

Galbreath Wildlands Preserve
319(h) Riparian Revegetation Demonstration Project
Planting Plan - July 2015



Photo 1. Map of Riparian Restoration Demonstration Project showing treatment sites.

The Galbreath Wildlands Preserve Riparian Demonstration Project will consist of restoration treatments within a one acre area, focused on reconnecting the vegetative corridor along an unnamed tributary to Upper Rancheria Creek. The purpose of the Project is to demonstrate methods for reestablishing riparian cover to benefit stream temperatures and riparian functions. The 0.59 mile stream-reach has been degraded from legacy land use practices, including logging and cattle grazing. Conservation grazing, however, may provide future benefits for sustaining a native riparian corridor on the property.

The section of the road adjacent to the demonstration area will be under construction for the 2015 summer season. Road drainage improvements were implemented in 2014, however there are still three bridges scheduled to be replaced before fall 2015. Planting areas adjacent to these bridges will be treated post construction.

Since cattle have been excluded in recent years there is evidence of recovery of riparian species along the banks of the creek, predominately Oregon ash, with some maples, bay, willow and Douglas fir. Encouraging natural recruitment of endemic species such as, but not limited to, Oregon ash, alder, big leaf maple, madrone, bay, oak and willow species will be the foundation strategy of the riparian restoration project. This will be accomplished through management of herbivores in the riparian by installing browse protection on seedlings naturally recruiting and reestablishing. Target wildlife species for browse protection include deer, wild turkeys and feral pigs--which are abundant in the area.

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To compliment natural recruitment, revegetation of the riparian will be conducted to demonstrate direct planting of native plant species within the riparian zone. The planting palette will be based on species naturally occurring in the treatment area. Specific numbers of each species will depend on natural recruitment of Oregon ash, alder sp., willow sp., and big leaf maple. Plant material propagated for the demonstration project will be limited to seed and/or cuttings collected from the GWP or within a very close proximity. The Project design follows the protocols developed by the [University of California Natural Reserve System](#). Along with the installation of rooted plants, there will be direct seeding of oaks with browse protection and willow staking installed as additional methods that demonstrate how native vegetation can be used to stabilize eroding banks and increase riparian cover.

The original riparian design was developed before the 4-year drought impacted propagation and planting. The current, revised version includes the most robust species that grew from seed—as many of the seeds gathered failed to sprout for two consecutive years. The Preserve policy is to use only site specific plant materials. Planting to date has included Oregon ash and big leaf maple. Madrone and yampa (*Perideridia sp.*) will be planted in the fall 2015.

In addition to enhancing natural recruitment and installing supplemental native plants, the demonstration restoration project will focus on removal and suppression of invasive species. Several species targeted for hand removal include yellow star thistle located along the road and Italian thistle in the lower floodplain terrace and also along the road.

Irrigation support for the installation of native plant material was supplied through installation of Dri-water, a natural, biodegradable product that releases moisture directly to the base of plants over a ninety-day period. However, wild pigs were attracted to the taste of the material and even though there were residual pools of water nearby, they appear to prefer the Dri-water, digging up the cartons and licking them clean! A portable water tank was put into service as adaptive management, which necessitates water hauling bi-monthly throughout the summer months.

Project Deliverables:

4. Riparian Restoration Demonstration
 - 4.1 Collect site-specific native plant propagules for riparian restoration sites and submit findings to the Grant Manager.
 - 4.2 Prepare a final design for a one (1) acre riparian restoration that will serve as a demonstration and study site to develop protocols for addressing temperature TMDLs, and submit to the Grant Manager.
 - 4.3 Prepare one (1) acre, including invasive plant removal, and install three hundred (300) plants.
 - 4.4 Install an irrigation system.
 - 4.5 Conduct a post-Project site review with the Grant Manager.
 - 4.6 Conduct pre-, during, and post-implementation photo monitoring and submit to the Grant Manager.
 - 4.7 Conduct four (4) Project site tours and one (1) riparian restoration workshop and submit the list of attendees to the Grant Manager.

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Overview of Planting Zones:

Site 1:



Photo 1. View looking downstream toward the confluence of two unnamed tributaries to upper Rancheria Creek

The confluence of a second unnamed tributary flows under the existing road through a large culvert and merges with the primary unnamed tributary that runs through the restoration demonstration project. This is the “top of the demonstration reach” and is easily accessible from the road to accommodate groups for project site tours.

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Other plants found in this area include cream bush (*Holodiscus discolor*), western raspberry (*Rubus leucodermis*), Douglas fir, willow sp., big leaf maple, bay, buckeye and native blackberry.

- (3) Oregon ash and (2) big leaf maple planted with browse protection 3/11/15
- Dri-water installed 3/13/15
- (3) Maples & (1) willow were caged for browse protection 6/9/15
- Willow staking in Winter

Site 2A:



Photo 2. Site 2A view looking upstream

This area is across from a cut bank, native plants installed on flood plain terrace. Madrones will be planted in the fall on the upper terrace above the cut bank coming out of a narrow ravine. This site is not as easily accessible for groups and tours.

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Other species in this zone: Douglas fir, maple, bay, Coast whitethorn (*Ceanothus incanus*), madrone, Oregon ash (*Fraxinus latifolia*), native blackberry (*Rubus ursinus*), equisetum, Oregon white oak (*Quercus garryana*)

- (2) Oregon ash and (1) maple were planted with browse protection 3/11/15
- Dri water installed on 5/13/15
- (1) Maple and (1) Oregon ash seedlings installed browse protection 6/9/15
- Madrones planted in the Fall

Site 2B:



Photo 3. View looking downstream toward cut bank with Doug fir saplings

This area is just below the road, and has a degraded left bank. Young Douglas fir establishing on the left bank, just upstream is the planting area.

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Other plants in this area include maple, bay, Oregon ash, Woodwardia ferns, California bee balm (*Scrophularia californica*), California currant (*Ribes californicum*), and native blackberry.

- (2) Oregon ash and (2) maple were planted with browse protection 3/11/15
- (2) Maples were caged for browse protection downstream, (1) willow, (2) Oregon ash 6/9/15

Site 3:



Photo 4. Site 3, view looking upstream towards Bridge #3

This site corresponds with bridge # 3 at the entrance to the Preserve. This area will be treated post construction in fall/winter 2015.

Other species found in the area are pink honeysuckle (*Lonicera hispidula*), cream bush (*Holodiscus discolor*), Western raspberry (*Rubus leucodermis*), Douglas fir, willow sp., manzanita, Oregon ash.

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Site 4:



Photo 5. Site # 4A upper end, view looking downstream



Photo 6. Site # 4B Lower end, view looking upstream

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Site #4A:

This site is associated with Bridge #2, just upstream. Areas selected for planting are outside of disturbance zones associated with the bridge replacement, scheduled for summer 2015.

Other species present in this area are alder, native blackberry, Western raspberry, willow, Oregon ash, madrone, California currant (*Ribes californicum*), Douglas fir, and bigleaf maple, yampah (*Perideridia sp.*), red thistle (*Cirsium occidentale var. venustum*)

- (3) Maple and (3) Oregon ash planted in upstream reach
- (2) Oregon ash, (1) willow, (2) black oak seedlings browse protected

Site #4B:

This site is located just downstream of Bridge #2. Areas selected for planting are outside of disturbance zones associated with the bridge replacement, scheduled for summer 2015.

Other species present in this area are native blackberry, Oregon ash, alder, Shreve oak, California currant (*Ribes californicum*), maple, Douglas fir, coyote mint (*Monardella sp.*)

Invasive species in this area to be treated with hand removal, yellow star thistle

- (2) Oregon ash planted in upstream reach
- (2) Oregon ash seedlings caged

Site 5:



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Photo 7. Site # 5 looking downstream

This site is associated with the flood plain terrace located just upstream of Bridge #1. Areas have been planted away from any disturbance zones associated with the bridge replacement scheduled for summer 2015.

Species found in this area are Oregon ash, alder, madrone, whitethorn, Douglas fir, willow sp., maple, and yampa (*Perideridia sp.*)

- (2) Maples, (2) Oregon ash planted
- (1) Willow, (3) Oregon ash caged

Site 6:



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Photo 8. Site #6 view looking downstream

This site is associated with the floodplain terrace located downstream of Bridge #1. Areas have been planted away from any disturbance zones associated with the bridge replacement scheduled for summer 2015. It is easily accessible for tours and workshops.

Species found in this area are Oregon ash, maple, alder, madrone, Douglas fir, willow sp., whitethorn, bay laurel, native blackberry, and horsetail (*Equisetum sp.*)

- (7) Maples, (2) Oregon ash planted
- (3) Willow, (9) Oregon ash caged for browse protection
- Willow staking will be implemented in Fall/Winter 2015-16

Site 7:



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Photo 9. Site #7 view looking downstream

This site is within a floodplain terrace roughly midway between the bridge along Elkhorn Road and GWP Bridge #1. Here riparian connectivity begins to degrade to a wider, more open and aggraded channel.

Species found in this area are Oregon ash, maple, alder, madrone, Douglas fir, willow sp., whitethorn, bay laurel

- (2) maples, (2) Oregon ash planted
- (1) madrone, (1) willow, (1) Oregon ash caged for browse protection
- Willow staking will be implemented in Fall/Winter 2015-16

Site 8:



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Site 8 (cont.):



Photo 10. Site #8 view looking upstream towards site #7

This site is within a floodplain terrace that appears to be impacted by the confinement of the channel from an undersized bridge on Elkhorn Road at the Preserve entrance. The creek is aggraded and splits into a braided channel. This area, without the features of the road and bridge, would likely be part of a natural alluvial fan that would develop at the confluence with the main stem Rancheria Creek a few hundred yards downstream. This area is not suitable for riparian planting except for oak and madrone on the terraces above the floodplain.

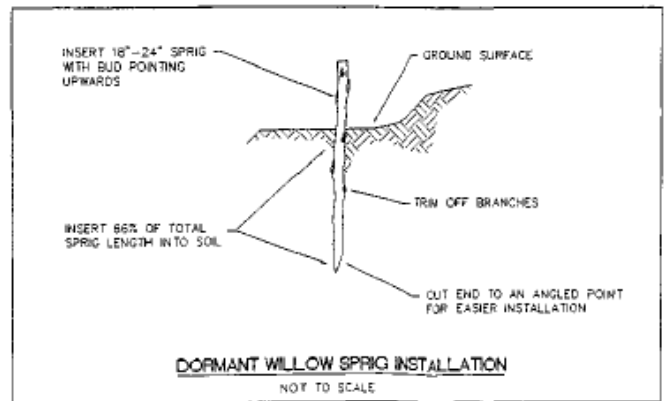
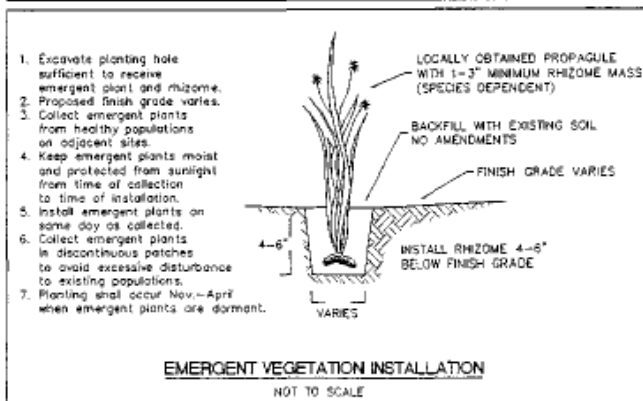
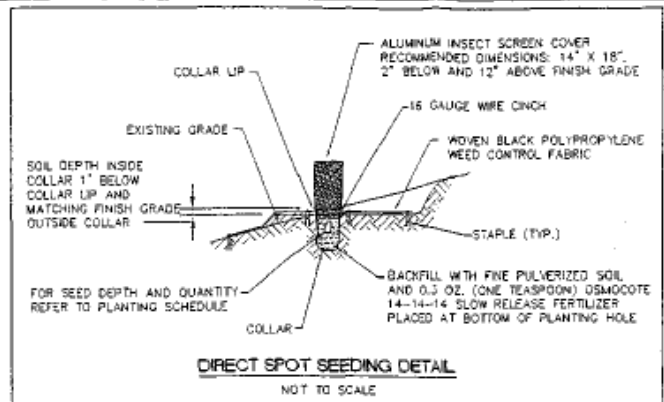
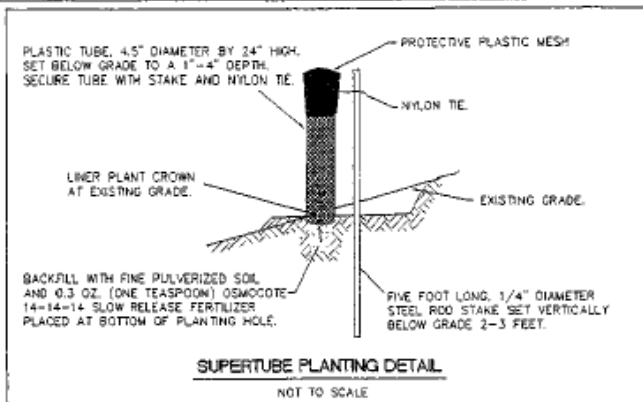
Species found in this area are madrone, willow sp., oak, maple, bay, and rabbit brush (*Ericameria sp.*)

Invasive Species: Scotch broom targeted for hand removal

Plant species under active management:

Species Latin Name	Species Common Name	# Planted	% Survival	# Naturally Recruited (browse protected)	Total
<i>Acer macrophyllum</i>	big leaf maple	19	(14) 74%	6	25
<i>Umbellularia californica</i>	bay laurel				
<i>Arbutus menziesii</i>	madrone			1	1
<i>Fraxinus latifolia</i>	Oregon ash	18	(15) 83%	20	38
<i>Quercus kelloggii</i>	black oak			2	2
<i>Salix sp.</i>	willow sp.			8	8
<i>Alnus rhombifolia</i>	alder				
<i>Perideridia sp.</i>	yampah sp.				

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ENTRIX
 FIGURE 7 - 3
DEMONSTRATION REVEGETATION PROJECT
PLANT INSTALLATION DETAIL
RAYARRO WATERSHED RESTORATION PLAN

PREPARED BY: **CIRCUIT RIDER PRODUCTIONS, INC.**
 DESIGN: **K. GAFFNEY**
 DRAWN: **K. GLEDHILL**
 SCALE: **NO SCALE**
 DATE: **03-18-98**

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Site Tours and Work Days

Two site tours have been conducted by MCRCD staff in coordination with Sonoma State Reserve staff (May 2013 and May 2014).

The May 2013 event was led by Claudia Luke, Director SSU Preserves and Patty Madigan, Conservation Programs Manager, Mendocino County RCD. Attendees included Yorkville ranchers and local residents. The May 2014 tour was led by Claudia Luke, Director SSU Preserves along with Steve Barnhart – Academic Director Pepperwood Preserve, Oak Expert and Linda MacElwee – Navarro River Watershed Coordinator, Mendocino County RCD. Participants included (12) landowners and community members. Tour highlights included overview of the riparian restoration project, road upgrades, and plant surveys that have been conducted with a special look at oak species found along the tour. Two additional site tours are to be scheduled for Winter/Spring 2016.