allows).

   Where plants are planted in rows, mowing will occur between the rows, and grass removal within the rows will be done with line trimmers as needed. In areas where plants are planted in a random layout, tractor mowing is not expected to be feasible, so line trimmers or other methods will be utilized.

2. **Spraying**
   Spot treatment with herbicide of grass and other weeds immediately around each plant will occur a minimum of once a year to suppress competition and eliminate the risk of plants being smothered when grass dies off in the fall. Areas with intense and persistent growth of invasive or noxious weeds will receive additional attention. Planting areas will be assessed for the need of additional herbicide treatment during the growing season.

3. **Weed Suppression**
   Where feasible and when determined to be an appropriate use of resources, additional mulch and/or burlap may be added around plants to provide the benefits of soil moisture retention and reduce competition from grass and other weeds.

4. **Animal Browse**
   Located in the urban-rural interface, this site is known habitat for a wide variety of birds (including hawks and eagles), amphibians, reptiles, beavers, voles/moles, deer, coyotes, black bear, and other animals indigenous to the area. An elk herd is also known to frequent this site and the surrounding area. While tree tubes are expected to prevent damage from rodent browse, spray repellant will be applied to plants to deter elk browse, in particular. Effectiveness of the spray will be assessed, with different formulations or approaches utilized as needed.

5. **Tube Removal**
   Tree protector tubes will be removed when plants become successfully established, if the plants die, or when the tubes are otherwise no longer needed around the plant. Tree tubes will be removed during regular maintenance or monitoring visits. All tree tubes should be removed by the time regular maintenance activities cease.

6. **Replanting**
   Replanting will occur as needed to meet the 85% survival requirement.

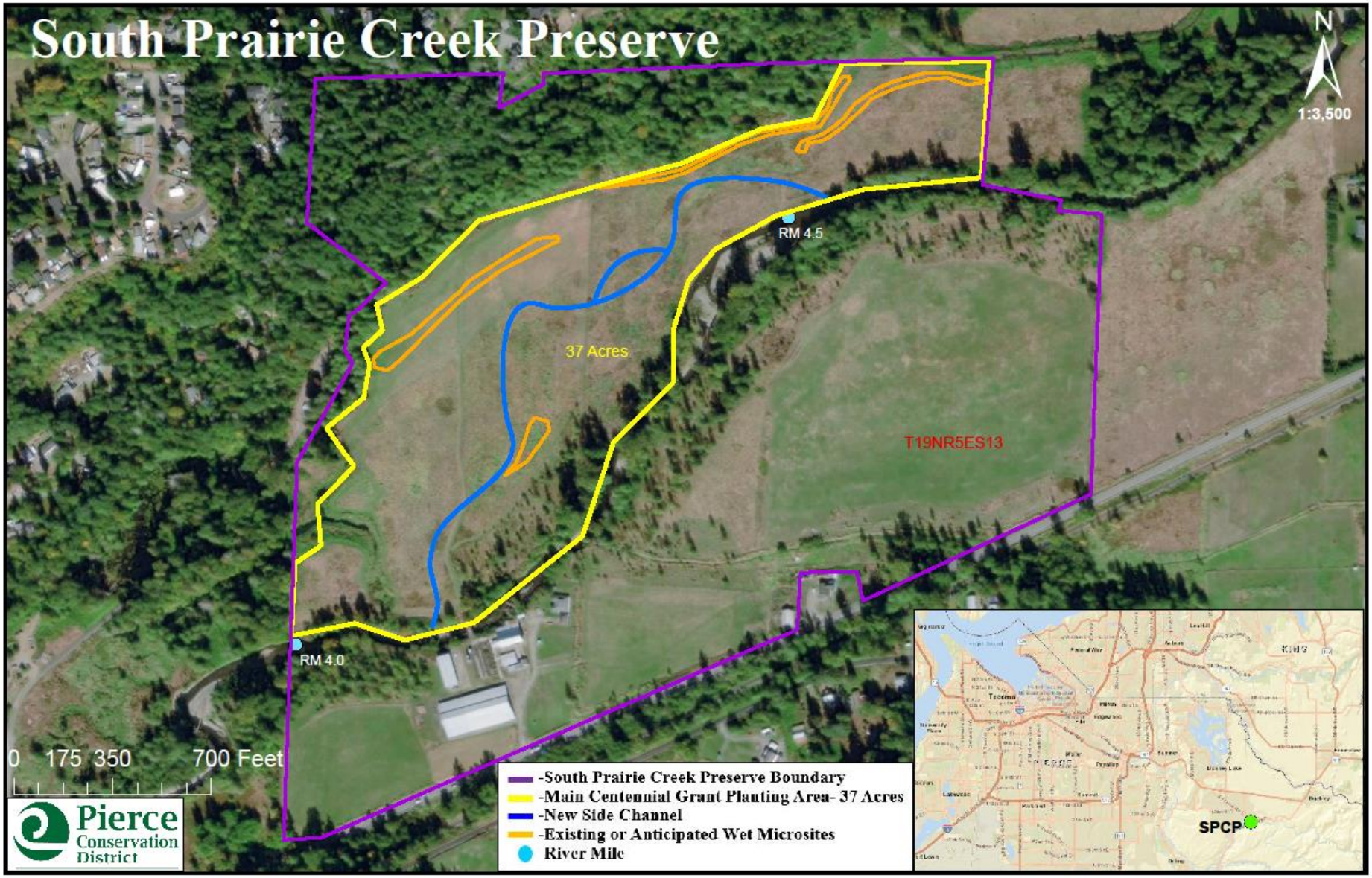
<u>Monitoring</u>

Planting areas will be regularly assessed on an informal basis, as well as during an annual formal monitoring visit. Information about plant health, vegetative cover, and other useful information will be collected from established monitoring plots, line point intercept transects, and photo points. Information gathered during monitoring will inform project managers of the following:

- If certain species are establishing more successfully than others
- If certain species or areas are experiencing die off for some reason
- If animal browse or other factors are compromising plant establishment
- If maintenance activities need to be modified to improve plant survival
- If replanting needs to occur to meet the 85% plant survival criteria

Formal monitoring of the site will occur for the first three years after planting, and for longer as time and resources allow. At some point in the future, the site will be considered to have reached a state of successful establishment, and regular maintenance and monitoring activities will cease.

Results from the annual monitoring visits will be kept on file and submitted to Ecology upon request.


South Prairie Creek Preserve
N
1:3,500
RM 4.5
37 Acres
T19NR5ES13
RM 4.0
0 175 350 700 Feet
Pierce Conservation District
-South Prairie Creek Preserve Boundary
-Main Centennial Grant Planting Area- 37 Acres
-New Side Channel
-Existing or Anticipated Wet Microsites
River Mile
SPCP


**South Prairie Creek**

Planting Areas

N

0 500 1,000 Feet

WGS 1984

September 29, 2016
B. Zierdt

South Puget Sound Salmon Enhancement Group