



**CONSERVATION ENHANCEMENT ACTIVITY**

**E391B**

**CONSERVATION STEWARDSHIP PROGRAM**

**Increase stream shading for stream temperature reduction**

**Conservation Practice 391: Riparian Forest Buffer**

**APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Pasture; Range; Forest; Associated Ag Land; Farmstead**

**RESOURCE CONCERN: Water**

**PRACTICE LIFE SPAN: 15 Years**

**Enhancement Description**

Riparian area tree canopy cover density is increased and the extent of the forested riparian area is increased to provide greater stream shading.

**Criteria**

- Existing buffer width shall be at least 35 feet or (if applicable) the minimum State buffer-width requirement, whichever is greater. Buffer width shall be increased to 60 feet and may be extended up to 180 feet or the State-allowed maximum width.
- Where necessary to improve stream shading, increase canopy cover density in the existing buffer area.
- In addition to providing shading, establish plant communities that address aquatic and terrestrial wildlife and pollinator needs and have multiple values such as habitat enhancement and nutrient uptake.
- Dominant vegetation will consist of existing, naturally regenerated, or seeded/planted trees and shrubs suited to the soil and hydrology of the site and the intended purpose of providing stream shading.

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- Use tree and shrub species that are native and non-invasive. Substitution with improved and locally accepted cultivars or purpose-specific species is allowed. For plantings and seeding, only viable, high-quality, and adapted plant materials will be used.
- Favor tree and shrub species that have multiple values such as those suited for timber, nuts, fruit, florals, browse, nesting, and aesthetics.
- Periodic removal of some forest products such as high value trees, medicinal herbs, nuts, and fruits is permitted provided the buffer area is not compromised by the loss of vegetation or harvesting disturbance.
- Necessary site preparation and planting shall be done at a time and manner to insure survival and growth of selected species.
- Harmful plant and animal pests present on the site will be controlled or eliminated as necessary to achieve and maintain the intended purpose. Pest management will be conducted in a manner that mitigates impacts to pollinators.
- Protect riparian vegetation until the desired plant community is well established.
- Livestock shall be controlled or excluded as necessary to achieve the buffer's water quality improvement purpose. If livestock is present, follow a Prescribed Grazing Plan (CPS 528) and defer grazing for a minimum of two years.
- Design the expanded buffer enhancement for an expected life of at least 15 years.
- The enhancement will comply with all applicable federal, state, and local laws and regulations, and with States' Forestry Best Management Practices for Water Quality.



**Documentation and Implementation Requirements**

**CONSERVATION STEWARDSHIP PROGRAM**

**Participant will:**

- Prior to implementation, prepare the planned buffer area according to the planting plan NRCS has developed with you. Refer to NRCS Conservation Practice Standard Riparian Forest Buffer (Code 391). (NRCS will provide technical assistance)
- Prior to implementation, select planting date, method, and density/spacing appropriate for the site and soil conditions. (NRCS will provide technical assistance.)

Planting Date	
Planting Method	
Density and spacing	

- Prior to implementation, work closely with NRCS to select plant species that are adapted to the specific site and that meet the goal of providing increased stream shading.

Species	Vegetative or Rootstock	Size	Protection (tubes, mats, nets)

- During implementation and before planting, grade the site, as needed, to eliminate concentrated flow through the buffer including water coming from uphill of the buffer.
- During implementation, conduct planting of selected species according to dates, methods, spacing and other requirements listed in the planting plan.
- During implementation, install and maintain erosion control measures as needed, such as silt fencing and mulching.
- During implementation, notify NRCS of any planned changes to allow NRCS to verify that the changes meet NRCS enhancement criteria.
- After implementation, control harmful pests and vegetation and in a manner that limits effects to pollinators. Inspect and maintain tubes and protection measures regularly.



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- After implementation, livestock and wildlife may need be controlled or excluded to achieve the buffer’s stream shading purpose. If livestock are present, follow a Prescribed Grazing Plan (Code 528) and defer grazing for a minimum of two years. Wildlife may need to be controlled during establishment of vegetative treatments. Temporary and local population control methods should be used with caution and within state and local regulations.

**NRCS will:**

- Prior to implementation, provide and explain NRCS Conservation Practice Standard Riparian Forest Buffer (Code 391) to show how it relates to this enhancement.
- Prior to implementation, verify no plants on the Federal or state noxious weeds list are included in the planting list.
- Prior to implementation, NRCS will provide technical assistance on:
  - Site preparation and planting plan that meets NRCS Conservation Practice Standard Riparian Forest Buffer (Code 391) and lists the species, vegetation type, density, protection measures, and planting dates.
  - Selecting planting techniques and timing appropriate for the site and soil conditions.
  - The potential for denser species plantings and focus in areas that will provide the most shade to the stream throughout the day.
  - Preparing specifications for applying this enhancement for each site using approved state implementation requirements, national technical notes, appropriate state technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
- During implementation, review any planned changes to ensure they meet the enhancement criteria.
- During implementation, verify all erosion control needed for the site is functioning and is maintained to specifications provided to the participant.

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# CONSERVATION STEWARDSHIP PROGRAM

- After implementation, verify the vegetation was established and any protections required are being maintained according to specifications provided to the participant.
- After implementation verify livestock are controlled or excluded as necessary to achieve the buffer’s goal of greater stream shading. If livestock are present, verify a Prescribed Grazing Plan (Code 528) is being followed and grazing is being deferred for a minimum of two years.

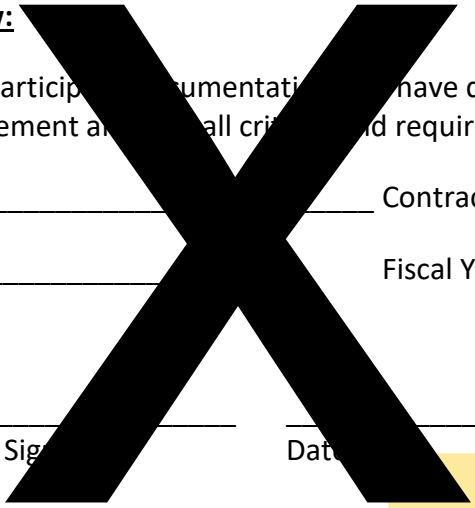
**NRCS Documentation Review:**

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and all critical path requirements.

Participant Name \_\_\_\_\_ Contract Number \_\_\_\_\_

Total Amount Applied \_\_\_\_\_ Fiscal Year Completed \_\_\_\_\_

\_\_\_\_\_  
NRCS Technical Adequacy Sign \_\_\_\_\_ Date \_\_\_\_\_





**OREGON SUPPLEMENT TO  
CONSERVATION ENHANCEMENT**

**CONSERVATION  
STEWARDSHIP  
PROGRAM**

**ACTIVITY E391B**

**Additional Recommendations and Guidance**

**Westside:**

A guide to Riparian Tree and Shrub Planting in the Willamette Valley: Steps to Success:  
<https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/em9040.pdf>

A guide to riparian tree planting in southwest Oregon:  
[https://knowyourforest.org/sites/default/files/documents/Riparian\\_planting\\_OSU.pdf](https://knowyourforest.org/sites/default/files/documents/Riparian_planting_OSU.pdf)

Suggestions for Installing Hardwood Cuttings and Live Fascines  
<https://www.nrcs.usda.gov/plantmaterials/orpmctn6826.pdf>

Riparian Revegetation – Technology  
<https://www.nrcs.usda.gov/plant-materials/publications/search>

Field Guide for the Identification and Use of Common Riparian Woody Plants of the Intermountain West and Pacific Northwest Regions  
<https://www.nrcs.usda.gov/plantmaterials/idpmcpu12618.pdf>

A guide to Riparian Tree and Shrub Planting in the Willamette Valley: Steps to Success:  
<https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/em9040.pdf>

**Eastern Oregon:**

Description, Propagation and Establishment of Wetland Plant Species and Grasses for Riparian Areas in the Intermountain West.

Conservation Plant Species for the Intermountain West

Washington Technical Note 10: Riparian Revegetation Plants

**Design Approvals & Acknowledgements:**

<b>Design Approval</b>	<b>Date</b>	<b>Job Approval Authority</b>
Designed by:		
Approved by:		

**Client's Acknowledgement Statement:**

The client acknowledges:

- I have received a copy of the specification and understand the contents and requirements.
- It is my responsibility to obtain all necessary permits and/or rights and to comply with all ordinances and laws pertaining to the application of this practice.
- I will not begin installation of this practice until I have received appropriate approval to do so. I understand NRCS also has Federal and state laws to comply with that may take some time to address (e.g. cultural resources).

<b>Client's</b>	<b>Date</b>
<b>Signature</b>	

**Certification Documentation:**

	Field Evaluation: Post-treatment inventory, measurements, notes, as-built, and supporting documentation (document completion in conservation plan), as required.
	Map(s): Including field numbers, fields treated, and units treated (may document on conservation plan map), as required.
	Photos or other supporting documentation (e.g., seed tags, soil tests, receipts, invoices, spray records, fertilizer records, etc.)
Brief Description of Work Accomplished (types of equipment used, date of application, extents and quantities installed, etc.)	

**Certification Statement:**

The employee certifies the implementation of this conservation practice:

- Meets the purpose, general criteria, and any required additional criteria as documented in the conservation practice standard and/or enhancement sheet.
- Meets the specifications contained herein and is complete.
- Conforms to my existing Job Approval Authority controlling factors and levels.

Name	Date	Job Approval Authority

<b>Field Level Certification</b> – For multiple applications of this design.				
Land Unit/ Contract Item Number	Date	Unit(s)	Amount Installed	Certifier