

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION**

**INITIAL STUDY  
AND  
DRAFT MITIGATED NEGATIVE DECLARATION**

**FOR**

**SIERRA FOOTHILL CONSERVANCY  
BEAN CREEK MEADOW RESTORATION PROJECT**

**MARIPOSA COUNTY**

**JUNE 2016**

**Table of Contents**

SECTION 1: PROJECT DESCRIPTION .....	2
SECTION 2: ENVIRONMENTAL CHECKLIST .....	8
SECTION 3: INITIAL STUDY AND CHECKLIST DISCUSSION .....	9
SECTION 4: PROPOSED MITIGATED NEGATIVE DECLARATION .....	44
SECTION 5: NOTICE OF COMPLETION .....	52
SECTION 6: ATTACHMENTS .....	54

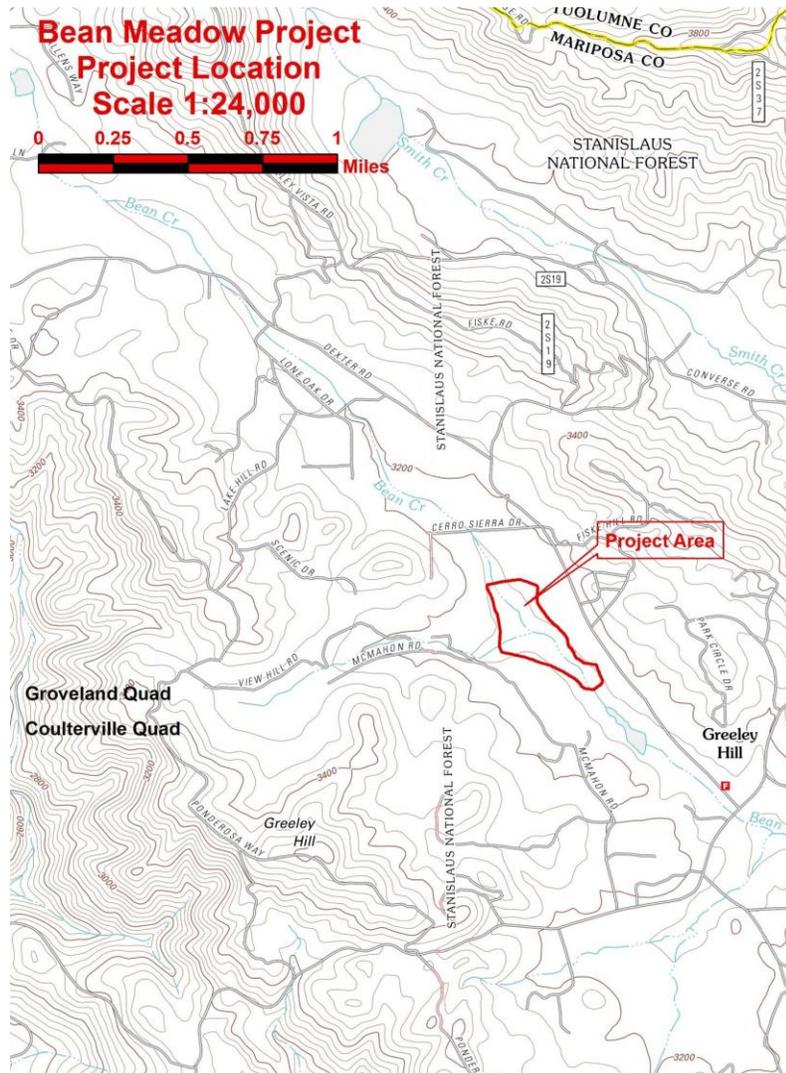
# SECTION 1: PROJECT DESCRIPTION

1. **Project title:** Bean Creek Meadow Restoration Project

2. **Lead agency name and address:**  
Central Valley Regional Water Quality Control Board  
1685 E Street, Fresno, CA 93706

3. **Contact person and phone number:**  
Debra Mahnke  
(559) 445-6281, [debra.mahnke@waterboards.ca.gov](mailto:debra.mahnke@waterboards.ca.gov)

4. **Project location:**  
The Bean Creek Meadow Restoration Project is located off of Fiske Road, approximately 1.5 miles northwest of Greeley Hill, CA in Mariposa County, and along Bean Creek in the Merced River Watershed. The project site is within the Coulterville USGS 7.5 minute quadrangle; Section 19, Township 2 South, Range 17 East, Mt. Diablo Base and Meridian. Longitude: -120° 08' 33.12" Latitude: 37° 45' 12.02"



**5. Project sponsor's name and address:**

Sierra Foothill Conservancy  
PO Box 691  
Mariposa, CA 95338

**6. General plan designation:** Planning Area – Proposed Greeley Hill Study Area

**7. Zoning:** Greeley Hill – TPA Zone/ Agriculture Exclusive Zone

**8. Description of project:**

***Project Background***

The overall goal of the Bean Creek Meadow Restoration Project is to restore the hydrologic and ecosystem function of Bean Meadow. The project encompasses approximately 39 acres of an approximately 80-acre parcel of land owned by the Sierra Foothill Conservancy (SFC) and an adjacent 80-acre parcel privately owned by Steve Dunckel, a private landowner. Bean Creek flows through the project area and drains into the North Fork of the Merced River. Bean Creek drains a montane watershed of approximately 4.97 square miles.

Historic evidence and field assessments demonstrate that Bean Meadow currently exists in a degraded state. Documents obtained from the Coulterville History Center indicate that Bean Meadow was heavily grazed as a dairy starting in 1878. The landowner at that time reported cutting “timothy” hay, which was in water, within the project area. This is a good indication that a much larger portion of the project area once functioned as a wet meadow during the summer.

Bean Creek is now steeply eroded and the channel depth averages eight feet below the meadow surface. Design consultants estimate that erosion of the main channel and the tributaries within the project area has removed approximately 80,600 cubic yards of soil (See Bean Meadow Restoration Design Report). This incised channel drains groundwater from the surrounding meadow, lowering the local water table and impairing the natural hydrology. The historic wet meadow area now consists of a few wetland swales among predominantly drier soils where invasive grasses and weeds thrive. Incision of the stream channel through the meadow has decreased floodplain connectivity, reduced filtering capacity, lowered the seasonal water table, and impacted riparian and aquatic habitat. The incision has reduced the water holding capacity of the meadow area and increased the speed of water draining from the watershed. Erosion within the incised stream channel is significant. Some of the stream segments have active head cuts that need to be stabilized to slow or stop the erosion from moving upstream.



*Incision of up to 8 feet along Bean Creek within the meadow*



*Actively eroding headcuts of up to 4 feet deep*

## ***Project Objectives***

The following objectives apply to the Bean Creek Meadow Restoration Project:

1. Re-establish proper floodplain function in order to re-establish streambank stability, increase surface flow capacity, improve filtering of sediment, prevent soil movement downstream, dissipate flow energy, increase temporary storage of floodwaters, moderate peak flows, recharge groundwater, and prevent erosion.
2. Improve water quality for on-site and downstream beneficial uses.
3. Restore a more natural erosion/deposition regime by eliminating excessive meadow and stream channel erosion as exhibited by downcutting, headcutting, widening, excessive lateral movement, and straightening.
4. Increase the potential for groundwater storage both long-term and short-term, and retain the water in the seasonal water table for longer periods of time.
5. Create conditions which will allow for appropriate morphological characteristics and vegetative stabilization of the channel of Bean Creek and the North Fork Merced River.
6. Improve riparian ecosystem conditions and promote sustainable, diverse, and healthy plant and associated wildlife communities.
7. Increase the forage for both wildlife and livestock.

## ***Proposed Project***

Sierra Foothill Conservancy (SFC) proposes to restore 3,500 feet of Bean Creek in Bean Meadow using the plug and pond restoration technique. Plug and pond restoration is a technique that constructs a series of earth plugs to fill a gullied channel and raise the local water table, while redirecting flow from the existing incised channel into a stable channel, with reduced dimensions, that is connected with a broad floodplain during annual peak flow events. Fill material for the plugs is excavated on site from the sides and bottom of the gully between the plugs. The raised water table that results when the gully is plugged creates ponds between the plugs. Topsoil from the pond excavation site is saved and used to revegetate the tops of the plugs, which become part of the meadow surface. This creates a series of ponds and plugs the entire length of the gully. The ponds fill with sediment as time passes, increasing the water holding capacity of the meadow in the process. The result of this technique is reconnection of the stream to the floodplain and re-watering of the meadow.

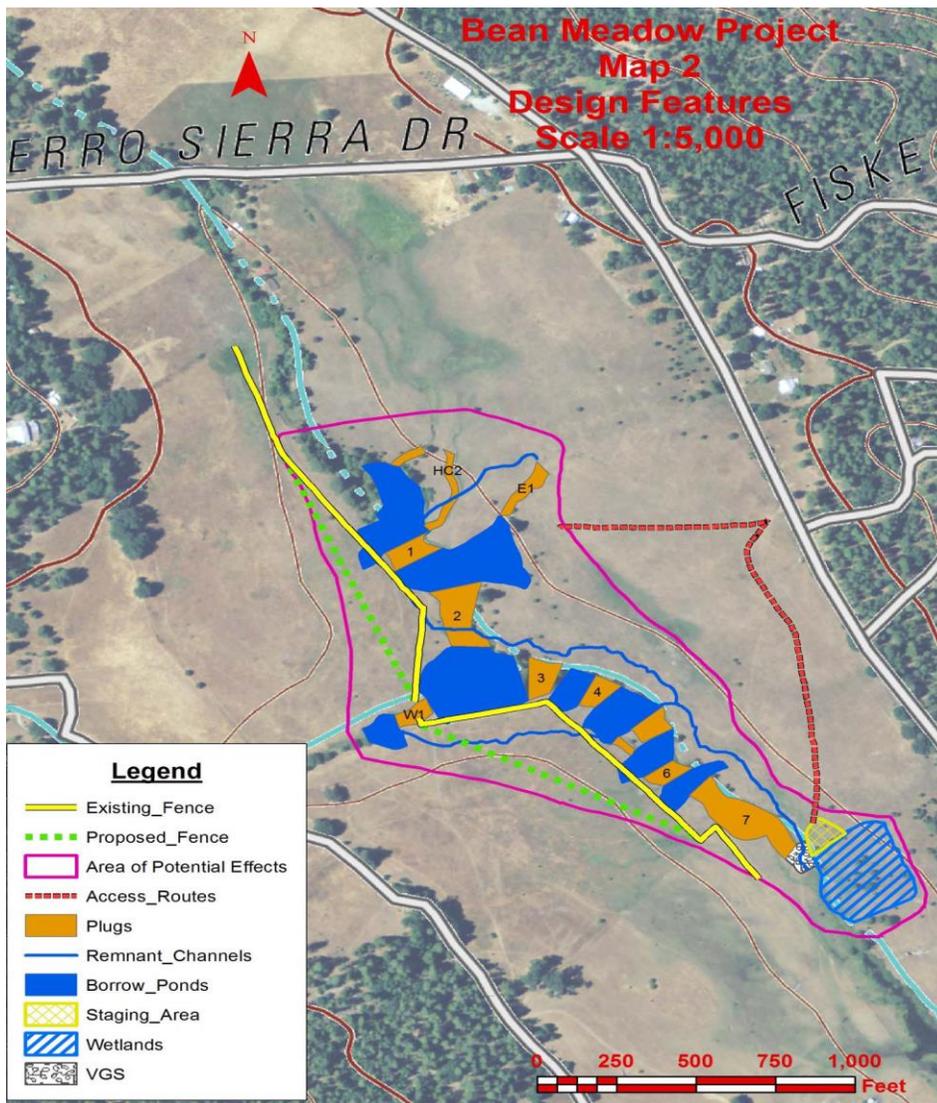
Restoration will consist of excavating eight borrow areas (ponds) to construct 12 plugs within a gully that is approximately 3500 feet long, over approximately 9.6 acres. It will also eliminate seven active headcuts on the mainstream, tributaries, and remnant channels. Erosion of the main channel and those reaches of the tributaries within the project area has removed approximately 80,600 cubic yards of soil. It will require excavation and placement of approximately 40,000 cubic yards in the 12 plugs, including tributaries, to eliminate the existing gullies as a conduit for flow. This will prevent the existing channel from acting as a drain to the meadow hydrology. Streamflow will then be returned to one or more remnant channels on the historic meadow surface (See Bean Meadow Restoration Design Report). The restoration is anticipated to take 30 days to complete.

Before ponds are created, vegetation established in the gully bottom will be recovered so it can be transplanted to the pond edges, plug surfaces, and any high stress areas of the restored channel. Topsoil from all excavation areas will be removed and stockpiled adjacent to areas designated to be plugged.

All plugs and borrow ponds are configured to accommodate surface and subsurface through flow and to reduce the risk of cutting through the plug during infrequent, short duration flood events. Plugs are constructed with wheel loaders to provide wheel compaction of the fill at levels intended to match the porosity/transmissivity of the native meadow soils. The project's terminal plug will have a rock and vegetation structure to armor the downstream end, as both channel and floodplain flows transition to the existing elevation. Habitat features and diversity will be incorporated into pond construction.

The plugs will be designed to facilitate rainfall infiltration and topsoil will be spread and seeded with native seed. All native vegetation recovered from the fill and borrow sites will be transplanted to plug edges and key locations on the remnant channel. Any woody material not transplanted will be used structurally throughout the project or left as snag habitat. In addition, the recovery of native, wet meadow vegetation will be supplemented by planting of native sedges like the Santa Barbara Sedge, and wetland and mesic graminoids.

The final result of this treatment will be a stream that can access the floodplain, spread out and reduce the energy of the water flow, and re-water the nearby meadow.



## **9. Surrounding Land Uses and Setting**

The project is located on 39 acres of the SFC's Bean Creek Preserve and adjacent private land, owned by Steve Dunckel. The Bean Creek Preserve is and will continue to be managed by SFC with the intention of preserving open space. The site is currently within a working cattle ranch and grazing occurs on site. Grazing will cease during and up to three years post-restoration. During this time the Sierra Foothill Conservancy plans to work with the Natural Resources Conservation Service and California Department of Fish and Wildlife to develop the necessary infrastructure, such as off-channel water sources and fencing, and design and implement a management plan that allows future grazing to be compatible with restoration. The project is located adjacent to Fiske Road and some low-density rural residential development. Bean Creek is dammed just downstream of the project area creating a small pond used for recreation.

## **10. Other public agencies whose approval is required:**

- Regional Water Quality Control Board – 401 Water Quality Certification
- U.S. Army Corps of Engineers – Section 404 approval under Nationwide Permit 27
- California Department of Fish and Wildlife – Lake and Streambed Alteration Agreement
- Mariposa County Building Department – Grading Permit

## SECTION 2: ENVIRONMENTAL CHECKLIST

### ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

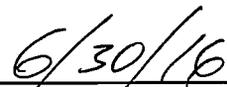
- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Aesthetics                      | <input type="checkbox"/> Agriculture and Forestry Resources       | <input checked="" type="checkbox"/> Air Quality                        |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources                       | <input checked="" type="checkbox"/> Geology /Soils                     |
| <input type="checkbox"/> Greenhouse Gas Emissions        | <input checked="" type="checkbox"/> Hazards & Hazardous Materials | <input checked="" type="checkbox"/> Hydrology / Water Quality          |
| <input type="checkbox"/> Land Use / Planning             | <input type="checkbox"/> Mineral Resources                        | <input type="checkbox"/> Noise   |
| <input type="checkbox"/> Population / Housing            | <input type="checkbox"/> Public Services                          | <input type="checkbox"/> Recreation                                    |
| <input type="checkbox"/> Transportation/Traffic          | <input type="checkbox"/> Utilities / Service Systems              | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

### DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

  
\_\_\_\_\_  
Signature

  
\_\_\_\_\_  
Date

Lonnie Wass  
\_\_\_\_\_  
Printed Name

## SECTION 3: INITIAL STUDY AND CHECKLIST DISCUSSION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### **Answers to checklist questions a, b and d**

The project is not located in or adjacent to a designated scenic vista or along a scenic highway. The project would not result in the development of new sources of light or glare.

### **Answer to checklist question c**

The primary visual impacts of the project will be the presence of heavy equipment during construction, the temporary creation of large areas of soil disturbance and the series of ponds along sections of degraded channel within the meadow environment.

The presence of heavy equipment would be out of character for the site. However, the construction period will be fairly limited. The duration of the presence of large areas of soil disturbance will be minimized by salvaging and replacing sod and planting and seeding directly following construction activities. While not currently present on the landscape, the ponds will be formed as a result of the raising of the local water table to a more natural level. In addition, the ponds will fill with sediment overtime and will not be permanent features. The impacts to aesthetics are less than significant with mitigation.

### **Mitigation Measures**

Revegetation and disturbance limiting activities as described under Mitigation Measures SOIL 2 and 4-6 will reduce construction impacts to less than significant.

II. AGRICULTURE AND FORESTRY RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answers to checklist questions a, c, d, and e**

The project will not convert farmland to non-agricultural use. The project will not affect the adjoining forest areas.

**Answers to checklist question b**

One of the two parcels on which the project is located is zoned as Agriculture Exclusive Zone and is used for active cattle grazing. Over the long term the project is expected to enhance forage within Bean Meadow, and therefore enhance grazing on the site. Over the short term the project area, which would comprise approximately one quarter of this parcel, would need to be rested from grazing for a period of 3 years following restoration to allow for revegetation of disturbed areas, stabilization of areas that could lead to meadow function degradation, and for long term success of the restoration work. Grazing would still occur outside the project area

within the Bean Creek Preserve and adjacent private parcel during this time. Cattle grazing compatible with restoration would resume when the vegetation is successfully re-established and the topsoil is stabilized. Since the project area is small relative to the overall area grazed, the period of rest is temporary, and the overall effect of the project will be to enhance grazing, the project impacts are less than significant.

**Mitigation measures**

No mitigation is required.

III. AIR QUALITY. Would the project:	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answer to checklist questions b, c, e**

The project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Due to its short-term, small scale, low-intensity nature, it would not result in a cumulatively considerable net increase of pollutants. Objectionable odors may arise from diesel fuel, however work will take place away from existing residences in the project area.

**Answer to checklist question a**

The proposed project site is located in Mariposa County, California, which is in the Mariposa County Air Pollution Control District. There is a potential for temporary, localized impacts on air

quality associated with fugitive dust and engine emissions during construction activities. The construction related impacts would be less than significant.

**Answer to checklist question d**

There is a potential for construction-related fugitive dust or diesel emissions to reach local residents during construction, as the project area is located adjacent several residences. The closest house is approximately 600 feet from the construction area. Equipment transport will occur on existing and temporary roads that are also adjacent to residences. As such, emissions and dust from construction could affect local residents if necessary precautions are not taken. Mitigation measures AIR 1-5 will reduce the impact from emissions and dust to a less than significant level.

**Mitigation Measures**

AIR –1. All areas (including unpaved roads) with vehicle traffic will be watered as necessary for stabilization of dust emissions. Care will be taken to avoid excessive watering that could cause a discharge to surface waters.

AIR –2. On-site vehicle speeds will be limited to 15 miles per hour on unpaved surfaces.

AIR –3. Inactive soil stockpiles will be watered or covered during windy conditions.

AIR –4. Disturbed areas will be revegetated as per Mitigation Measure BIO 5-6. If immediate permanent re-vegetation is impractical due to factors such as poor seasonal timing, then temporary measures such as adequate covering with mulch will be implemented.

AIR –5. Construction activities will comply with EPA air quality standards on dust and condensed fumes, so that emissions do not exceed hourly levels as regulated per processing weight.

IV. BIOLOGICAL RESOURCES. Would the project:	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

by the California Department of Fish and Game or US Fish and Wildlife Service?

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

**Answer to checklist questions e and f**

The proposed project does not conflict with any local, regional, or state biological protection policies or conservation plans.

**Answer to checklist question a**

The project is designed to restore and improve wetland, aquatic, and riparian habitats. Some existing riparian vegetation will be disturbed and the site rehabilitated. Overall this project will be an improvement of riparian conditions and habitat.

A Biological Evaluation was prepared by Live Oak Associates, Inc. for this project to investigate the biological resources of the project site and surrounding area, and to evaluate likely impacts to such resources resulting from the proposed project.

The Biological Evaluation prepared for this project evaluated potential effects of the proposed action on species listed as threatened, endangered, candidate, and proposed species, and United States Department of Agriculture Forest Service Region 5 Forester's (USFS R5) Sensitive Species, listed for Stanislaus National Forest. For the purpose of this CEQA Checklist, species included in this Biological Evaluation represent "special-status species" and are included in this analysis. Sources of information used in the preparation of this analysis

included site specific botanical surveys conducted by Barry and Judy Breckling, avian point counts of the Bean Creek Preserve conducted by the Point Blue Conservation Science (PBCS), California's Wildlife, Volumes I, II, and III (Zeiner et. al 1988-1990), California Natural Diversity Data Base (CDFW 2015), Annual Report on the Status of California State Listed Threatened and Endangered Animals and Plants (CDFW 2015), and The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (CNPS 2015).

The following information summarizes potential effects of the proposed action on biological resources, including special status species, and mitigation measures that are expected to reduce potential adverse effects to a less than significant level. This information is taken directly from the Biological Evaluation. Additional detailed information on the known occurrences and status of each special status species in the project area, and a detailed analysis of potential project effects on each species, is provided in the Biological Evaluation for the Bean Creek Meadow Restoration Project and incorporated into this document by reference. Following the mitigations listed at the end of this section there would be no significant adverse effect to any of these listed species during or after project implementation.

### **Plants**

Sensitive plant species that could potentially occur in the project area are included in the table below.

**Table 1: Plants listed as state or federally threatened or endangered**

<b>Species</b>	<b>Status</b>	<b>Occurrence in the Study Area</b>
Layne's Ragwort ( <i>Packera layneae</i> )	FT CR CNPS 1B.2	Absent. Serpentine soils preferred by this species are absent from the project site. Individuals were not observed during spring.

### *Plants listed by CNPS and the U.S. Forest Service*

<b>Species</b>	<b>Status</b>	<b>Occurrence in the Study Area</b>
Jepson's Onion ( <i>Allium jepsonii</i> )	CNPS 1B.2 FSS	Unlikely. Suitable habitat for this species in the form of foothill woodlands and ponderosa pine forest are absent from the Bean Creek Meadow. The site is south of this species' known range. This species was not observed during spring surveys in 2012.
Three-bracted Onion ( <i>Allium tribracteatum</i> )	CNPS 1B.2 FSS	Unlikely. Suitable habitat for this species in the form of conifer forest is absent from the Bean Creek Meadow. The site is south of this species' known geographical range and below its known elevation range. This species was not observed during spring surveys in 2012.
Rawhide Hill Onion ( <i>Allium tuolumnense</i> )	CNPS 1B.2	Absent. Serpentine soils preferred by this species are absent from the project site. No individuals were found during spring surveys of the site. Furthermore, the site is outside the elevation range of this species.
Yosemite Onion ( <i>Allium Yosemiteense</i> )	CNPS 1B.3 FSS	Absent. Habitat suitable for this species is absent from the Bean Creek Meadow. This species was not observed during spring surveys in 2012.
Nissenan Manzanita ( <i>Arctostaphylos nissenana</i> )	CNPS 1B.2 FSS	Absent. Habitat suitable for this species is absent from the Bean Creek Meadow. This species was not observed during spring surveys in 2012.

Species	Status	Occurrence in the Study Area
Big-scale Balsamroot ( <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i> )	CNPS 1B.2 FSS	Absent. While habitat suitable for this species is present on the project site, it was not observed during spring field surveys
Scalloped Moonwort ( <i>Botrychium crenulatum</i> )	CNPS 2.2 FSS	Absent. Bean Creek Meadow is outside of this species' known geographic and elevation range. This species was not observed during spring surveys in 2012.
Mingan Moonwort ( <i>Botrychium minganense</i> )	CNPS 2.2 FSS	Absent. Bean Creek Meadow is outside of this species' known geographic and elevation range. This species was not observed during spring surveys in 2012.
Moosewort ( <i>Botrychium tunux</i> )	CNPS 2.1 FSS	Absent. Bean Creek Meadow is outside of this species' known geographic and elevation range. This species was not observed during spring surveys in 2012.
Giant Moonwort ( <i>Botrychium yaaxudakeit</i> )	CNPS 2.1 FSS	Absent. Bean Creek Meadow is outside of this species' known geographic and elevation range. This species was not observed during spring surveys in 2012.
Bolander's Bruchia ( <i>Bruchia bolanderi</i> )	CNPS 2.2 FSS	Absent. Bean Creek Meadow is outside of this species' known elevation range. This species was not observed during spring surveys in 2012.
Pleasant Valley Mariposa Lily ( <i>Calochortus clavatus</i> var. <i>avius</i> )	CNPS 1B.2 FSS	Absent. Bean Creek Meadow appears to be outside of the geographic range of this species; habitats of the site are also not suitable for this species. This species was not observed during spring surveys in 2012.
Small's Southern Clarkia ( <i>Clarkia australis</i> )	CNPS 1B.2 FSS	Absent. Serpentine soils preferred by this species are absent from the project site. No individuals were found during spring surveys of the site. Furthermore, the site is outside the elevation range of this species. This species was not observed during spring surveys in 2012.
Mariposa Clarkia ( <i>Clarkia biloba</i> ssp. <i>australis</i> )	CNPS 1B.2 FSS	Absent. Serpentine soils preferred by this species are absent from the project site. No individuals were found during spring surveys of the site. Furthermore, the site is outside the elevation range of this species.
Merced Clarkia ( <i>Clarkia lingulata</i> )	CNPS 1B.1 FSS	Absent. Habitat suitable for this species is absent from the Bean Creek Meadow. The meadow is also above the elevation range of this species. This species was not observed during spring surveys in 2012.
Beaked Clarkia ( <i>Clarkia rostrate</i> )	CNPS 1B.3	Absent. The site is outside the elevation range of this species. This species was not observed during spring surveys in 2012.
Mariposa Cryptantha ( <i>Cryptantha mariposae</i> )	CNPS 1B.3	Absent. Serpentine soils do not occur on the site. Furthermore, the site is above the known elevation for this species. This species was not observed during spring surveys in 2012.
Mountain Ladyslipper ( <i>Cypripedium montanum</i> )	CNPS 4.2 FSS	Unlikely. Although the Bean Creek Meadow and riparian habitat along Bean Creek provide potential habitat for this species, it was not observed during spring surveys conducted in 2012.

Species	Status	Occurrence in the Study Area
Branched Collybia ( <i>Dendrocollybia racemosa</i> )	FSS	Unlikely. While leaf litter/duff under oaks and conifers provides potential habitat for this species, it was not observed during extensive field surveys conducted in the spring of 2012.
Tahoe Draba ( <i>Draba asterophora</i> var. <i>asterophora</i> )	CNPS 1B.2 FSS	Absent. Bean Creek Meadow is outside the geographical and elevation range of this species. This species was not observed during spring surveys in 2012.
Jack's Buckwheat ( <i>Eriogonum luteolum</i> var. <i>saltuarium</i> )	CNPS 1B.2 FSS	Absent. Bean Creek Meadow is outside the geographical and elevation range of this species. This species was not observed during spring surveys in 2012.
Congdon's Woolly Sunflower ( <i>Eriophyllum congdonii</i> )	CNPS 1B.2 FSS	Absent. Bean Creek Meadow does not provide habitat suitable for this species. This species was not observed during spring surveys in 2012.
Yosemite Woolly Sunflower ( <i>Eriophyllum nubigenum</i> )	CNPS 1B.3 FSS	Absent. Bean Creek Meadow is outside of this species' known geographic and elevation range. This species was not observed during spring surveys in 2012.
Tuolumne Button Celery ( <i>Eryngium pinnatisectum</i> )	CNPS 1B.2	Absent. The site is outside of the elevational and geographical range of this species to occur on the site. No species of <i>Eryngium</i> was observed during LOA surveys of the site.
Taylor's Fawn lily ( <i>Erythronium taylorii</i> )	CNPS 1B.2 FSS	Absent. Bean Creek Meadow is outside of this species' known geographic and elevation range. This species was not observed during spring surveys in 2012.
Tuolumne Fawn Lily ( <i>Erythronium tuolumnense</i> )	CNPS 1B.2 FSS	Absent. Suitable habitats for this species are absent. This species was not observed during surveys conducted in the spring of 2012.
Parry's Horkelia ( <i>Horkelia parryi</i> )	CNPS 1B.2 FSS	Absent. Soils of the lone formation do not occur on the site. Suitable habitat is absent from the site. This species was not observed during surveys conducted in the spring of 2012.
Short-leaved Hulsea ( <i>Hulsea brevifolia</i> )	CNPS 1B.2 FSS	Absent. Bean Creek Meadow is outside of this species' known geographic and elevation range. This species was not observed during spring surveys in 2012.
Tuolumne Iris ( <i>Iris hartwegii</i> ssp. <i>columbiana</i> )	CNPS 1B.2 FSS	Unlikely. Bean Creek Meadow appears to be outside of the known geographical range of this species. This species was not observed during spring surveys in 2012.
Congdon's Bitterroot ( <i>Lewisia congdonii</i> )	CNPS 1B.3 FSS	Absent. Bean Creek Meadow does not provide suitable habitat for this species. This species was not observed during spring surveys in 2012.
Hutchison's Lewisia ( <i>Lewisia kelloggii</i> ssp. <i>hutchisonii</i> )	CNPS 3.3 FSS	Absent. Bean Creek Meadow appears to be outside of the known geographical range of this species. This species was not observed during spring surveys in 2012.
Kellogg's Lewisia ( <i>Lewisia kelloggii</i> ssp. <i>kelloggii</i> )	FSS	Absent. Bean Creek Meadow appears to be outside of the known geographical range of this species. This species was not observed during spring surveys in 2012.

Species	Status	Occurrence in the Study Area
Congdon's Lomatium ( <i>Lomatium congdonii</i> )	CNPS 1B	Absent. Serpentine soils preferred by this species are absent from the project site. This species was not observed during spring surveys in 2012.
Stebbin's Lomatium ( <i>Lomatium stebbinsii</i> )	CNPS 1B.1 FSS	Absent. Bean Creek Meadow is outside the geographical and elevation range of this species. This species was not observed during spring surveys in 2012.
Shaggyhair Lupine ( <i>Lupinus spectabilis</i> )	CNPS 1B.2	Absent. Serpentine soils are absent from the project site. The site is too high in elevation for this species to occur. This species was not observed during surveys conducted in the spring of 2012.
Broad-nerved Hump-moss ( <i>Meesia uliginosa</i> )	CNPS 2.2 FSS	Absent. Bean Creek Meadow is outside the known geographical and elevation range of this species. This species was not observed during spring surveys in 2012.
Elongate Copper-moss ( <i>Mielichhoferia elongata</i> )	CNPS 2.2 FSS	Absent. Rocky substrate suitable for this species is absent from the Bean Creek Meadow. This species was not observed during spring surveys in 2012.
Slender-Stemmed Monkeyflower ( <i>Mimulus filicaulis</i> )	CNPS 1B.2 FSS	Unlikely. Habitats required by this species are absent to marginal on the project site. This species was not observed during surveys conducted in the spring of 2012.
Yellow-lip Pansy Monkeyflower ( <i>Mimulus pulchellus</i> )	CNPS 1B.2 FSS	Present. This species was documented on bare ground within moist meadow habitat throughout the project site by botanists Barry and Judy Breckling.
Brownish Beaked-Rush ( <i>Rhynchospora capitellata</i> )	CNPS 2B.2	Unlikely. The project site provides suitable habitat for this species, but this species was not observed during surveys conducted in the spring of 2012.
Red Hills Ragwort ( <i>Senecio clevelandii</i> var. <i>heterophyllus</i> )	CNPS 1B.2	Absent. The project site is above the elevational range of this species and serpentine soils are absent. This species was not observed during surveys conducted in the spring of 2012.

#### STATUS CODES

FE - Federally Endangered  
 FT - Federally Threatened  
 FPE - Federally Endangered (Proposed)  
 FC - Federal Candidate  
 FSS - Forest Service Sensitive

CE - California Endangered  
 CT - California Threatened  
 CR - California Rare  
 CP - California Protected  
 CSC - California Species of Special Concern

CNPS - California Native Plant Society Listing  
 1A - Plants Presumed Extinct in California

3 - Plants about which we need more information – a review list

1B - Plants Rare, Threatened, or Endangered in California and elsewhere

4 - Plants of limited distribution – a watch list

2 - Plants Rare, Threatened, or Endangered in California, but more common elsewhere

#### Loss of Habitat for Special Status Plants

**Potential Impacts.** One federally threatened and state rare plant species and 41 other special status plant species (including U.S. Forest Service “sensitive species”) are known to occur in the general vicinity of the project site (see Table 1). Of these 42 plants, all but two, the yellow-lip

pansy monkeyflower and brownish beaked-rush, are absent or unlikely to be present on the site due to unsuitable habitat or the project site's being situated outside of their range. The proposed project would have no impact on the 40 regionally-occurring special status plant species that would not be expected to occur on the project site. The project has the potential to disturb populations of the yellow-lip pansy monkeyflower and brownish beaked-rush. These species have been determined to be rare in California by the CNPS with a listing status of 1B and 2B, respectively.

**Yellow-lip Pansy Monkeyflower:** The yellow-lip pansy monkeyflower has been documented growing in bare areas within the moist meadows of the project site by local botanists Barry and Judy Breckling. The project will result in ground disturbance that will have the possibility of disturbing populations of these species. However, according to the Brecklings, the yellow-lip pansy monkeyflower is fairly common in the Greeley Hill area and on the project site. Due to the extent of this species occurrence on the site it is highly unlikely that project activities would eliminate this species from the project site and certainly not from surrounding areas. The restoration project is anticipated to result in a net gain in habitat for this species and the species will likely become quickly established in this habitat after restoration activities are complete.

**Brownish Beaked-Rush:** Although brownish-beaked rush has not been observed on the project site, the site offers suitable habitat for this species and its occurrence on the site must be considered a possibility. Because all recoverable native vegetation from the fill and borrow sites will be transplanted to plug edges, surfaces, and key locations on the remnant channel, and because the downstream edges of plugs will be heavily planted with sedge mats recovered from the gully bottom, any brownish beaked-rush occurring in project disturbance areas would have a high likelihood of being transplanted. Transplant success of perennials is usually high if the proper environmental conditions are created. The project objectives are to create wetland habitats that this species would benefit from; therefore, any transplantation of this species that may incidentally occur as part of project activities is expected to have a high rate of success.

Because the project will, at most, have a minimal impact on the yellow-lip pansy monkeyflower and brownish beaked-rush, and likely increase habitat for these species, impacts to these species are considered less than significant. Mitigation measures are not warranted.

### **Animals**

Sensitive animal species that could potentially occur in the project area are included in the table below.

**Table 2: Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act**

<b>Species</b>	<b>Status</b>	<b>Occurrence on the Project Site</b>
Valley Elderberry Longhorn Beetle ( <i>Desmocerus californicus dimorphus</i> )	FT	Absent. Elderberry shrubs, the obligate habitat required by this species, are absent from the project site and surrounding lands. Furthermore, the site is above the elevational range of this species.
Mountain Yellow-legged Frog ( <i>Rana muscosa</i> )	CSC, FC	Absent. The study area is below the elevational range of this species. In addition, the seasonal drainage does not provide suitable habitat for this species
Limestone Salamander ( <i>Hydromantes brunus</i> )	CT FSS	Absent. Limestone out-crops are not present within the project site, and the site is above the typical range of this species.

<b>Species</b>	<b>Status</b>	<b>Occurrence on the Project Site</b>
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	CE FSS	Possible. Bald eagles sometimes hunt waterfowl near small Sierra foothill reservoirs such as the one located on Bean Creek at the south end of the property.
Great gray owl ( <i>Strix nebulosa</i> )	CE FSS	Present. This species has been documented within the Bean Creek Meadow (Joseph Medley, Great Gray Owl Researcher, pers. com.). Nesting is not known to occur, but the meadow provides foraging habitat for this species.
Willow Flycatcher ( <i>Empidonax traillii</i> ssp. <i>brewsteri</i> )	CE FSS	Possible. Potential breeding habitat is available on the site. If not breeding on the site this species may forage on the site during migration movements.
Sierra Nevada Red Fox ( <i>Vulpes vulpes</i> ssp. <i>necator</i> )	CT FSS	Absent. This species occurs at higher elevations than are found at the project site.
North American Wolverine ( <i>Gulo gulo</i> )	CT FSS	Absent. Bean Creek Meadow is well outside of the range of the North American Wolverine.

*State Species of Special Concern and U.S. Forest Service Sensitive Species*

<b>Species</b>	<b>Status</b>	<b>Occurrence on the Project Site</b>
Hardhead ( <i>Mylopharadon conocephalus</i> )	FSS	Unlikely. Bean Creek is not a perennial creek during dry years. Thus, habitat suitable for this species periodically disappears.
San Joaquin roach ( <i>Lavinia symmetricus</i> )	CSC	Unlikely. Bean Creek is not a perennial creek during dry years. Thus, habitat suitable for this species periodically disappears.
Foothill Yellow-legged Frog ( <i>Rana boylei</i> )	CSC FSS	Unlikely. During dry years, Bean Creek lacks the perennial flows required by this species. Cobble channel beds required by this species are also absent.
Western Pond Turtle ( <i>Emys marmorata</i> )	CSC FSS	Possible. This species may inhabit a nearby stock pond and occasionally wander onto the project site for nesting or dispersal.
Northern Goshawk ( <i>Accipiter gentilis</i> )	CSC FSS	Possible. This species generally does not occur at elevations as low as those of the project site. However, individuals could occasionally forage on the site.
Golden Eagle ( <i>Aquila chrysaetos</i> )	CSC	Possible. The site provides possible foraging habitat. Nesting habitat is at best marginal.
California Spotted Owl ( <i>Strix occidentalis occidentalis</i> )	CSC FSS	Possible. Potential foraging habitat occurs on the site. Nesting habitat on the site would be marginal, at best, for the California spotted owl due to sparse forest cover. This species is not expected to nest on-site.
Burrowing Owl ( <i>Athene cucularia</i> )	CSC	Absent. Suitable habitat for this species is absent. This species does not occur at elevations this high in the Sierra Nevada.
Yellow Warbler ( <i>Dendroica petechia brewsteri</i> )	CSC	Possible. Though generally preferring denser riparian habitat than available on the project site, breeding and foraging habitat for this species is available.

Species	Status	Occurrence on the Project Site
Fringed Myotis ( <i>Myotis thysanodes</i> )	FSS	Possible. This species may forage over the meadow. Roosting opportunities are absent.
Spotted Bat ( <i>Euderma maculatum</i> )	CSC	Possible. The study area provides suitable foraging habitat. Suitable roost sites are absent.
Townsend's Big-eared Bat ( <i>Corynorhinus townsendii</i> ssp. <i>townsendii</i> )	CSC FSS	Possible. The study area provides suitable foraging habitat. Suitable roost sites are absent.
Western Red Bat ( <i>Lasiurus blossevillii</i> )	CSC	Possible. Suitable foraging and roosting habitat is present on the project site.
Western Mastiff Bat ( <i>Eumops perotis</i> ssp. <i>californicus</i> )	CSC	Possible. The study area provides suitable foraging habitat. Suitable roost sites are absent.
Pallid Bat ( <i>Antrozous pallidus</i> )	CSC FSS	Possible. Suitable foraging and roosting habitat is present on the project site.
Pacific Martin ( <i>Martes caurina</i> )	FSS	Unlikely. While scattered conifers occur along Bean Creek, conifer forests are absent from the site. Furthermore, the site appears to be below the elevation range of this species.

### **Loss of Habitat or Direct Impact to Special Status Animals Absent or Unlikely to Occur on the Site**

**Potential Impacts.** Of the 20 special status animal species potentially occurring in the region, eight species would be absent or unlikely to occur on the site due to the absence of suitable habitat or the project site's being situated outside of their range. These species include the valley elderberry longhorn beetle, mountain yellow-legged frog, foothill yellow-legged frog, limestone salamander, bald eagle, Sierra Nevada red fox, San Joaquin roach, and burrowing owl. Since there is little to no likelihood that these species would use the site, disturbance from future development of the project site would have no effect on these species. No loss of habitat or direct impact to these special status animals would occur; therefore, no mitigations are warranted.

### **Loss of Habitat for Special Status Animals that may Occur on the Site as Occasional or Regular Foragers but Breed Elsewhere**

**Potential Impacts.** Seven species would be expected to use the site for foraging only. These species include the great gray owl, California spotted owl, northern goshawk, golden eagle, spotted bat, Townsend's big-eared bat, and western mastiff bat. Similar foraging habitat is abundant throughout the region. The project would only temporarily disrupt the availability of an immeasurably small amount of regionally available foraging habitat. Furthermore, the project objective is to improve habitat for these and other native wildlife species. Therefore, the project would not significantly reduce the amount or quality of foraging habitat currently available in the region. The loss of foraging habitat for special status animals is considered a less than significant impact. Therefore, no mitigations are warranted.

## **Disturbance to Special Status Bird Species and Other Migratory Birds That May Nest on or Immediately Adjacent to the Site**

**Potential Impacts.** The project will occur in the fall, outside the avian nesting season (February 1 through September 15) and at a time when summer migrants will have left the area. Therefore, impacts to all nesting birds, including special status species, will be absent. No mitigation is required.

## **Direct Impacts to Resident Special Status Avian Species**

**Potential Impacts.** The great gray owl, California spotted owl, northern goshawk, and golden eagle may occur on the project site at the time of restoration activities. None of these species would be expected to nest on the project site; however, all are known to utilize lower elevations from time to time, especially during the winter. Therefore, there is some possibility that these species may occur in the vicinity of the project site during restoration activities. Since individuals, including juveniles, will be fully mobile at this time, even if individuals of these species should occur on or near the project site, they would be able to easily fly away from the impact area. Therefore, the project is not expected to result in construction-related injury or mortality of these species.

## **Impacts to Special Status Roosting Bats**

**Impact.** Two special status bat species, pallid and western bats, will potentially be affected by project implementation. Project related tree removal could result in mortality of roosting bats.

*Red Bat:* The western red bat roosts solitarily in tree foliage. Due to the solitary nature of the western red bat, project activities would, at most, result in the incidental death or injury of only a few individual bats should they occur in trees that are to be removed. Therefore, impacts to the western red bat are considered less than significant.

*Pallid Bat:* The pallid bat roosts communally in cavities of buildings or trees. Since the pallid bat can roost communally in hollows of trees, this species may be significantly impacted should tree removal occur during the maternal roosting season (June 1st through September 31st), when young are unable to fly and are dependent on their mothers. Should tree removal occur during the maternal roosting season, the destruction of a maternal roost could result the mortality of hundreds of juvenile pallid bats and have a significant effect on the regional population of this species. Mitigation measures that protect the pallid bat from possible direct mortality are warranted. Therefore, the project applicant will implement the measures indicated in BIO-1 below to ensure that mortality to pallid bats from project construction is avoided.

## **Answer to checklist question b**

### **Potential Impact to Riparian Habitat or Other Sensitive Natural Communities**

**Potential Impacts.** Sensitive habitats in the form of riparian and seasonal wetland have been identified on the project site. The project will result in temporary impacts to these sensitive natural communities. However, the intended result of the project is to increase the amount of wetlands and riparian vegetation within the project site. This will be accomplished through the construction of a series of plug dams and the planting and seeding of native vegetation. Cuttings will be taken from existing willows on the site and planted around the created wetland ponds. Additionally, the plugs will be seeded with native sedges to reduce erosion and enhance habitat. To assure success, the plantings will be monitored quarterly for the first two years and

yearly thereafter, to ensure plantings meet success criteria in Mitigation Monitoring Plan. Therefore, project impacts to riparian habitat and other sensitive natural communities are less than significant under CEQA. Mitigation measures are not warranted.

#### **Answer to checklist question d**

##### **Project Impacts to Fish or Wildlife Movement Corridors**

**Potential Impacts.** The project site provides no significant fish or wildlife movement corridor. Bean Creek provides only intermittent riparian cover for wildlife, and therefore is unlikely to function as an important movement corridor. At most, this seasonal creek may facilitate the movement of fish upstream from an offsite perennial pond during periods of creek flow. The objective of the project is to enhance riparian vegetation, which will only improve movement opportunities for native wildlife species. Therefore, project impacts to fish or wildlife movement corridors are considered less than significant. Mitigation measures are not warranted.

#### **Answer to checklist question c**

##### **Project Impact to Jurisdictional Waters**

**Potential Impacts.** Approximately 8.5 acres of verified waters of the U.S. are located on the Bean Creek Meadow Restoration project site. The project will not result in impacts to this entire acreage. Impacts to wetland swales and wetland channels will primarily consist of equipment passing through these features, and are expected to be minimal. Most project impacts to waters of the U.S. will consist of work in the Bean Creek channel. The entire 5-acre reach of Bean Creek that passes through the project site has the potential to be impacted by the installation of plugs and creation of ponds. However, the Bean Creek Meadow Restoration project is self-mitigating in that it will result in the creation of 39 acres of wet meadow, emergent marsh, and perennial ponds. Even if the project impacts all verified waters of the U.S. on the site, these impacts will be mitigated at a ratio of more than 4:1. The goal of the project is to enhance the function and value of the Bean Creek wetland system, and as such, project impacts to these wetlands and waters are considered less than significant under CEQA. The project is self-mitigating. No additional mitigation is warranted.

#### **Mitigation Measures**

The following mitigation measures are proposed based on recommendations made by Live Oak Associates, Inc. in the Bean Meadow Biological Evaluation and by the design consultants.

BIO-1. Avoid or Minimize Impacts to Pallid Bats. Removal of trees shall occur between October 1<sup>st</sup> and May 31<sup>st</sup> when pallid bats would not be maternally roosting. If trees cannot be removed outside of the pallid bats maternal roosting season, then pre-construction surveys for maternal bat roosts shall be conducted in areas containing possible habitat within 30 days prior to tree removal. Any trees being used as maternal roosts must be avoided until a qualified biologist has determined the bats have abandoned the trees.

BIO-2. Avoid or Minimize Impacts to Threatened, Endangered, Sensitive, or Special-Status Wildlife and Plant Species. Any detection of threatened, endangered, sensitive, or special-status wildlife species or of nests, roost sites, and other areas of concentrated use of these species, before or during project implementation will be reported to a professional biologist for consultation and instruction on appropriate protection measures.

BIO-3. Implement Limited Operating Period (LOP) to avoid disturbances to breeding activities and habitat of special-status wildlife species, LOPs will be implemented around nests, roost sites, and other areas of concentrated use by these species, if present. A LOP constitutes a period during which project activities will not occur and is enforced in project implementation contracts.

BIO – 4. Minimize ground and vegetation disturbance. Ground and vegetation disturbance will be minimized during implementation of the proposed action. Activities will be confined to designated marked access routes and well-marked project work sites. There will be a project manager or representative on site at all times during work within the floodplain or stream channels. The contractor will be instructed on the importance of avoiding disturbance of anything not necessary to meet project goals. Use planned disturbance sites as access routes where possible. Plan access routes carefully.

BIO-5. Mulch and revegetate disturbed areas. Soils lacking adequate ground cover because of exposure or other disturbances caused by the proposed action will be mulched with available forest materials such as pine needles, tree bark, and branches; or with imported mulch such as certified weed-free straw or tub-ground wood chips. In addition, areas denuded during construction will be actively revegetated. To ensure fastest possible site stabilization any disturbed sites will be treated for erosion control and re-vegetated as the work is done, and such measures will continue as construction of each site is completed. The stabilization measures will include transplanting vegetation that is excavated as a result of construction work, mulching bare areas as the work is complete, seeding native species as recommended by our botanist, monitoring for soil stability and re-vegetation success, and taking other appropriate actions to meet the goals of site rehabilitation.

BIO-6. Control noxious and invasive weeds. Measures to control the introduction and spread of noxious weeds in the action area will be implemented during project implementation. The management requirements incorporated into the proposed action are designed to reduce the risk of noxious weed invasion from a moderate to a low level by using prevention measures to mitigate the risks.

In addition, the following additional mitigation measures are proposed based on provisions included in the Steambed Alteration Agreement issued by the California Department of Fish and Wildlife (CDFW). The measures are designed to mitigate potential impacts to state-listed special status species that have the potential to occur in the project area.

CDFW-1. *Golden Eagle*: No Project-related activities shall be completed from February 1 through August 31 unless a qualified biologist conducts visual surveys for nesting activity of golden eagle within a ½-mile radius of the Project site no more than two (2) weeks before Project activity begins. Surveys shall be conducted at appropriate nesting times and concentrate on suitable nesting structures. If active eagle nests are found, no Project activities shall occur within ½-mile of the Project site until after the breeding season has ended or a qualified biologist has determined and CDFW has confirmed in writing that the young have fledged and are no longer dependent on parental care or the nest for survival.

CDFW-2. *Great Gray Owl*: No Project-related activities shall be completed from March 1 through July 15 unless a qualified biologist surveys for nesting activity of great grey owl within a ½-mile radius of the Project site no more than two (2) weeks before construction begins. The survey shall follow the guidelines set forth in the Survey Protocol for the Great Gray Owl in the Sierra Nevada of California (Beck T.W., and J. Winter; May, 2000), Section 4. Surveying, a. Calls: If active great gray owl nests are found, no Project activities shall occur until after the

breeding season has ended or a qualified biologist has determined that the young have fledged and are no longer dependent on parental care or the nest for survival.

CDFW-3. *Willow Flycatcher*: If project activity is scheduled to occur from April 1 through August 31, Permittee shall survey riparian habitat areas for willow flycatcher nesting activity within a 500-foot radius of the defined work area no more than two (2) weeks before Project activity begins. The survey shall follow the methodology set forth in the Willow Flycatcher Survey Protocol for California. If any active nests are found, Permittee shall protect nests and nest trees with a minimum 500-foot buffer until young have fledged and are no longer reliant on the nest site or parental care, as determined by a qualified biologist and confirmed in writing by CDFW.

CDFW-4. *Northern Goshawk and Spotted Owl*: No Project-related activities shall be completed from March 15 through August 15 unless a qualified biologist conducts protocol-level surveys for nesting activity of northern goshawk and spotted owl within a ½-mile radius of the Project site no more than two (2) weeks before construction begins. Surveys shall be conducted at appropriate nesting times and concentrate on mature trees. If active nests are found, these nests and nest trees shall be designated an Environmentally Sensitive Area (ESA), and protected with a minimum ¼-mile buffer until the young have fledged and are no longer reliant on the nest site or parental care.

CDFW-5. *Western Pond Turtle*: Any western pond turtles discovered at the site immediately prior to or during Project activities shall be allowed to move out of the area on their own volition. If this is not feasible they shall be captured by a qualified biologist and relocated out of harm's way to the nearest suitable habitat immediately upstream or downstream from the Project site.

V. CULTURAL RESOURCES. Would the project:	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answers to checklist questions c and d**

No paleontological or unique geologic features are present in the project area. There are no sites with human remains in the project area.

**Answer to checklist question a and b**

A cultural resources survey was conducted by Francis Heritage LLC, Sonora, California. Tasks included a record search, historical research, field surveys, Native American consultation, and preparation of a report which documents the study, its results, eligibility evaluations, and effect determinations. The Area of Potential Effects (APE) consists of the restoration area, access route, and staging area within a portion of two parcels along Bean Creek in northern Mariposa County. Two cultural resources were recorded within the Area of Potential Effects, one a prehistoric site and the other a historic dam site.

Bean Creek – 1. A prehistoric site consisting of a single milling feature with six cups and no associated artifacts. This site was not formally evaluated, but is assumed to be eligible to the California Register of Historical Resources.

Bean Creek- 2. A historic-era concrete dam on Bean Creek.

Both resources are outside the restoration area as well as outside any land that would be directly impacted by project-related activities. Therefore, they were not formally evaluated for eligibility to any register and impacts of the project to historic and archaeological resources are considered less than significant under CEQA.

**Mitigation Measures**

CUL – 1. Locate restoration activities and equipment access routes to avoid direct impacts to known cultural resources.

CUL – 2. If the design of the proposed project is altered or changed, additional review by the Francis Heritage Resources staff will be required. Furthermore, if any previously unrecorded cultural resources are discovered during this action, all project-related activities must cease immediately and the consultation process as outlined in Section 800.13 of the Advisory Council on Historic Preservation’s regulations 36 CFR 800 must be initiated.

VI. GEOLOGY AND SOILS. Would the project:

<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- |  |                          |                                     |                          |                                     |
|--|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| ii) Strong seismic ground shaking?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| iii) Seismic-related ground failure, including liquefaction?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| iv) Landslides?  | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Result in substantial soil erosion or the loss of topsoil?  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?  | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**Answers to Checklist Questions a, c, d, and e**

The proposed project is not located in an Earthquake Fault Zone or on a geologic unit which is unstable or that would become unstable as a result of the project. The project is not located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code. Question e. is irrelevant to the proposed project area.

### **Answer to Checklist Question b**

The project will not result in the loss of topsoil; all topsoil excavated from the project area will be salvaged and re-used for revegetation.

Some portions of channels and flood plains being treated are actively eroding. The proposed activities will stop the active erosion immediately. There is potential for a short-term increase in soil erosion during implementation of restoration actions until disturbed areas are stabilized with effective erosion control and revegetation methods. Specifically, soil erosion could be increased through excavating fill to block off the eroded gullies, placing fill in the eroded gullies, repairing headcuts within the active channel of Bean Creek and developing temporary access routes and staging areas. However, the proposed actions will decrease overall erosion from the area. The newly restored channel will have greater floodplain access, reinstating the natural overbank sediment deposition process and reducing in-channel erosion.

The highest potential for erosion from the proposed project areas are in locations where the new channel segments readjust to the flow. For high flow situations this potential sediment transport should be lower than present-day instream erosion from the existing confined system. Erosion from access routes across the meadow could also occur. Equipment access and operations will be limited in meadow areas to prevent any adverse impacts. Revegetation and mulching will aid in controlling sediment. Revegetation of bare soil will be implemented as soon as possible after construction. With successful revegetation, and sediment control measures applied prior to the snow and runoff season, erosion from the project area will be prevented.

The mitigation measures provided below are expected to reduce impacts on geology/soils to a less-than-significant level.

### **Mitigation Measures**

SOIL-1. Limit timing of activities. Watershed restoration activities will occur between June 1 and October 31 each year to avoid the period of highest rainfall, stream flows, and erosion potential. During periods of inclement weather, operations will be shut down until stream flows are sufficiently low and soil/channel conditions are sufficiently dry and stable to allow for construction to continue without the threat of substantial soil compaction, erosion, sedimentation, and offsite sediment transport.

SOIL-2. Stabilize construction spoils and topsoil. Earthen spoils generated during the construction will be temporarily stockpiled in stable areas located outside of subject wetlands and floodplain areas or immediately used in streambed plugs. Due to the nature of the work and locations of the proposed disturbances, there would be only very short periods of time when material from construction areas would be at risk from entering the active stream channel during a precipitation event and only a small percentage of any site would be in a location where this is a risk. Topsoil will be staged adjacent to the proposed plug where it will be used. The topsoil will be removed from the area to be excavated and placed in a stable location where it will not enter the active channel. The plug will be constructed with the subsoil materials as it is

excavated from the pond sites and then the topsoil will be placed on top of the plug. The plug material will be excavated and placed at the same time and so will not be staged.

Pine needles, straw wattles, silt fences, or hay bales will be installed around the base of temporary stockpiles to intercept runoff and sediment draining from the stockpiles. If necessary, the stockpiles will be further stabilized by mulching them with available forest materials or an appropriate geotextile material. Although no unused construction spoils are anticipated, any spoils not used during construction will be hauled offsite and deposited in stable areas once construction is complete.

After completion, permanent best management practices (BMP) would be installed where needed. Permanent BMPs include re-vegetation, mulching with native or imported weed free materials, and use of erosion control fabric to protect bare areas until revegetation is completed. The work will be planned when five days or more of good weather is predicted. In the case of unpredicted weather, temporary BMPs will be installed to protect the construction area. If unexpected weather, including thundershowers etc., comes in, straw wattles, silt fences, or hay bales will be installed around the base of temporary stockpiles to intercept runoff and sediment draining from the stockpiles. If necessary, the stockpiles will be further stabilized by mulching them with available forest materials or covering them with an appropriate plastic or geotextile material.

SOIL-3. Implement erosion and sediment control BMPs on temporarily delayed project elements. Appropriate erosion and sediment control BMPs will be applied to all disturbed ground during temporary construction delays caused by inclement weather or other circumstances. Measures applied will vary with conditions, but will include (1) the placement of readily available mulch materials (e.g., pine needles, branches, coarse woody debris) and/or imported mulch materials (e.g., certified weed-free rice straw) to protect disturbed surfaces from raindrop impact, reduce runoff velocity, and reduce erosion, and (2) the installation of straw wattles, silt fences, and/or straw/hay bales to reduce runoff velocity and intercept sediment.

SOIL-4. Minimize ground and vegetation disturbance. Ground and vegetation disturbance will be minimized and disturbed areas will be rehabilitated as quickly as possible during implementation of the proposed action. To minimize disturbance, each project area will be carefully laid out including all access routes, boundaries for equipment will be flagged out, equipment operators will be instructed on the expectation to minimize impacts, and the project manager will be on site at all times while stream work is occurring. There will also be a project manager or representative on site at all times during work within the flood plain. The contractor and all on-site personnel will be trained on the importance of not disturbing anything not necessary to meet project goals.

SOIL-5. Mulch and revegetate disturbed areas. Soils lacking adequate ground cover because of exposure or other disturbances caused by the proposed action will be mulched with available forest materials such as pine needles, tree bark, and branches; or with imported mulch such as certified weed-free straw or tub-ground wood chips. In addition, areas denuded during construction will be actively revegetated. To ensure fastest possible site stabilization any disturbed sites will be treated for erosion control and re-vegetated as the work is done, and such

measures will continue as construction of each site is completed. The stabilization measures will include transplanting vegetation that is excavated as a result of construction work, mulching bare areas as the work is complete, seeding native species as recommended by our botanist, monitoring for soil stability and re-vegetation success, and taking other appropriate actions to meet the goals of site rehabilitation.

SOIL-6. Decommission abandoned staging areas. Equipment staging areas used during construction and abandoned as a result of the proposed work will be restored to natural conditions by loosening or scarifying the soil, seeding or planting with native species, and mulching with native and/or weed-free material.

VII. GREENHOUSE GAS EMISSIONS. Would the project:	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answer to checklist question b**

The project will not conflict with any applicable plans, policies, or regulations adopted for the purpose of reducing greenhouse gas emissions.

**Answer to checklist question a**

Greenhouse gases will be generated during construction. Greenhouse gas emissions will be typical of operating construction equipment, and are not expected to have a significant impact.

There will be no permanent increase to greenhouse gas emissions as a result of the project, and the project is expected to actually decrease greenhouse gas emissions once the meadow habitat and stream channels are restored. Through re-vegetation and enhancement of the wetland and riparian area, plant material available to capture carbon dioxide should increase in the project area, reduce long-term greenhouse gas emissions from the site.

**Mitigation Measures**

None required.

VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

**Answers to checklist questions a, c, d, e, f, g**

The proposed project would not routinely transport, use, or dispose of hazardous materials. It is not located near locations listed in questions c, d, e, or f. It would not affect emergency plans.

**Answers to checklist question b**

The proposed project is not expected to result in the creation of health hazards, potential health hazards or expose people to potential health hazards since the proposed project is a small construction project located in a rural area. During construction, the use of construction equipment may have the potential to release hazardous substances, such as oil and diesel, or may contaminate exposed soil. Mitigation Measures HAZ 1 – 4 will reduce the risk from hazardous substances to a less than significant level.

**Answer to checklist question h**

The project area is located near a rural residential area. The project site is located in an area of very high wildfire threat. The proposed project could have an initial impact on potential ignitions of wildfire because of construction equipment; however, the work will be mostly within floodplain/meadow areas where there is less fire hazard. Mitigation measures HAZ - 5 and HAZ - 6 will reduce the risk to less than significant.

**Mitigation Measures**

HAZ-1. Properly dispose of wastes and petroleum products. Wastes and petroleum products used during construction will be collected and removed from the project site in accordance with the Resource Conservation and Recovery Act regulations and federal Occupational Safety and Health Administration (OSHA) standards.

HAZ-2. Remediate contaminated Soil. If contaminated soil and/or groundwater is encountered, or if suspected contamination is encountered during project construction, work will be halted in the area, and the type and extent of the contamination will be identified. A qualified professional, in consultation with the appropriate federal, state, and/or local regulatory agencies, will then develop an appropriate method to remediate the contamination.

HAZ-3. Prevent discharges of hazardous substances from refueling and maintenance. All equipment refueling and maintenance activities will occur outside wetlands and flood plain areas to minimize the potential to negatively affect water quality. Equipment will be required to be in good operational condition (e.g., no leaky hoses, etc.), with daily inspections to check for new leaks.

HAZ-4. Contain spills. Plumas Corporation will have spill containment materials onsite. Materials kept on site will be properly packaged and contained and spills will be immediately cleaned up. Strict onsite handling rules will be implemented to minimize spills and keep potentially contaminated materials out of the drainage waterways.

HAZ-5. Keep fire tools onsite. Fire extinguishers and tools shall be required onsite during project activities.

HAZ- 6. Monitor fire weather. Daily monitoring of fire weather and U.S. Forest Service Fire Activity Level will occur during construction. If certain thresholds are reached, construction will be shut down.

IX. HYDROLOGY AND WATER QUALITY. Would the project:

	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- |   |                          |                                     |                                     |                                     |
|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| f) Otherwise substantially degrade water quality?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?                  | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?                    | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| j) Inundation by seiche, tsunami, or mudflow?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**Answer to checklist question b**

The project should improve groundwater storage in the project area. Restoration actions will increase the water holding capacity of the floodplain and riparian areas by blocking off degraded stream channels that currently drain the meadow water tables.

**Answer to checklist questions g, i and j**

The project will not create any housing. The project will not expose people or structures to impacts from flooding or inundation by seiche, tsunami, or mudflow.

**Answer to checklist questions a, e and f**

The primary goal of the proposed project is to improve the watershed function and water quality by restoring the watercourse to its original channel. Construction work within the 100-year flood plain and the stream channel has the potential to discharge sediment, violate water quality standards, and degrade water quality. Potential pollutants include sediment, turbidity, and to a lesser degree oil and grease. The project has been designed to minimize these potential impacts through implementation of BMPs and permit conditions. See Mitigation Measures SOIL 1- 6 for description of sediment control measures. See Mitigation Measures HAZ 1-6 for

description of control measures for other hazardous materials. The implementation of these mitigation measures will reduce the risk to water quality to less than significant. The project would not affect existing or planned stormwater drainage systems.

### **Answer to checklist question c and d**

The project is designed to alter the existing drainage pattern in some places by diverting the stream from the existing degraded channel system into stable remnant or historic channels. The result would be a stable stream and elimination of the current stream erosion. The project would once again give the stream access to the flood plain and will allow the spring runoff to spread out and reduce the stream energy thus reducing erosive power and also helping to filter upstream runoff and allowing for more infiltration.

### **Answer to checklist question h**

The project will redirect flow in a positive way by reconnecting the channels with the flood plains and in some cases restoring flow to original channels where they have been diverted. This would be accomplished by closing off the degraded section of stream channel by constructing a series of plugs and ponds. These structures would not impede flood flows and would become part of the functioning flood plain.

### **Mitigation Measures**

HYDRO-1. Prevent discharges of hazardous substances from refueling and maintenance. All equipment refueling and maintenance activities will occur outside wetlands and flood plain areas to minimize the potential to negatively affect water quality.

HYDRO-2. Control sediment and revegetate within wetlands and flood plains. Ground disturbance will be minimized and confined to the marked project area. All disturbed areas will be mulched with native material or weed-free straw (e.g., rice straw) and seeded with native species. Where needed, excavation sites will have perimeter containment installed around the site's lower perimeter to contain any eroded material. Native vegetation such as willows and sedges would be transplanted if they need to be removed as part of the project. All disturbed areas will be revegetated with approved native vegetation.

HYDRO-3. Stabilize subject stream banks. Stream banks on the top plug where the stream will be diverted, and any plug that will be exposed to flowing water will be stabilized and protected from erosion using a combination of structural and biotechnical methods. The specific methods used will vary depending on site conditions, but at a minimum will include one or more of the following: adjustment of stream bank slopes; installation of rock slope protection (rip-rap); installation of biodegradable erosion control blankets; installation of willow wattles (live fascines); and/or the use of pole cuttings, container stock, and seed collected from local sources to reestablish native stream zone vegetation.

HYDRO-4. Achieve zero discharge during in channel excavation work. The goal during in channel excavation is zero discharge. Most of the proposed excavation work will occur within the channel to be obliterated. In a few cases excavation will occur within those areas which will

receive flow during the following runoff season. The following practices will be used to achieve zero discharge: (1) wherever possible, delay activities until flow has ceased or is at lowest flow; (2) if flow is present, convey flow around the construction site and discharge in a stable upland location; (3) install a coffer dam below the site to trap sediment and detain any turbid water; (4) dispose of any sediment from behind the dam in a stable upland location; and (5) remove turbid water by pumping and sprinkling it in an upland location and manner to allow infiltration into the soil.

HYDRO-5. Contain spills. Strict onsite handling rules will be implemented to minimize spills and keep potentially contaminated materials out of the drainage waterways.

HYDRO-6. Limit staging of materials and equipment. Staging of materials and equipment will be limited to existing disturbed areas outside of wetlands and flood plain areas, where soils are already compacted and vegetation has been cleared. No new disturbance will be created for staging and stockpile areas, and no trees or other vegetation will be removed. Following project completion, these areas will be tilled, seeded, and mulched.

	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
X. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answers to checklist questions**

The project will not physically divide an established community, conflict with any land use plans, policies or regulations, or conflict with any habitat conservation or natural community conservation plans.

**Mitigation Measures**

None required.

XI. MINERAL RESOURCES. Would the project:	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answers to Checklist Questions**

The proposed project would not affect the availability of any mineral resources.

**Mitigation Measures**

None required.

XII. NOISE. Would the project:	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

**Answers to checklist questions c, e, and f**

The project will not result in a permanent increase in noise levels. The project is not located within an airport land use plan, within two miles of a public airport, or within the vicinity of a private airstrip.

**Answers to checklist questions a, b, and d**

During construction, project-related noise or vibrations could disturb individuals; however the additional noise would be temporary disturbance and the area proposed for treatment currently experiences noise associated with regular vehicular road use, due to the presence of Fiske Road, and activities would be concentrated in the middle of the meadow, away from nearby residences. The impact to noise is less than significant.

**Mitigation Measures**

No mitigation is required.

XIII. POPULATION AND HOUSING. Would the project:	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answers to checklist questions**

The project will not have an impact on population growth or housing. There are no growth-inducing aspects of this project.

**Mitigation Measures**

None needed.

XIV. PUBLIC SERVICES. Would the project:

<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answers to checklist questions**

Construction activities are not expected to interfere with police and fire access. In addition, the project would have no effect on schools or other public facilities, since none are located in the project area.

**Mitigation Measures**

No mitigation is required.

XV. RECREATION. Would the project:	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answers to checklist questions**

The project does not have an effect on existing recreational facilities. The project will not increase recreational use of the project area.

**Mitigation measures**

None required.

XVI. TRANSPORTATION/TRAFFIC. Would the project:	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?
- c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?
- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- e) Result in inadequate emergency access?
- f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

**Answers to Checklist Questions**

The project would have no impacts on traffic or circulation in the manner described.

**Mitigation Measures**

No mitigation is required.

XVII. UTILITIES AND SERVICE SYSTEMS. Would the project:	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?
- e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
- f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?
- g) Comply with federal, state, and local statutes and regulations related to solid waste?

**Answers to checklist questions**

The project would not impact any utilities or service systems in the manner described.

**Mitigation Measures**

None required.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE. Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answer to checklist question a**

With the previously discussed mitigations incorporated, the project will not substantially degrade the environment in the manner described above. See Section IV, Biological Resources, for a complete discussion. Mitigation Measures BIO 1-6 and CDFW 1-5 will prevent any impacts to plant and animal species. See Section V, Cultural Resources for a complete discussion of historic and prehistoric resources. Mitigation measure CUL 1-2 will prevent any impacts to cultural resources.

**Answer to checklist question b**

The project would not contribute to any cumulative impacts for the following reasons: 1) it is not part of a larger project, 2) although the project could have some temporary impacts, it has been designed to avoid and mitigate for these impacts to that they will be less than significant, and 3) the long term effect of the project will be restoration and enhancement of the ecosystem and landscape.

**Answer to checklist question c**

The project would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.

## **SECTION 4: PROPOSED MITIGATED NEGATIVE DECLARATION**

**PURSUANT TO THE TITLE 14, CALIFORNIA CODE OF REGULATIONS  
SECTION 15000, et seq.**

**PROJECT TITLE:** Bean Creek Meadow Restoration Project

**LEAD AGENCY:** Central Valley Regional Water Quality Control Board

**APPLICANT:** Sierra Foothill Conservancy

### **PROJECT DESCRIPTION:**

The Sierra Foothill Conservancy will restore the hydrologic function of the channel and floodplain system of Bean Creek and its associated wet meadow within Bean Creek Preserve. The project will employ a technique that constructs a series of earth plugs to fill a gullied channel and raise the local water table, while redirecting flow from the existing incised channel into a stable channel, with reduced dimensions, that is connected with a broad floodplain during annual peak flow events. Restoration will consist of excavating eight borrow areas (ponds) to construct 12 plugs within a gully that is approximately 3500 feet long, over approximately 9.6 acres. It will also eliminate seven active headcuts on the mainstream, tributaries, and remnant channels. The project area is being monitored before and after restoration for greenhouse gas emissions, soil carbon sequestration, groundwater levels, and vegetation.

### **PROJECT LOCATION:**

The project is located on the Bean Creek Preserve off of Fiske Road, approximately 1.5 miles northwest of Greeley Hill, CA in Mariposa County.

### **MITIGATION MEASURES:**

This subsection includes the full text of project-specific mitigation measures identified in the Initial Study/Proposed Mitigated Negative Declaration.

#### **Mitigation Measures to Protect Aesthetics (Section I):**

See Mitigation Measures SOIL-2 and 4-6 under Mitigation Measures to Protect Geology and Soils below.

#### **Mitigation Measures to Protect Air Quality (Section III):**

- AIR-1. All areas (including unpaved roads) with vehicle traffic will be watered as necessary for stabilization of dust emissions. Care will be taken to avoid excessive watering that could cause a discharge to surface waters.
- AIR-2. On-site vehicle speeds will be limited to 15 miles per hour on unpaved surfaces.
- AIR-3. Inactive soil stockpiles will be watered or covered during windy conditions.

- AIR-4. Disturbed areas will be revegetated as per Mitigation Measure BIO 5-6. If immediate permanent re-vegetation is impractical due to factors such as poor seasonal timing, then temporary measures such as adequate covering with mulch will be implemented.
- AIR-5. Construction activities will comply with EPA air quality standards on dust and condensed fumes, so that emissions do not exceed hourly levels as regulated per processing weight.

**Mitigation Measures to Protect Biological Resources (Section IV):**

- BIO-1. Avoid or Minimize Impacts to Pallid Bats. Removal of trees shall occur between October 1<sup>st</sup> and May 31<sup>st</sup> when pallid bats would not be maternally roosting. If trees cannot be removed outside of the pallid bats maternal roosting season, then pre-construction surveys for maternal bat roosts shall be conducted in areas containing possible habitat within 30 days prior to tree removal. Any trees being used as maternal roosts must be avoided until a qualified biologist has determined the bats have abandoned the trees.
- BIO-2. Avoid or Minimize Impacts to Threatened, Endangered, Sensitive, or Special-Status Wildlife and Plant Species. Any detection of threatened, endangered, sensitive, or special-status wildlife species or of nests, roost sites, and other areas of concentrated use of these species, before or during project implementation will be reported to a professional biologist for consultation and instruction on appropriate protection measures.
- BIO-3. Implement Limited Operating Period (LOP) to avoid disturbances to breeding activities and habitat of special-status wildlife species, LOPs will be implemented around nests, roost sites, and other areas of concentrated use by these species, if present. A LOP constitutes a period during which project activities will not occur and is enforced in project implementation contracts.
- BIO-4. Minimize ground and vegetation disturbance. Ground and vegetation disturbance will be minimized during implementation of the proposed action. Activities will be confined to designated marked access routes and well-marked project work sites. There will be a project manager or representative on site at all times during work within the floodplain or stream channels. The contractor will be instructed on the importance of avoiding disturbance of anything not necessary to meet project goals. Use planned disturbance sites as access routes where possible. Plan access routes carefully.
- BIO-5. Mulch and revegetate disturbed areas. Soils lacking adequate ground cover because of exposure or other disturbances caused by the proposed action will be mulched with available forest materials such as pine needles, tree bark, and branches; or with imported mulch such as certified weed-free straw or tub-ground wood chips. In addition, areas denuded during construction will be actively revegetated. To ensure fastest possible site stabilization any disturbed sites will be treated for erosion control and re-vegetated as the work is done, and such measures will continue as construction of each site is completed. The stabilization measures will include transplanting vegetation that is excavated as a result of construction work, mulching bare areas as the work is complete,

seeding native species as recommended by our botanist, monitoring for soil stability and re-vegetation success, and taking other appropriate actions to meet the goals of site rehabilitation.

- BIO-6. Control noxious and invasive weeds. Measures to control the introduction and spread of noxious weeds in the action area will be implemented during project implementation. The management requirements incorporated into the proposed action are designed to reduce the risk of noxious weed invasion from a moderate to a low level by using prevention measures to mitigate the risks.
- CDFW-1. *Golden Eagle*: No Project-related activities shall be completed from February 1 through August 31 unless a qualified biologist conducts visual surveys for nesting activity of golden eagle within a ½-mile radius of the Project site no more than two (2) weeks before Project activity begins. Surveys shall be conducted at appropriate nesting times and concentrate on suitable nesting structures. If active eagle nests are found, no Project activities shall occur within ½-mile of the Project site until after the breeding season has ended or a qualified biologist has determined and California Department of Fish and Wildlife (CDFW) has confirmed in writing that the young have fledged and are no longer dependent on parental care or the nest for survival.
- CDFW-2. *Great Gray Owl*: No Project-related activities shall be completed from March 1 through July 15 unless a qualified biologist surveys for nesting activity of great grey owl within a ½-mile radius of the Project site no more than two (2) weeks before construction begins. The survey shall follow the guidelines set forth in the Survey Protocol for the Great Gray Owl in the Sierra Nevada of California (Beck T.W., and J. Winter; May, 2000), Section 4. Surveying, Subsection a.Calls: If active great gray owl nests are found, no Project activities shall occur until after the breeding season has ended or a qualified biologist has determined that the young have fledged and are no longer dependent on parental care or the nest for survival.
- CDFW-3. *Willow Flycatcher*: If project activity is scheduled to occur from April 1 through August 31, Permittee shall survey riparian habitat areas for willow flycatcher nesting activity within a 500-foot radius of the defined work area no more than two (2) weeks before Project activity begins. The survey shall follow the methodology set forth in the Willow Flycatcher Survey Protocol for California. If any active nests are found, Permittee shall protect nests and nest trees with a minimum 500-foot buffer until young have fledged and are no longer reliant on the nest site or parental care, as determined by a qualified biologist and confirmed in writing by CDFW.
- CDFW-4. *Northern Goshawk and Spotted Owl*: No Project-related activities shall be completed from March 15 through August 15 unless a qualified biologist conducts protocol-level surveys for nesting activity of northern goshawk and spotted owl within a ½-mile radius of the Project site no more than two (2) weeks before construction begins. Surveys shall be conducted at appropriate nesting times and concentrate on mature trees. If active nests are found, these nests and nest trees shall be designated an Environmentally Sensitive Area (ESA) and protected with a minimum quarter-mile buffer until the young have fledged and are no longer reliant on the nest site or parental care.

CDFW-5. *Western Pond Turtle*: Any western pond turtles discovered at the site immediately prior to or during Project activities shall be allowed to move out of the area on their own volition. If this is not feasible, they shall be captured by a qualified biologist and relocated out of harm's way to the nearest suitable habitat immediately upstream or downstream from the Project site.

#### **Mitigation Measures to Protect Cultural Resources (Section V):**

- CUL-1. Locate restoration activities and equipment access routes to avoid direct impacts to known cultural resources.
- CUL-2. If the design of the proposed project is altered or changed, additional review by the Francis Heritage Resources staff will be required. Furthermore, if any previously unrecorded cultural resources are discovered during this action, all project-related activities must cease immediately and the consultation process as outlined in Section 800.13 of the Advisory Council on Historic Preservation's regulations 36 CFR 800 must be initiated.

#### **Mitigation Measures to Protect Geology and Soils (Section VII):**

- SOIL-1. Limit timing of activities. Watershed restoration activities will occur between June 1 and October 31 each year to avoid the period of highest rainfall, stream flows, and erosion potential. During periods of inclement weather, operations will be shut down until stream flows are sufficiently low and soil/channel conditions are sufficiently dry and stable to allow for construction to continue without the threat of substantial soil compaction, erosion, sedimentation, and offsite sediment transport.
- SOIL-2. Stabilize construction spoils and topsoil. Earthen spoils generated during the construction will be temporarily stockpiled in stable areas located outside of subject wetlands and floodplain areas or immediately used in streambed plugs. Due to the nature of the work and locations of the proposed disturbances, there would be only very short periods of time when material from construction areas would be at risk from entering the active stream channel during a precipitation event and only a small percentage of any site would be in a location where this is a risk. Topsoil will be staged adjacent to the proposed plug where it will be used. The topsoil will be removed from the area to be excavated and placed in a stable location where it will not enter the active channel. The plug will be constructed with the subsoil materials as it is excavated from the pond sites and then the topsoil will be placed on top of the plug. The plug material will be excavated and placed at the same time and so will not be staged.

Pine needles, straw wattles, silt fences, or hay bales will be installed around the base of temporary stockpiles to intercept runoff and sediment draining from the stockpiles. If necessary, the stockpiles will be further stabilized by mulching them with available forest materials or an appropriate geotextile material. Although no unused construction spoils are anticipated, any spoils not used during construction will be hauled offsite and deposited in stable areas once construction is complete.

After completion, permanent BMPs would be installed where needed. Permanent BMPs include re-vegetation, mulching with native or imported weed-free materials, and use of erosion control fabric to protect bare areas until revegetation is completed. The work will be planned when five days or more of good weather is predicted. In the case of unpredicted weather, temporary BMPs will be installed to protect the construction area. If unexpected weather, including thundershowers etc., comes in, straw wattles, silt fences, or hay bales will be installed around the base of temporary stockpiles to intercept runoff and sediment draining from the stockpiles. If necessary, the stockpiles will be further stabilized by mulching them with available forest materials or covering them with an appropriate plastic or geotextile material.

- SOIL-3. Implement erosion and sediment control BMPs on temporarily delayed project elements. Appropriate erosion and sediment control BMPs will be applied to all disturbed ground during temporary construction delays caused by inclement weather or other circumstances. Measures applied will vary with conditions, but will include (1) the placement of readily available mulch materials (e.g., pine needles, branches, coarse woody debris) and/or imported mulch materials (e.g., certified weed-free rice straw) to protect disturbed surfaces from raindrop impact, reduce runoff velocity, and reduce erosion, and (2) the installation of straw wattles, silt fences, and/or straw/hay bales to reduce runoff velocity and intercept sediment.
- SOIL-4. Minimize ground and vegetation disturbance. Ground and vegetation disturbance will be minimized and disturbed areas will be rehabilitated as quickly as possible during implementation of the proposed action. To minimize disturbance, each project area will be carefully laid out including all access routes, boundaries for equipment will be flagged out, equipment operators will be instructed on the expectation to minimize impacts, and the project manager will be on site at all times while stream work is occurring. There will also be a project manager or representative on site at all times during work within the flood plain. The contractor and all on-site personnel will be trained on the importance of not disturbing anything not necessary to meet project goals.
- SOIL-5. Mulch and revegetate disturbed areas. Soils lacking adequate ground cover because of exposure or other disturbances caused by the proposed action will be mulched with available forest materials such as pine needles, tree bark, and branches; or with imported mulch such as certified weed-free straw or tub-ground wood chips. In addition, areas denuded during construction will be actively revegetated. To ensure fastest possible site stabilization any disturbed sites will be treated for erosion control and re-vegetated as the work is done, and such measures will continue as construction of each site is completed. The stabilization measures will include transplanting vegetation that is excavated as a result of construction work, mulching bare areas as the work is complete, seeding native species as recommended by our botanist, monitoring for soil stability and re-vegetation success, and taking other appropriate actions to meet the goals of site rehabilitation.
- SOIL-6. Decommission abandoned staging areas. Equipment staging areas used during construction and abandoned as a result of the proposed work will be restored to

natural conditions by loosening or scarifying the soil, seeding or planting with native species, and mulching with native and/or weed-free material.

#### **Mitigation Measures to Protect Hazards and Hazardous Materials:**

- HAZ-1. Properly dispose of wastes and petroleum products. Wastes and petroleum products used during construction will be collected and removed from the project site in accordance with the Resource Conservation and Recovery Act regulations and federal Occupational Safety and Health Administration (OSHA) standards.
- HAZ-2. Remediate contaminated Soil. If contaminated soil and/or groundwater is encountered, or if suspected contamination is encountered during project construction, work will be halted in the area, and the type and extent of the contamination will be identified. A qualified professional, in consultation with the appropriate federal, state, and/or local regulatory agencies, will then develop an appropriate method to remediate the contamination.
- HAZ-3. Prevent discharges of hazardous substances from refueling and maintenance. All equipment refueling and maintenance activities will occur outside wetlands and flood plain areas to minimize the potential to negatively affect water quality. Equipment will be required to be in good operational condition (e.g., no leaky hoses, etc.), with daily inspections to check for new leaks.
- HAZ-4. Contain spills. Plumas Corporation will have spill containment materials onsite. Materials kept on site will be properly packaged and contained and spills will be immediately cleaned up. Strict onsite handling rules will be implemented to minimize spills and keep potentially contaminated materials out of the drainage waterways.
- HAZ-5. Keep fire tools onsite. Fire extinguishers and tools shall be required onsite during project activities.
- HAZ- 6. Monitor fire weather. Daily monitoring of fire weather and U.S. Forest Service Fire Activity Level will occur during construction. If certain thresholds are reached, construction will be shut down.

#### **Mitigation Measures to Protect Hydrology and Water Quality:**

- HYDRO-1. Prevent discharges of hazardous substances from refueling and maintenance. All equipment refueling and maintenance activities will occur outside wetlands and flood plain areas to minimize the potential to negatively affect water quality.
- HYDRO-2. Control sediment and revegetate within wetlands and flood plains. Ground disturbance will be minimized and confined to the marked project area. All disturbed areas will be mulched with native material or weed-free straw (e.g., rice straw) and seeded with native species. Where needed, excavation sites will have perimeter containment installed around the site's lower perimeter to contain any eroded material. Native vegetation such as willows and sedges would be transplanted if they need to be removed as part of the project. All disturbed areas will be revegetated with approved native vegetation.

HYDRO-3. Stabilize subject stream banks. Stream banks on the top plug where the stream will be diverted and any plug that will be exposed to flowing water will be stabilized and protected from erosion using a combination of structural and biotechnical methods. The specific methods used will vary depending on site conditions, but at a minimum will include one or more of the following: adjustment of stream bank slopes; installation of rock slope protection (rip-rap); installation of biodegradable erosion control blankets; installation of willow wattles (live fascines); and/or the use of pole cuttings, container stock, and seed collected from local sources to reestablish native stream zone vegetation.

HYDRO-4. Achieve zero discharge during in channel excavation work. The goal during in channel excavation is zero discharge. Most of the proposed excavation work will occur within the channel to be obliterated. In a few cases excavation will occur within those areas which will receive flow during the following runoff season. The following practices will be used to achieve zero discharge: (1) wherever possible, delay activities until flow has ceased or is at lowest flow; (2) if flow is present, convey flow around the construction site and discharge in a stable upland location; (3) install a coffer dam below the site to trap sediment and detain any turbid water; (4) dispose of any sediment from behind the dam in a stable upland location; and (5) remove turbid water by pumping and sprinkling it in an upland location and manner to allow infiltration into the soil.

HYDRO-5. Contain spills. Strict onsite handling rules will be implemented to minimize spills and keep potentially contaminated materials out of the drainage waterways.

HYDRO-6. Limit staging of materials and equipment. Staging of materials and equipment will be limited to existing disturbed areas outside of wetlands and flood plain areas, where soils are already compacted and vegetation has been cleared. No new disturbance will be created for staging and stockpile areas, and no trees or other vegetation will be removed. Following project completion, these areas will be tilled, seeded, and mulched.

## **Monitoring & Reporting**

Monitoring will be conducted to determine if the project is meeting its objectives. Numerous surveys and pre-project monitoring have been conducted within the meadow and stream channel, including survey cross-sections, groundwater, vegetation composition, species survey, presence of headcuts and carbon sequestration/greenhouse gas emissions. Additional monitoring would take place during and two years post-construction to document the effectiveness of the project.

During construction, Plumas Corporation staff would be on-site continuously, and responsible for ensuring that Best Management Practices are followed, mitigations measures are implemented, and water quality leaving the project area is sampled as specified by the California Regional Water Quality Control Board. Once the project is completed, a report on construction will be sent to the funding agency and to any permitting agencies that require it. The report will outline how environmental protection requirements were met.

**PROPOSED FINDING:**

Based on the Initial Study prepared for the project, the California Regional Water Quality Control Board, Central Valley Region, has determined that potential project impacts on the environment would be mitigated to a less than significant level through incorporation of mitigation measures and therefore, the preparation of an Environmental Impact Report is not required. A copy of the Initial Study is attached.

Any person may object to dispensing with such Environmental Impact Report or respond to the findings herein. If there is no response within 30 days, this Board will assume that there are no comments and the Mitigated Negative Declaration will be adopted. Information relating to the proposed project is on file in the office of the department identified below, at the address shown below. Any person wishing to examine or obtain a copy of the information or this document, or seeking information as to the time and manner to so object or respond, may do so by inquiring at the said office during regular business hours.

California Regional Water Quality Control Board  
Central Valley Region  
1685 E Street  
Fresno, CA 93706  
(559) 445-5116



\_\_\_\_\_  
LONNIE WASS  
Supervising Engineer

6/30/16  
\_\_\_\_\_  
Date

**SECTION 5: NOTICE OF COMPLETION**

**Notice of Completion & Environmental Document Transmittal**

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613  
 For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

**Project Title:** Bean Creek Meadow Restoration Project

Lead Agency: Central Valley Regional Water Quality Control Board Contact Person: Debra Mahnke  
 Mailing Address: 1685 E Street Phone: 559-445-6281  
 City: Fresno Zip: 93706 County: Fresno

**Project Location:** County: Mariposa City/Nearest Community: Greeley Hill  
 Cross Streets: 10505 Fiske Road Zip Code: \_\_\_\_\_  
 Longitude/Latitude (degrees, minutes and seconds): 37 ° 45 ' 12.0 " N / 120 ° 8 ' 33.1 " W Total Acres: 39  
 Assessor's Parcel No.: \_\_\_\_\_ Section: 19 Twp.: 2S Range: 17E Base: MD BLM  
 Within 2 Miles: State Hwy #: \_\_\_\_\_ Waterways: Bean Creek  
 Airports: \_\_\_\_\_ Railways: \_\_\_\_\_ Schools: \_\_\_\_\_

**Document Type:**

CEQA:  NOP  Draft EIR NEPA:  NOI Other:  Joint Document  
 Early Cons  Supplement/Subsequent EIR  EA  Final Document  
 Neg Dec (Prior SCH No.) \_\_\_\_\_  Draft EIS  Other: \_\_\_\_\_  
 Mit Neg Dec Other: \_\_\_\_\_

**Local Action Type:**

General Plan Update  Specific Plan  Rezone  Annexation  
 General Plan Amendment  Master Plan  Prezone  Redevelopment  
 General Plan Element  Planned Unit Development  Use Permit  Coastal Permit  
 Community Plan  Site Plan  Land Division (Subdivision, etc.)  Other: \_\_\_\_\_

**Development Type:**

Residential: Units \_\_\_\_\_ Acres \_\_\_\_\_  Transportation: Type \_\_\_\_\_  
 Office: Sq.ft. \_\_\_\_\_ Acres \_\_\_\_\_ Employees \_\_\_\_\_  Mining: Mineral \_\_\_\_\_  
 Commercial: Sq.ft. \_\_\_\_\_ Acres \_\_\_\_\_ Employees \_\_\_\_\_  Power: Type \_\_\_\_\_ MW \_\_\_\_\_  
 Industrial: Sq.ft. \_\_\_\_\_ Acres \_\_\_\_\_ Employees \_\_\_\_\_  Waste Treatment: Type \_\_\_\_\_ MGD \_\_\_\_\_  
 Educational: \_\_\_\_\_  Hazardous Waste: Type \_\_\_\_\_  
 Recreational: \_\_\_\_\_  Other: Meadow Restoration Project  
 Water Facilities: Type \_\_\_\_\_ MGD \_\_\_\_\_

**Project Issues Discussed in Document:**

Aesthetic/Visual  Fiscal  Recreation/Parks  Vegetation  
 Agricultural Land  Flood Plain/Flooding  Schools/Universities  Water Quality  
 Air Quality  Forest Land/Fire Hazard  Septic Systems  Water Supply/Groundwater  
 Archeological/Historical  Geologic/Seismic  Sewer Capacity  Wetland/Riparian  
 Biological Resources  Minerals  Soil Erosion/Compaction/Grading  Growth Inducement  
 Coastal Zone  Noise  Solid Waste  Land Use  
 Drainage/Absorption  Population/Housing Balance  Toxic/Hazardous  Cumulative Effects  
 Economic/Jobs  Public Services/Facilities  Traffic/Circulation  Other: \_\_\_\_\_

**Present Land Use/Zoning/General Plan Designation:**

Agriculture Exclusive Zone

**Project Description:** (please use a separate page if necessary)

The goal of the project is to restore the hydrological and ecosystem function of Bean Meadow. The project entails restoring meadow floodplain function by redirecting flow out of an incised channel to an existing shallow swale flow path on the meadow surface. Flow will be redirected by filling the channel with native plug and rock material.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

## Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".  
If you have already sent your document to the agency please denote that with an "S".

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Air Resources Board                         | <input checked="" type="checkbox"/> Office of Historic Preservation          |
| <input type="checkbox"/> Boating & Waterways, Department of                     | <input type="checkbox"/> Office of Public School Construction                |
| <input type="checkbox"/> California Emergency Management Agency                 | <input checked="" type="checkbox"/> Parks & Recreation, Department of        |
| <input type="checkbox"/> California Highway Patrol                              | <input type="checkbox"/> Pesticide Regulation, Department of                 |
| <input type="checkbox"/> Caltrans District # _____                              | <input type="checkbox"/> Public Utilities Commission                         |
| <input type="checkbox"/> Caltrans Division of Aeronautics                       | <input type="checkbox"/> Regional WQCB # _____                               |
| <input type="checkbox"/> Caltrans Planning                                      | <input checked="" type="checkbox"/> Resources Agency                         |
| <input type="checkbox"/> Central Valley Flood Protection Board                  | <input type="checkbox"/> Resources Recycling and Recovery, Department of     |
| <input type="checkbox"/> Coachella Valley Mtns. Conservancy                     | <input type="checkbox"/> S.F. Bay Conservation & Development Comm.           |
| <input type="checkbox"/> Coastal Commission                                     | <input type="checkbox"/> San Gabriel & Lower L.A. Rivers & Mtns. Conservancy |
| <input type="checkbox"/> Colorado River Board                                   | <input type="checkbox"/> San Joaquin River Conservancy                       |
| <input checked="" type="checkbox"/> Conservation, Department of                 | <input type="checkbox"/> Santa Monica Mtns. Conservancy                      |
| <input type="checkbox"/> Corrections, Department of                             | <input type="checkbox"/> State Lands Commission                              |
| <input type="checkbox"/> Delta Protection Commission                            | <input type="checkbox"/> SWRCB: Clean Water Grants                           |
| <input type="checkbox"/> Education, Department of                               | <input checked="" type="checkbox"/> SWRCB: Water Quality                     |
| <input type="checkbox"/> Energy Commission                                      | <input type="checkbox"/> SWRCB: Water Rights                                 |
| <input checked="" type="checkbox"/> Fish & Game Region #4 _____                 | <input type="checkbox"/> Tahoe Regional Planning Agency                      |
| <input checked="" type="checkbox"/> Food & Agriculture, Department of           | <input type="checkbox"/> Toxic Substances Control, Department of             |
| <input checked="" type="checkbox"/> Forestry and Fire Protection, Department of | <input checked="" type="checkbox"/> Water Resources, Department of           |
| <input type="checkbox"/> General Services, Department of                        | Other: _____   |
| <input type="checkbox"/> Health Services, Department of                         | Other: _____   |
| <input type="checkbox"/> Housing & Community Development                        |  |
| <input checked="" type="checkbox"/> Native American Heritage Commission         |  |

### Local Public Review Period (to be filled in by lead agency)

Starting Date 1 July 2016 Ending Date 1 August 2016

### Lead Agency (Complete if applicable):

Consulting Firm: <u>Sierra Foothill Conservancy</u>	Applicant: _____
Address: <u>PO Box 691</u>	Address: _____
City/State/Zip: <u>Mariposa, CA 95338</u>	City/State/Zip: _____
Contact: <u>Lauren Hubert</u>	Phone: _____
Phone: <u>209-742-5556</u>	

Signature of Lead Agency Representative: *Jennie M. Wiers* Date: 6/30/16

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

## **SECTION 6: ATTACHMENTS**

1. 27 May 2014, Bean Meadow, Meadow and Wetland Restoration Design, Plumas Corporation
2. 9 March 2015, Meadow Restoration Project Bean Creek Preserve, Biological Evaluation, Live Oak Associates, Inc.

**Bean Meadow  
Meadow and Wetland Restoration Design**

**May 27, 2014**

**Jim Wilcox, Plumas Corporation**

**Background:**

The Bean Meadow Project encompasses 39 acres of an approximately 80-acre parcel of land owned by the Sierra Foothill Conservancy (SFC) and an adjacent 80-acre parcel owned by Ken and Teri Pulvino. The project area is located just north of Greeley Hill in Mariposa County. SFC has entered into a contract to establish a mitigation wetland on a portion of the property. An initial wetland project was designed by Clearwater Hydrology whose work has provided significant information for this follow-on effort. The original concept developed by SFC envisioned a phased restoration approach to full restoration of Bean Meadow and Bean Creek utilizing mitigation contracts. Subsequent planning has led to a re-evaluation of the mitigation-funded strategy for achieving restoration of the full meadow. SFC contracted with Plumas Corporation, a meadow restoration group in Plumas County, to conduct data collection and design services for a more holistic restoration project which includes a mitigation wetland component. These activities have occurred between April 7 and May 6, 2014 by Jim Wilcox, from Plumas Corporation.

The Conceptual Plan for the Restoration of the Bean Meadow Complex prepared Clearwater Hydrology, 2012 is incorporated in its entirety as part of this report to reduce redundancy of effort. Much of the results presented below are supplemental to the original Clearwater Hydrology work.

**Design Approach:**

The design approach utilized for Bean Meadow applies the principles of fluvial geomorphology, the science of landscapes formed by flowing water, to understand the processes that have governed the development of the meadow through the Holocene period (last 10,000 years). This method also helps determine the possible mechanisms that have led to channel degradation and loss of floodplain connection/ecosystem function. The approach combines significant quantitative data with qualitative observation and historical overview of land uses, both onsite and watershed-wide. As with most Sierran meadows, Bean Meadow appears to be a Holocene (last 10,000 years) feature. Several of the raw gully banks show streambed gravel features at differing levels within the overall fine-grained meadow sediments. This is commonly observed, as it illustrates how the channel migrated across the meadow as it was being built up over time.

**Analysis Narratives:**

**Quantitative Analysis:**

Initial reconnaissance indicated that the 39 acre project area could be delineated into two (2) distinct morphological reaches. These reaches are separated by an alluvial fan associated with the west tributary and a colluvial fan extending into the meadow from the east that constrict the meadow floodplain. The meadow again becomes constricted, topographically, at the downstream end as flow enters the reservoir. The upstream (north) portion of the property is more complex with several apparent remnant channel swales across the meadow separated by subtle high features. The interaction between the alluvial fans confined the upstream channels into a single thread with a relatively narrow effective floodplain width. The portion of the meadow





### Qualitative:

#### Meadow Restoration:

The existing incised (downcut) channel has evidence of several incision cycles. Histories obtained from the Coulterville History Center and interviews with individuals with longstanding knowledge of the property provide good supplemental local knowledge to support the physical evidence on the landscape. Si and Watson Greeley established a mill in the vicinity of the project at the outset of the Gold Rush mining period. Much of the Bean Creek watershed was logged in the 1850's and 60's to supply the mill, which in turn supplied lumber to the many local mines. While this would have had some effects on the age and distribution of timber in the watershed, it is unlikely that there was a significant impact to Bean Creek. The project area was subsequently homesteaded by McCarthy in 1878, who established a dairy to supply products to the mining communities. Reportedly, the McCarthy's cut 'timothy' hay in the project area in the water and then raked the cut hay out to cure (McCarthy oral history, 1968). This is a good indication that the project area was once quite wet during the summer. It is possible that they confused the prevalent Santa Barbara sedge as the timothy. McCarthy also reportedly began an ongoing effort to clear the upland portions of the project area of oak and conifer forest to increase forage areas. This clearing was continued by the subsequent landowner McMahan in the 1950's (Shimmer, pers. comm., 2012). Hydromodification (straightening) of the east and west tributary channels is clearly evident with berms of spoil along the gully channel banks today. It is less clear whether intentional channel modification was implemented on the main Bean Creek channel. McMahan constructed the small dam and reservoir immediately downstream of the project area in the late 1950's, with minimal influence on the project area.

The Bean Meadow area also shows strong indications of having significant extended groundwater inputs from the adjacent uplands. This has supported wetland seeps along the lower hillslopes within the project area and extended shallow overland flow in the spring/early summer consistent with historical accounts of a very wet meadow system.

#### Design Narrative:

Sierra Foothill Conservancy requested a design product that would restore the hydrologic function of the channel/floodplain system and its attendant ecosystem benefits. Additionally, the full design would eliminate the seven active headcuts on the mainstem, tributary and remnant channels. The most cost effective technique to accomplish this goal is a pond and plug treatment. Incumbent on the design process was to develop a design that could be phased, if necessary, to allow for construction of the mitigation wetland utilizing the excavated material to construct the terminal (downstream) plug of the larger meadow project as a stand-alone project. All features in this design are presented in a Plan View Map series (see Appendix A).

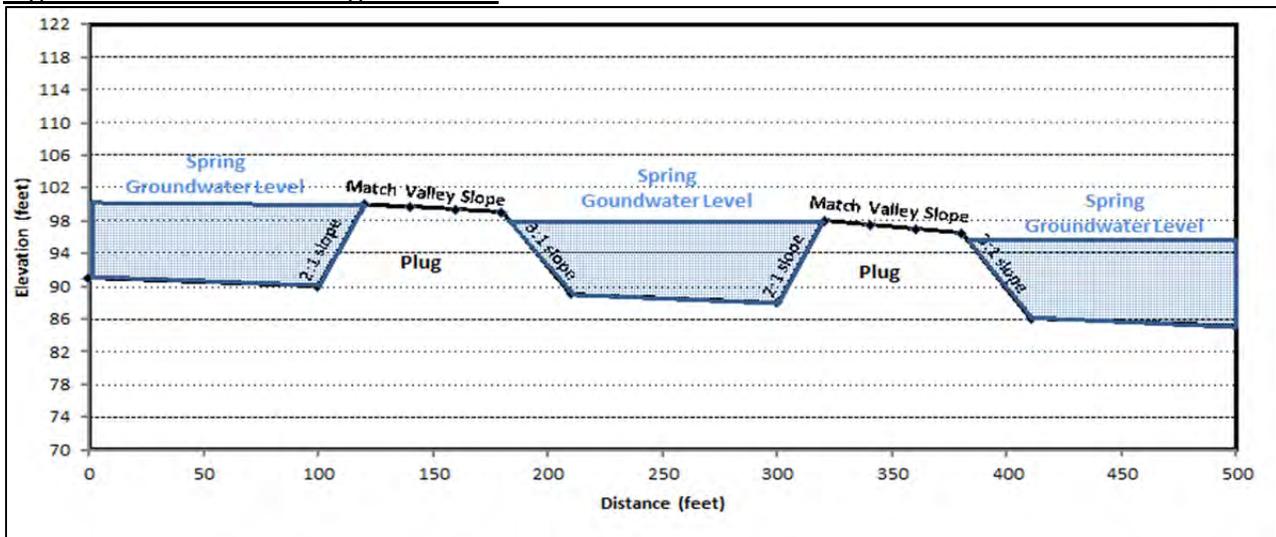
The borrow ponds principal function are to provide native fill material for plug construction. Since the ponds will fill with groundwater and maintain ponded water year-round, habitat features and diversity are incorporated into the construction. These include varying water depths, islands, peninsulas, basking logs, etc., which are determined as fill needs are met. Topsoil is removed and stockpiled adjacent to the plug fill zone to top dress the completed plug.

All plugs and borrow ponds are sited and configured to accommodate surface and subsurface through flow as well as adjacent hillslope-generated surface and groundwater inflows. The

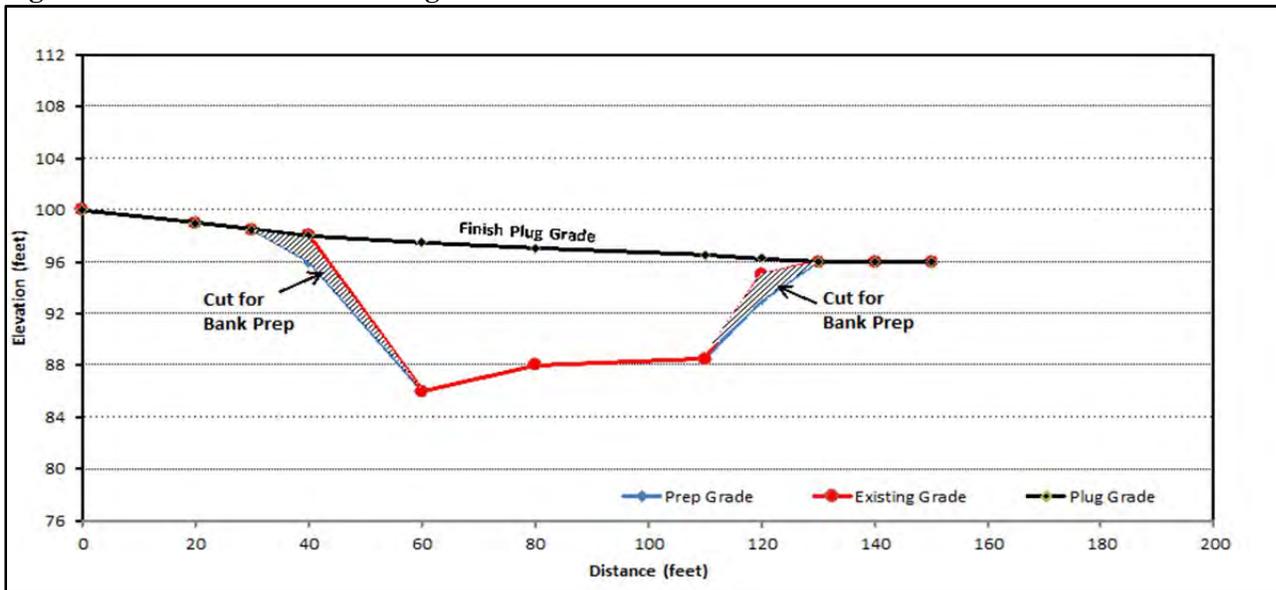
interval between plugs is set by elevation with a maximum 0.75 foot head differential from the downstream plug edge and the downstream pond water surface elevation. This reduces the risk of cutting through the plug during infrequent, short duration flood events. The downstream edges of the plugs are also heavily planted with sedge mats recovered from the gully bottom prior to plug construction. A table of construction elevations is included in Appendix C.

Plugs are constructed with wheel loader(s) to provide wheel compaction of the fill. The compaction levels are intended to match the porosity/transmissivity of the native meadow soils. This allows moisture to move freely within the plug soil profile and support erosion resistant meadow vegetation for long term durability as well as preventing preferential pathways for subsurface flows either in the plug or the native material. The schematics below illustrate the plug site prep and constructed slopes.

**Figure 1a. Profile View Plug Schematic**



**Figure 1b. Cross-section View Plug Schematic**

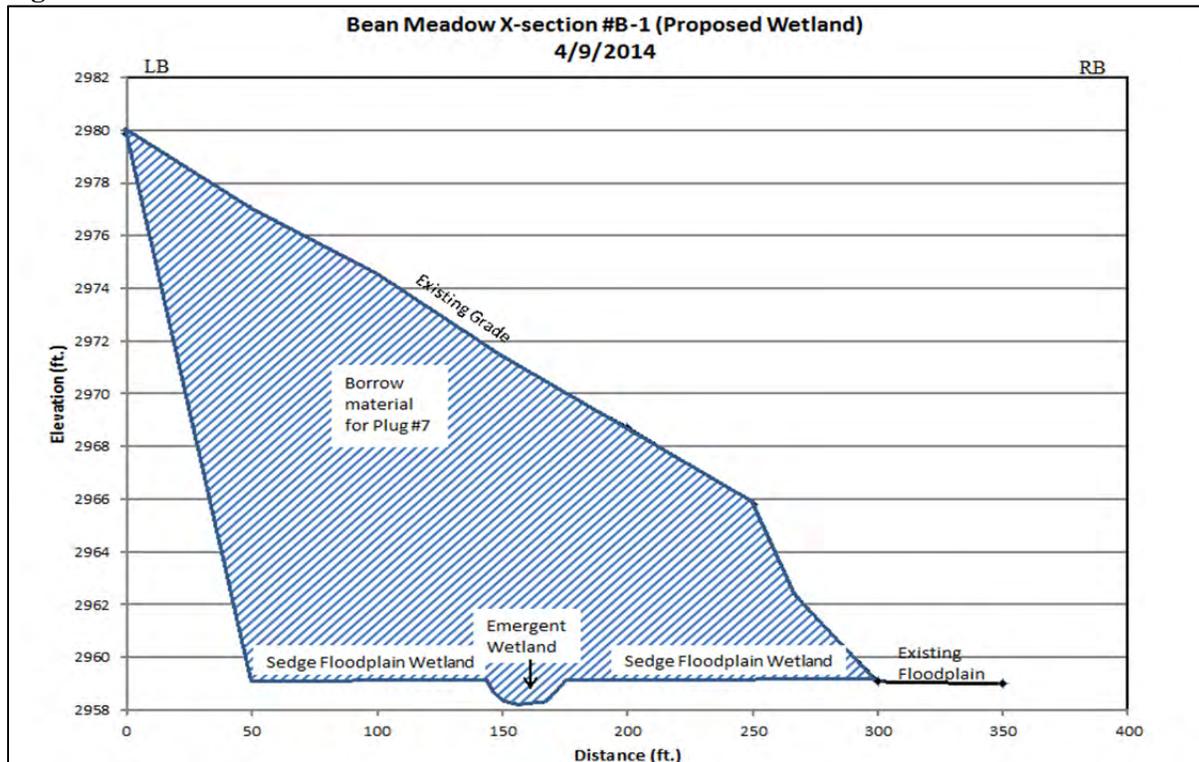


Upon completion plug surfaces are ripped to a depth of 12” to facilitate rainfall infiltration, the recovered topsoil is spread and seeded with native seed. All native vegetation recovered from the fill and borrow sites will transplanted to plug edges, surfaces and key locations on the remnant channel. Previous experience in transplanting tree willows has a low success rate in keeping the entire tree alive. The root mass will survive transplanting and will ‘sucker’ profusely, but it will be several decades before similar size plants will occupy the landscape again. Any trees not transplanted would be used structurally throughout the project or left as snag habitat. The dominant sedge species is Santa Barbara sedge with a very dense and deep root array making it an excellent erosion resistant vegetative armor. It was originally assumed that this sedge species grew as a “bunch” form. Further observation through the data collection period indicates that this “bunch” form is a result of a combination of livestock trailing and erosion. The terminal plug (#7) will have a rock and vegetation structure (valley grade structure) to armor the downstream end as both channel and floodplain flows transition to the existing elevation. A staging area has been identified and shown on the design maps to stockpile rock for the grade structure.

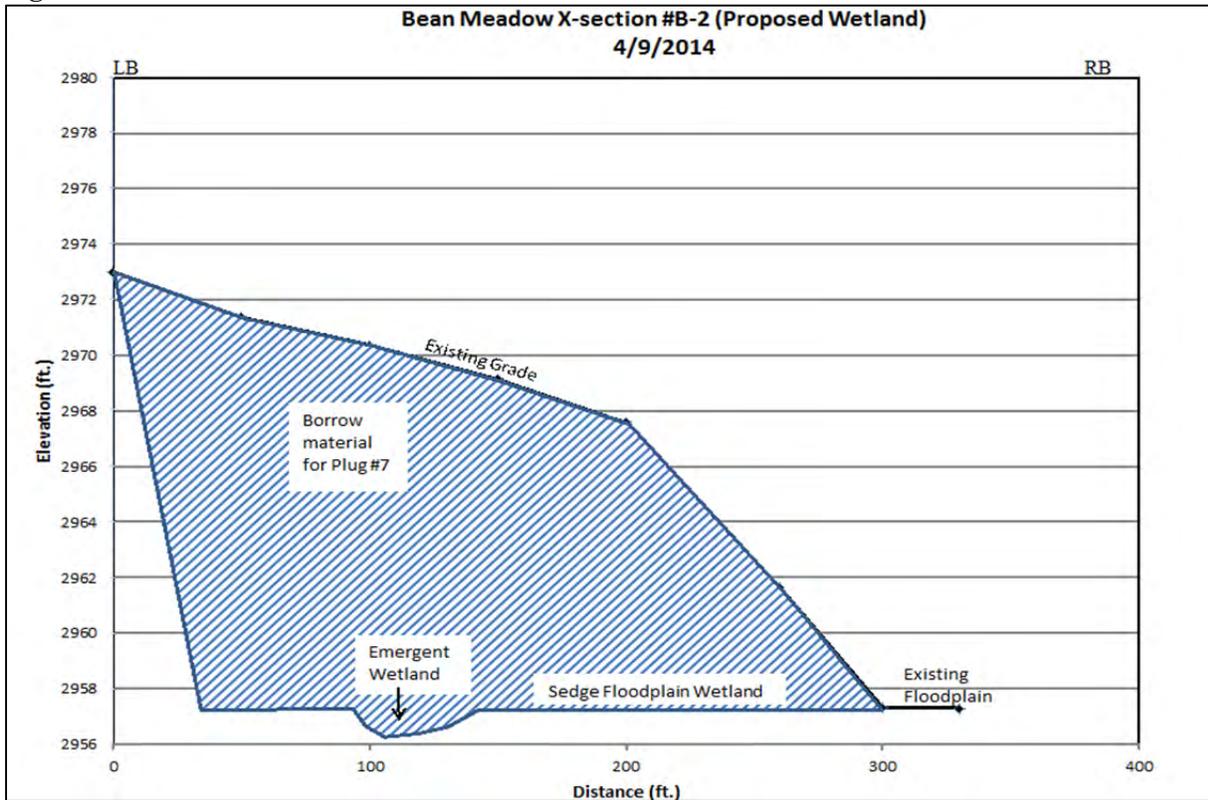
Wetland Mitigation:

The revised wetland design/location will excavate an overall footprint of 1.8 acres, to create 1.1 acres of wet meadow at the existing meadow floodplain elevation. The cut material, totaling 17,600 yds<sup>3</sup>, from this excavation will be used to construct the terminal plug (#7) of the larger meadow restoration project. Sedge mats and tree willows recovered from the fill area will be transplanted to the excavated wetland as excavated to accelerate vegetative recovery and provide structural diversity. The majority of the constructed wetland will be at meadow floodplain elevation. An emergent wetland feature will also be incorporated to resemble a cutoff ‘oxbow’ channel with near-perennial surface water. Please see Figures 2a and 2b below.

**Figure 2a. North cross-section**



**Figure 2b. South cross-section**



**Hydrology:**

**Water Supply**

Supplementing the extensive discussion in the Clearwater Hydrology Report, the annual average runoff from the 3,109 acre watershed is approximately 4,557 acre-feet. The 644,960 acre Merced River basin produces an average of 989,000 acre-feet of runoff annually, corrected for evapotranspiration, or 1.53 acre-feet/per acre. The 39 acre project would likely require approximately 93 acre feet of runoff to initially ‘refill’ the soils in the restored project. This refilling would generally occur in the early winter with negligible effects on downstream uses. Subsequent flows are throughflow until inflow to the project area ceases in late summer. At that point, some drainage, or recharge to the channel would occur from the upper 1-2 feet of meadow soils, until surface and subsurface inflows to the meadow resume in fall.

Based on long term monitoring of similar restoration projects, it is highly unlikely the restored meadow would ever ‘drain’ out to its pre-project dewatered condition. Subsequent years would only require sufficient inflow/precipitation to recharge the upper 1-2 feet of meadow soil drained during the previous dry season, approximately 15- 20 acre feet or 0.02% of the basin yield. This illustrates that the Bean Meadow project will have a negligible overall effect on water supply in the Bean creek watershed.

**Design Hydrology:**

Similar to the hydrology analysis performed by Clearwater Hydrology a full regression analysis was conducted for selected Return Interval (RI) discharges. In addition, basin area regressions were calculated for three nearby gages to provide comparison and to “bracket” the variability

inherent in regression analyses. The full regression analysis and the direct cross-section analysis coupled with Slope/Area calculations for velocity are in surprisingly good agreement on the 2-year RI flows, as shown in Table 2 below. The full computations of the comparative analysis are included in Appendix C.

**Table 2. Summary of Regression Analyses**

COMPARATIVE DISCHARGE CALCULATIONS (cfs)- BEAN MEADOW PROJECT								
Reach Name	Q2	Q5	Q10	Q25	Q50	Q100	Method	
Bean	114	295	435	716	945	1291	Full Regression	
	192	678	1293	2551	3999	5996	Area Reg.- Big Cr.	
	201	623	1118	2070	3103	4500	Area Reg.- Maxwell Cr.	
	122	351	583	951	1339	1845	Area Reg.- Merced R.	
Bankfull	114						Cross-section	

**\*\*Derived from Waananen & Crippen "Magnitude and Frequency of Floods in California", 1977**

**Construction Budget:**

The estimated budget for this project includes a short term stand-alone Phase I as well as the complete design. The Bean Meadow Project would require approximately 30 eight-hour working days. These budget amounts are for force account type directed work and incorporate expected Federal Davis-Bacon or State Prevailing Wage rates. All rates are inclusive of all expenses (mobilization, fuel, travel, lodging, etc.). It is expected that if the entire project were constructed with one mobilization, some economy of scale could reduce overall costs.

**Phase I: Mitigation Wetland:**

Excavator- 80 hrs @ \$200/hr.	\$ 16,000.00
Wheel Loader- 80 hrs @ \$200/hr.	\$ 16,000.00
Track Loader- 80 hrs @ \$150/hr. (no operator)	\$ 12,000.00
Water Truck- 80 hrs @ \$110/hr.	\$ 8,800.00
Rock- 500 yds <sup>3</sup> @ \$30.00/yd	\$ 15,000.00
Trucks- rock haul- 75 hrs. @ \$100/hr.	\$ 7,500.00
Construction supervision- 10 days @ \$1,100/day	\$ 11,000.00
<b>Phase I Total</b>	<b>\$ 86,300.00</b>

**Phase II: Meadow Restoration:**

Excavator- 160 hrs @ \$200/hr.	\$ 32,000.00
Excavator- 160 hrs @ \$100/hr. (no operator)	\$ 16,000.00
Wheel Loader- 160 hrs @ \$200/hr.	\$ 32,000.00
Track Loader- 160 hrs @ \$150/hr. (no operator)	\$ 24,000.00
Water Truck- 160 hrs @ \$110/hr.	\$ 17,600.00
Construction supervision- 20 days @ \$1,100/day	\$ 22,000.00
<b>Phase II Total</b>	<b>\$143,600.00</b>

**Project Total** **\$229,900.00**

## **APPENDIX A**

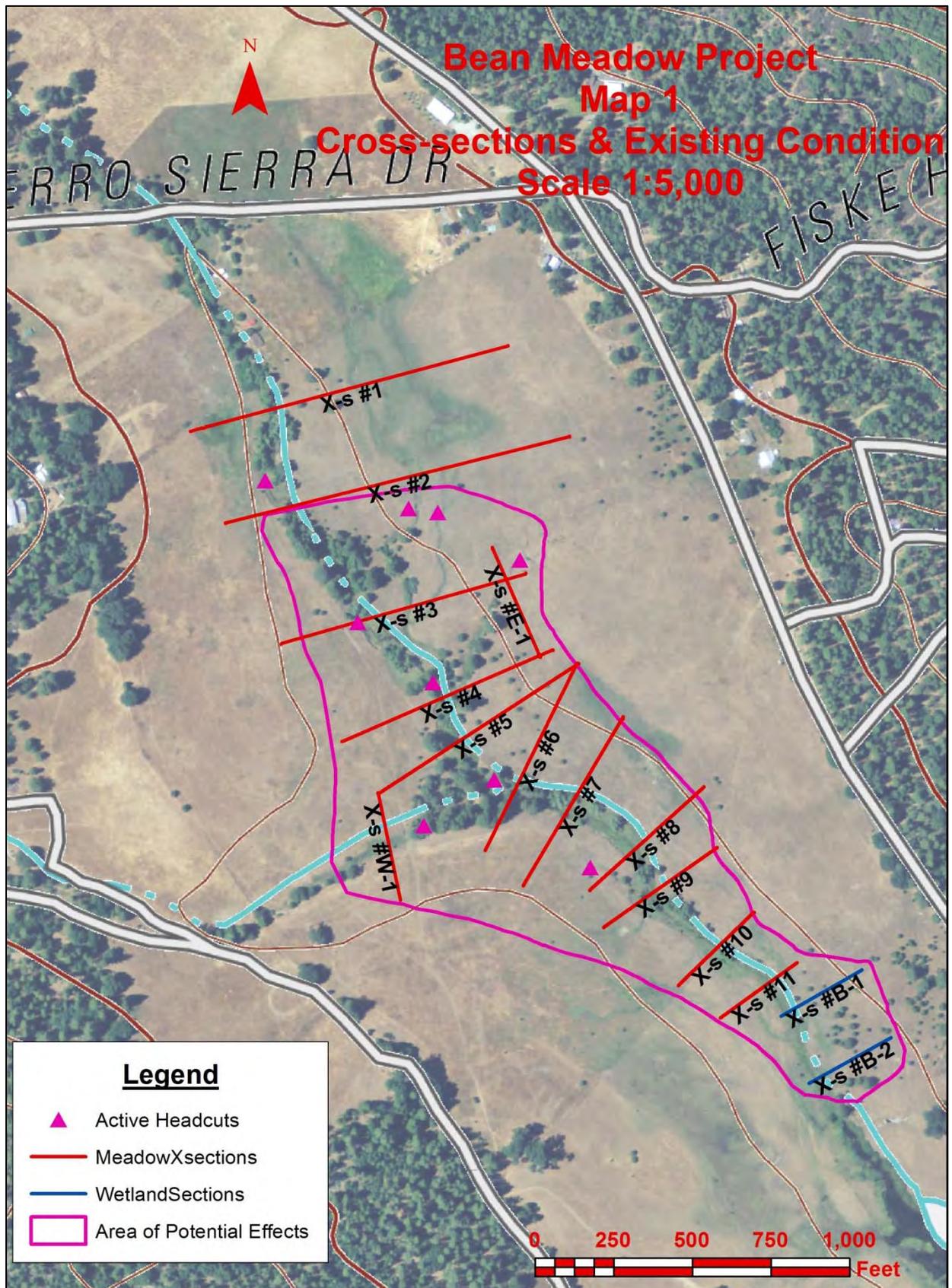
Map 1- Project area with cross-sections and headcuts

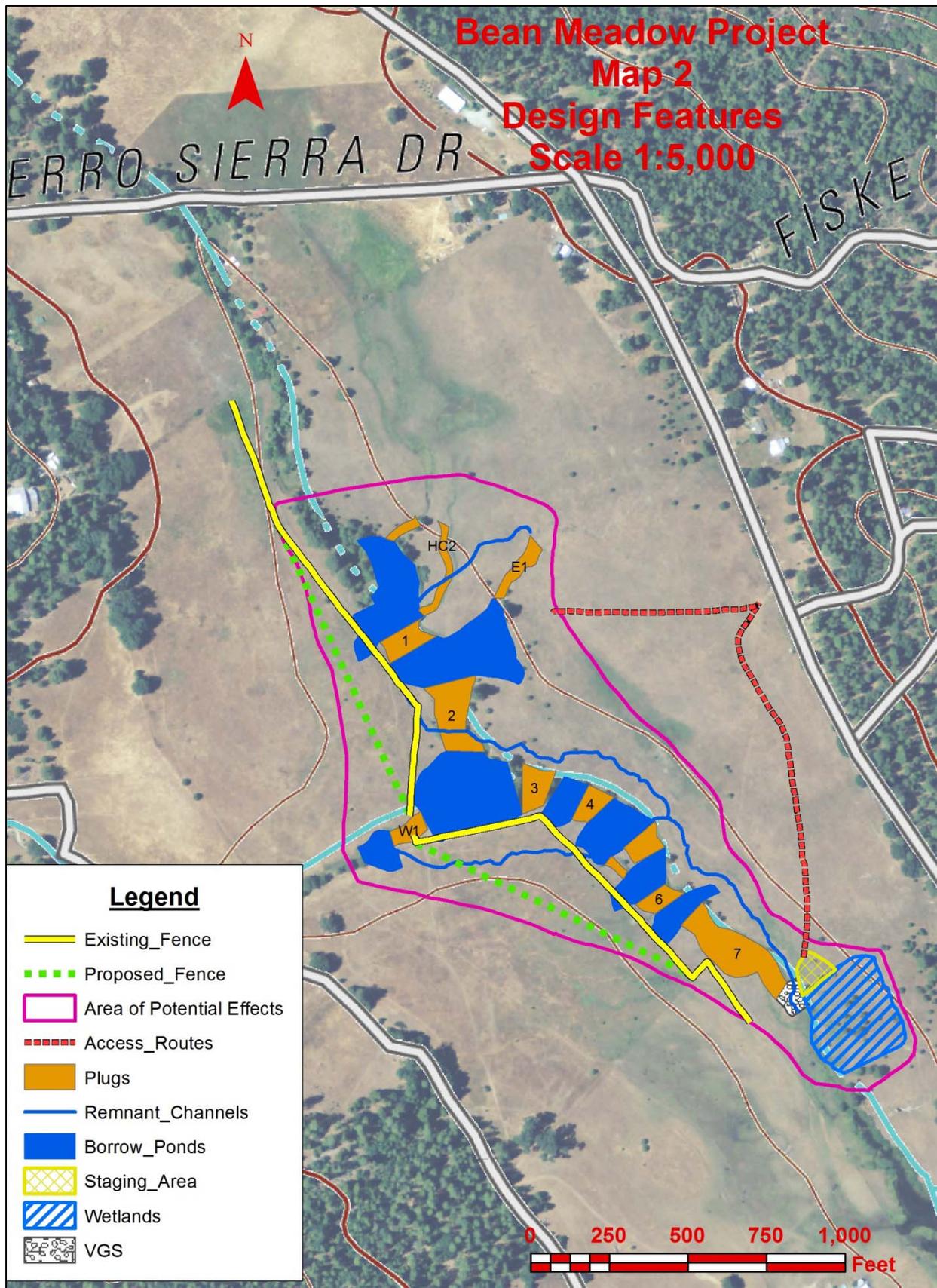
Map 2- Project area with above and all design features, including fence revisions

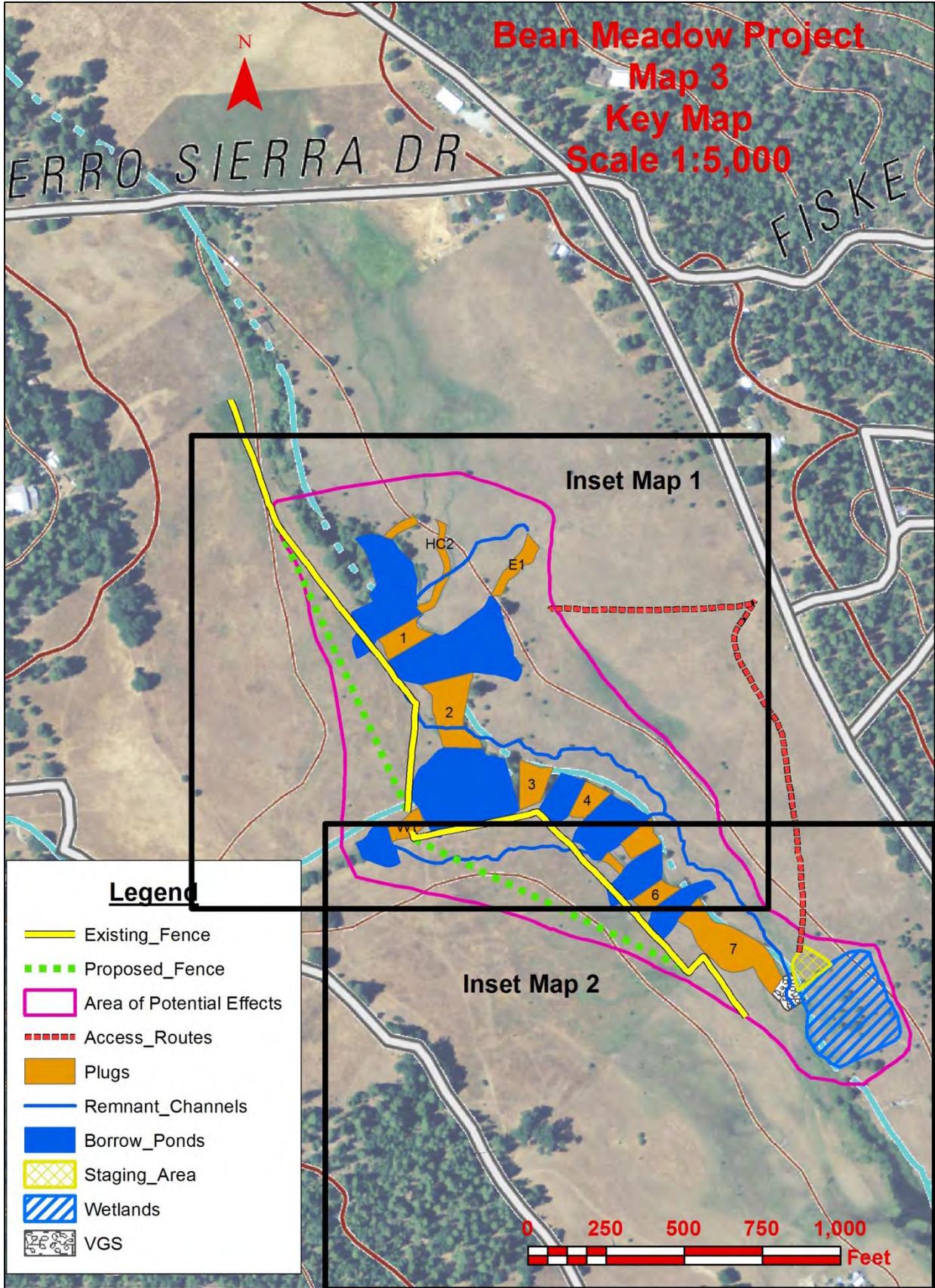
Map 3- Key Map for 1" = 200' Inset Map series

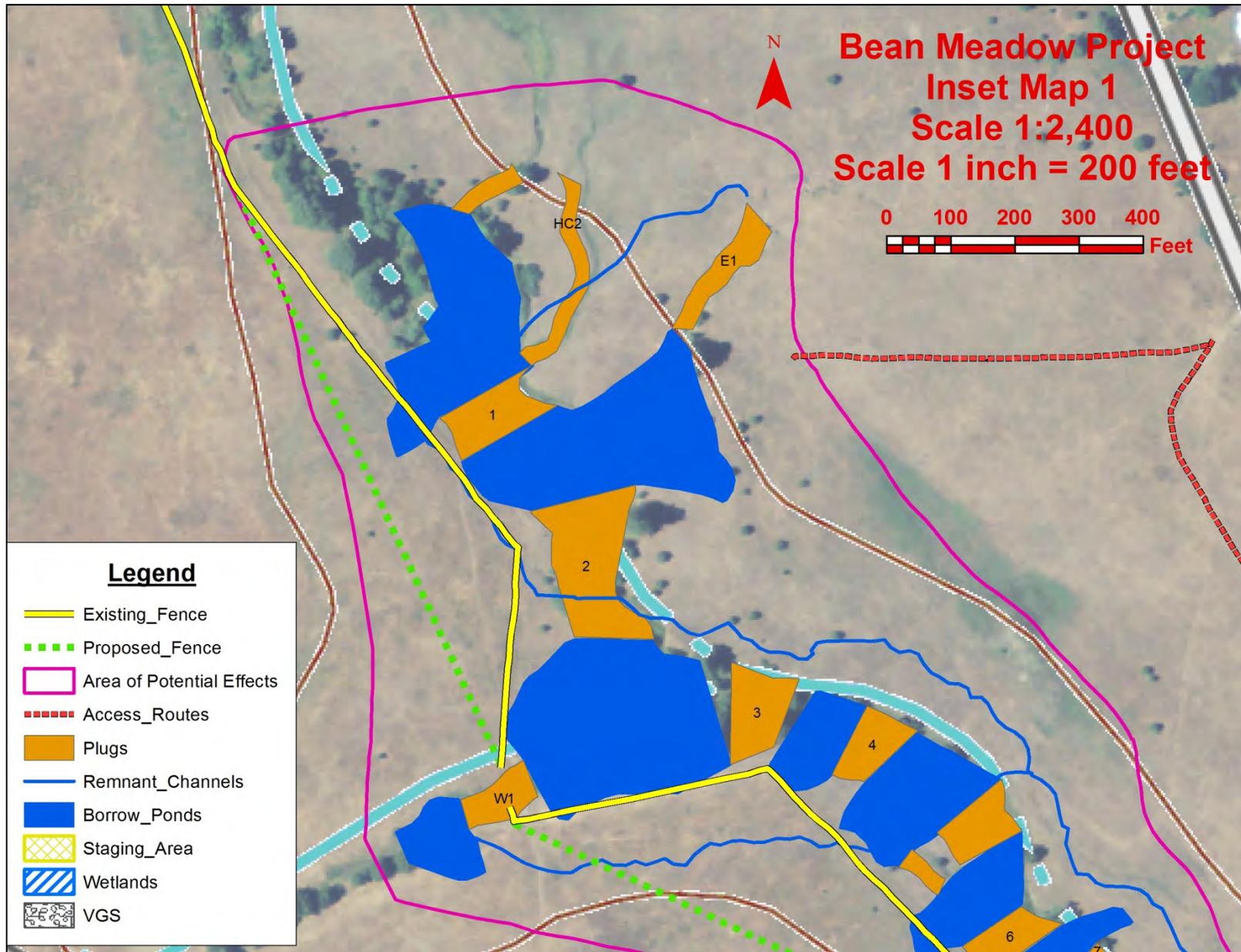
Inset Map 1

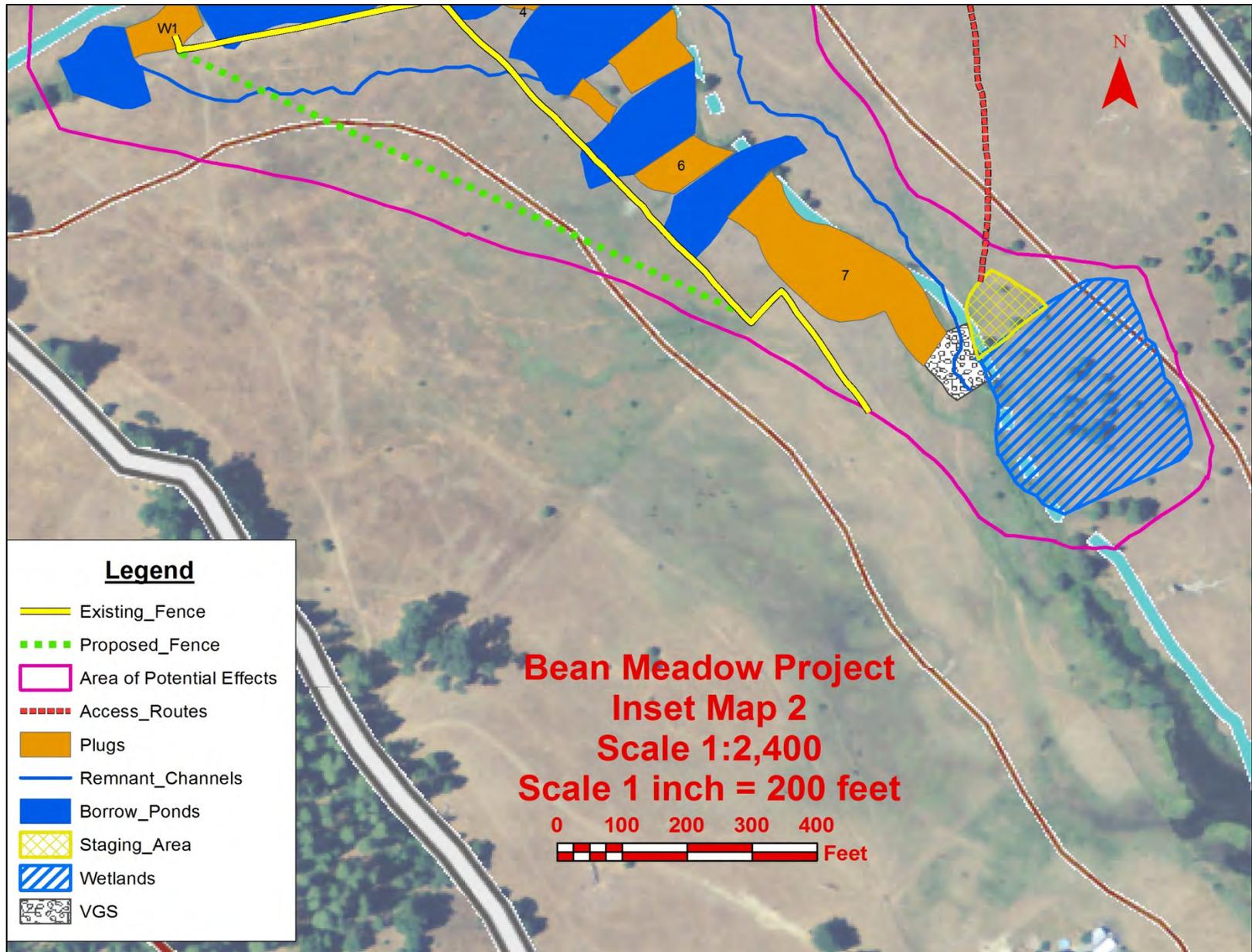
Inset Map 2









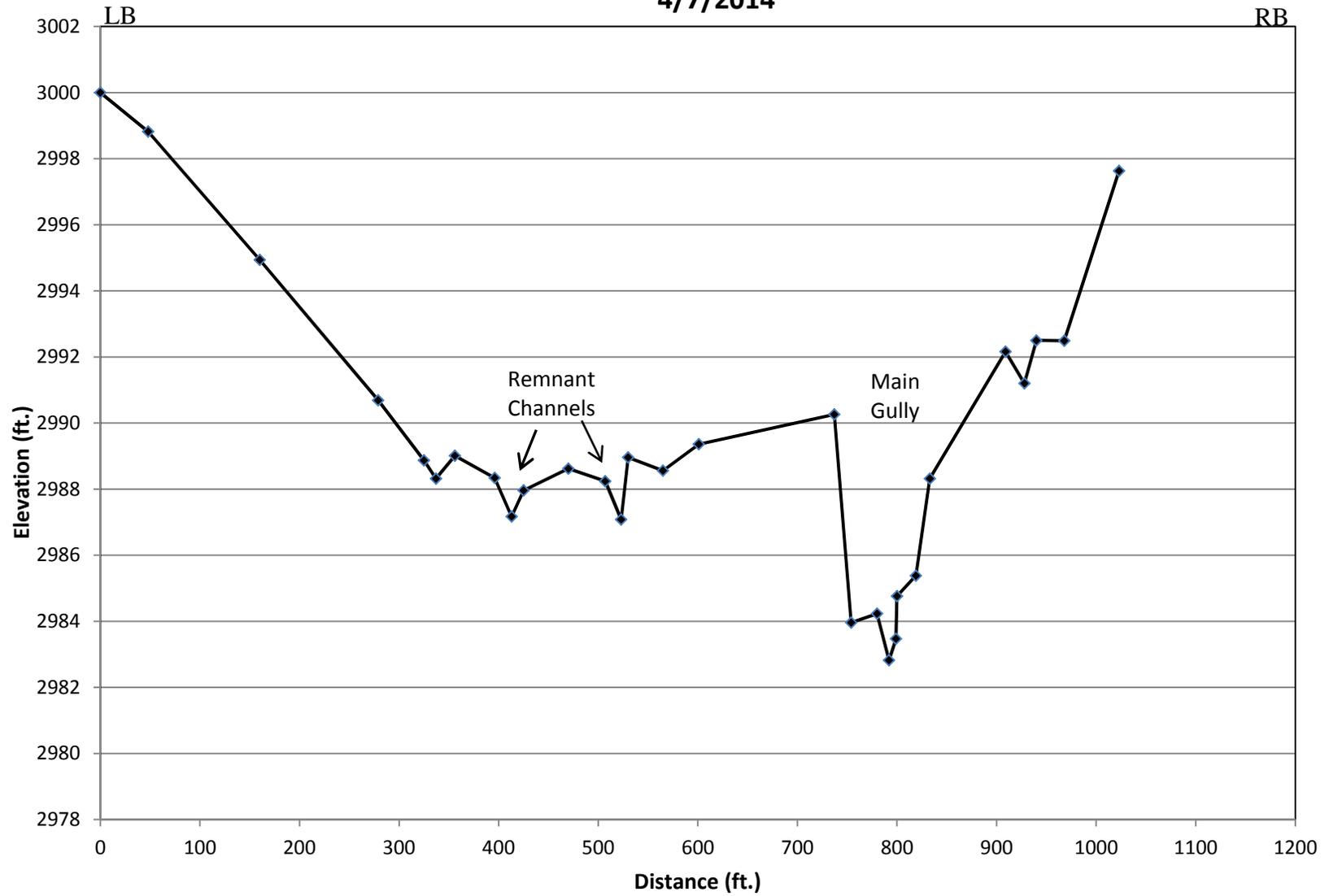


## **APPENDIX B**

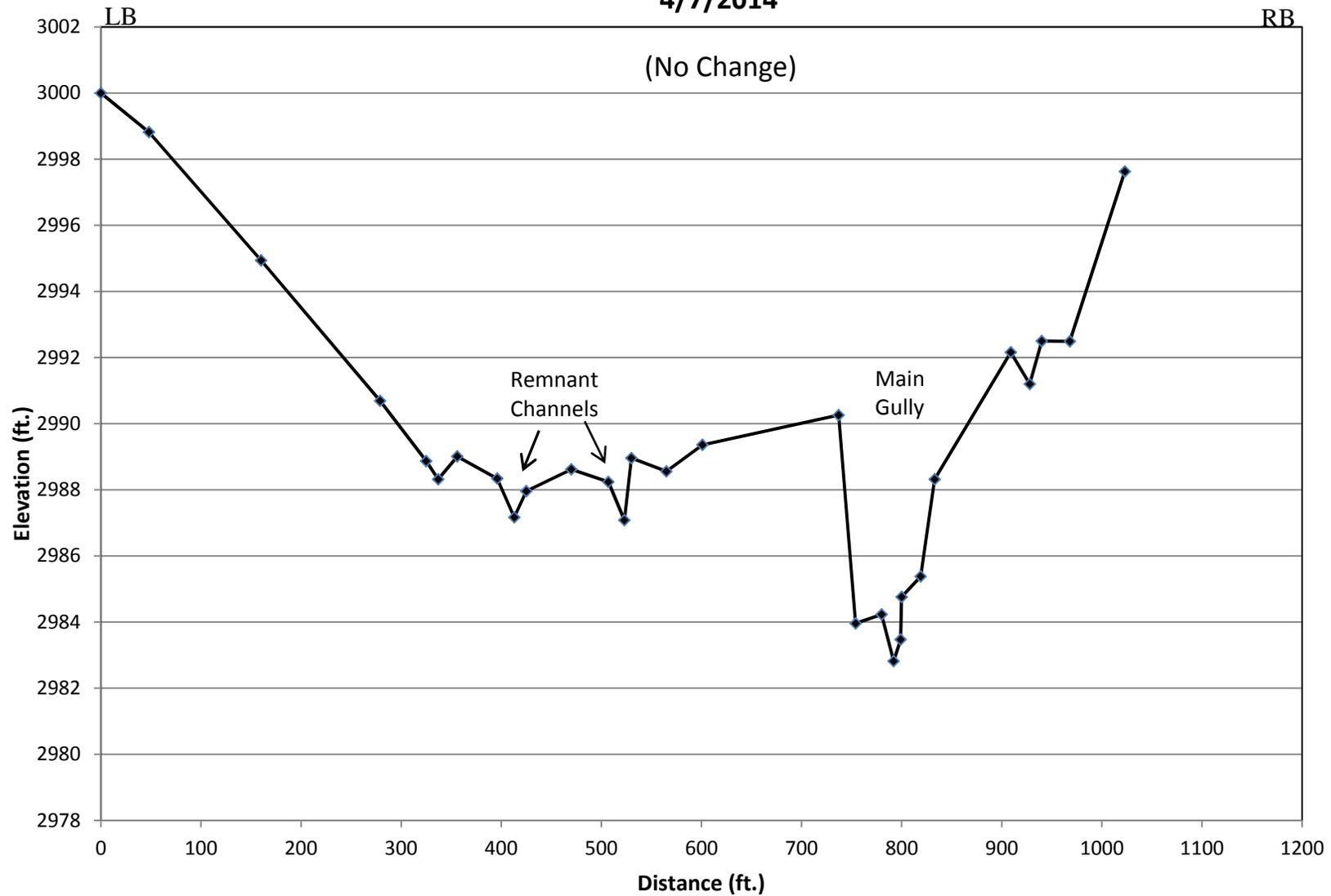
All Cross-sections- Paired existing and proposed  
Longitudinal Profile- Bean Creek  
Longitudinal Profile- West Tributary

### Bean Meadow X-section #1 (existing)

4/7/2014

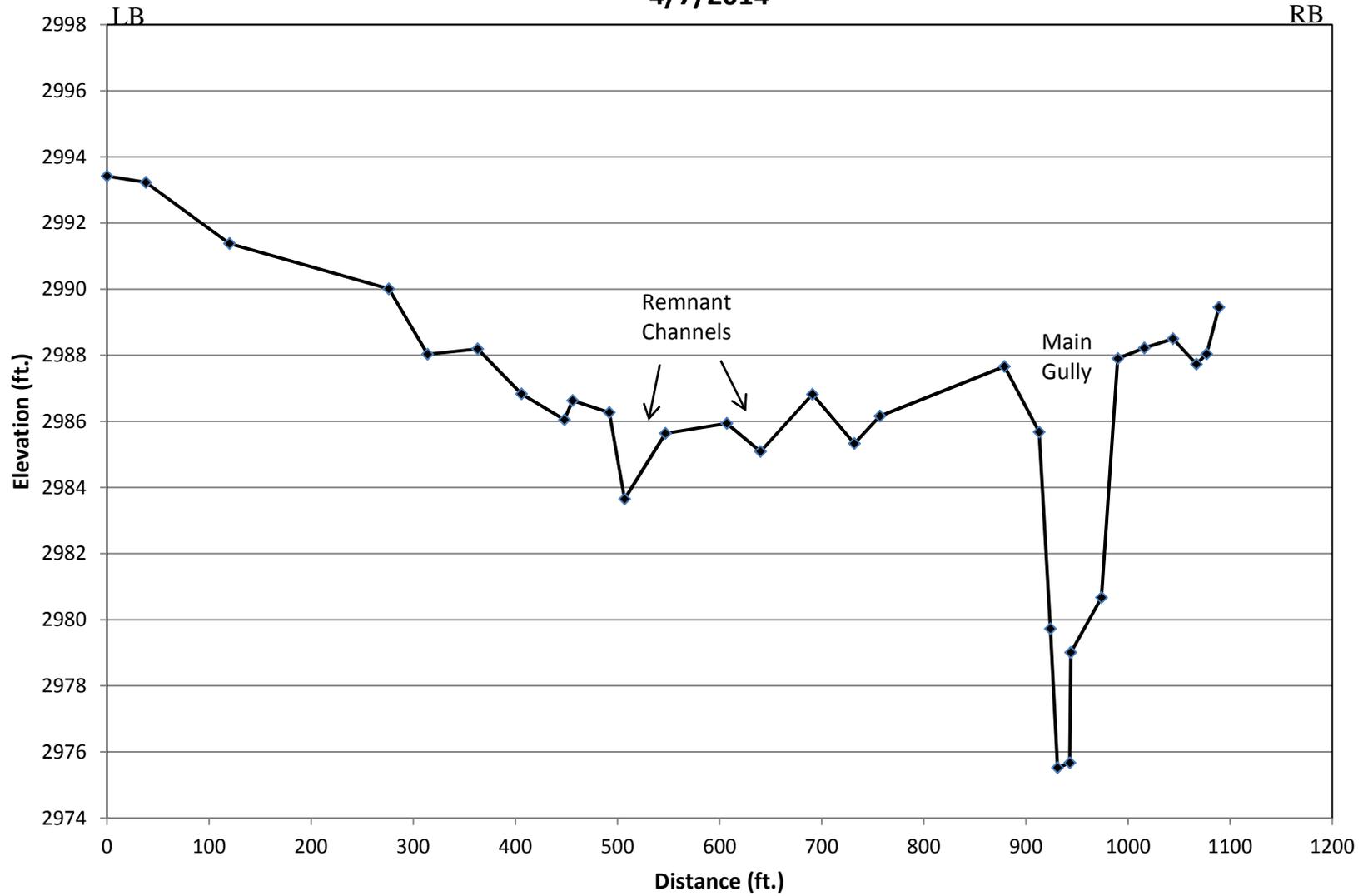


**Bean Meadow X-section #1 (proposed)**  
**4/7/2014**

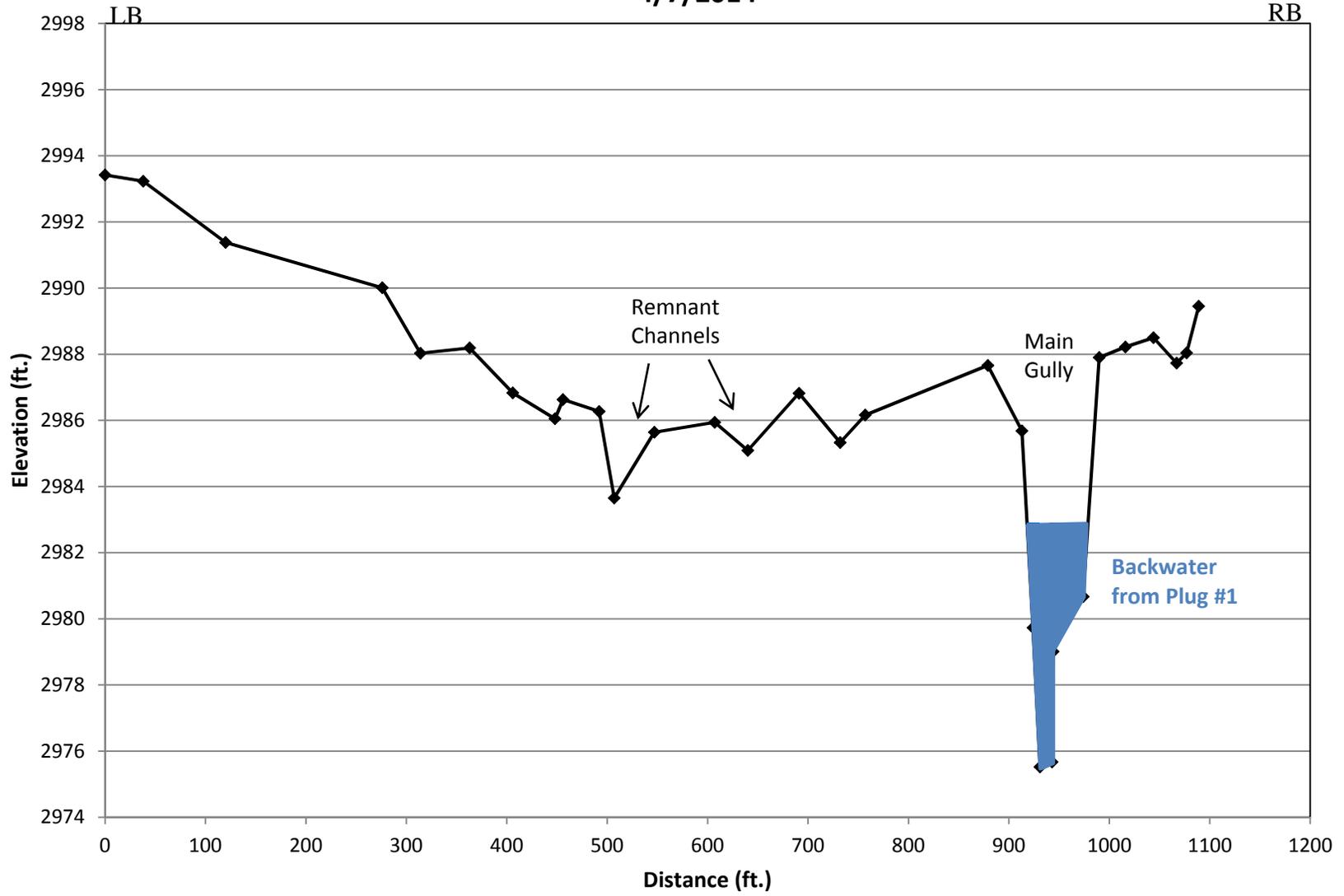


### Bean Meadow X-section #2 (existing)

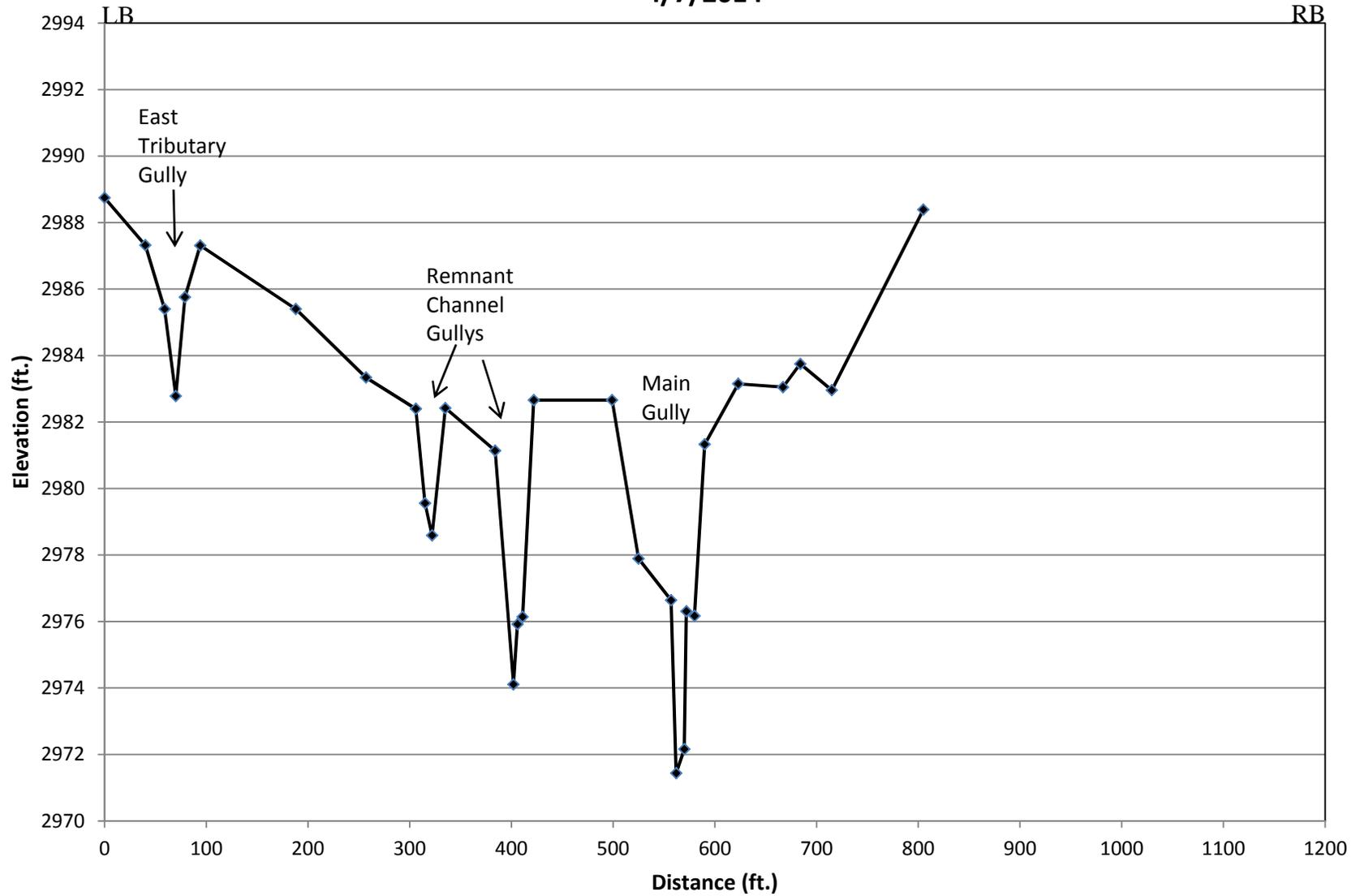
4/7/2014



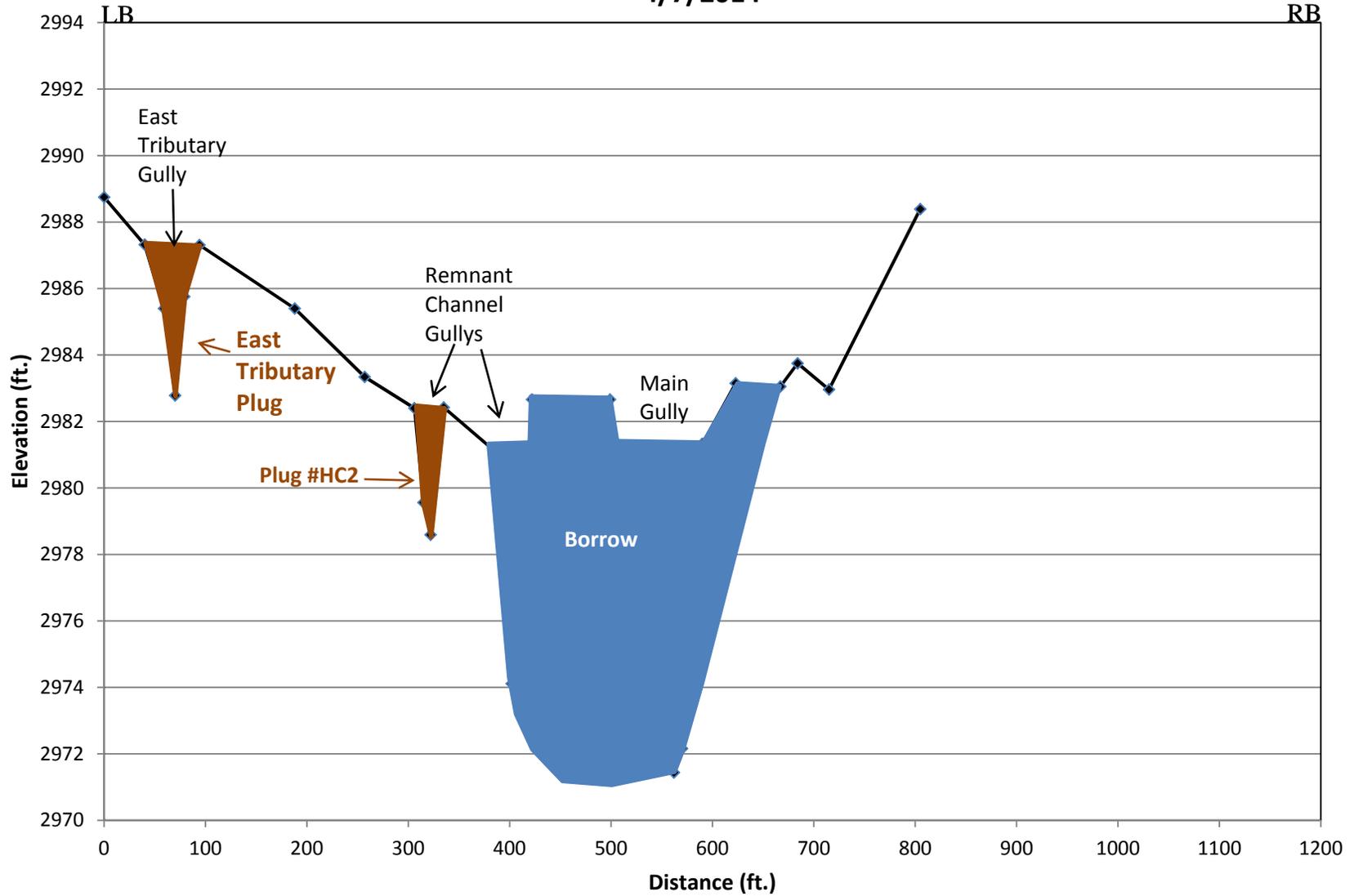
**Bean Meadow X-section #2 (proposed)**  
**4/7/2014**



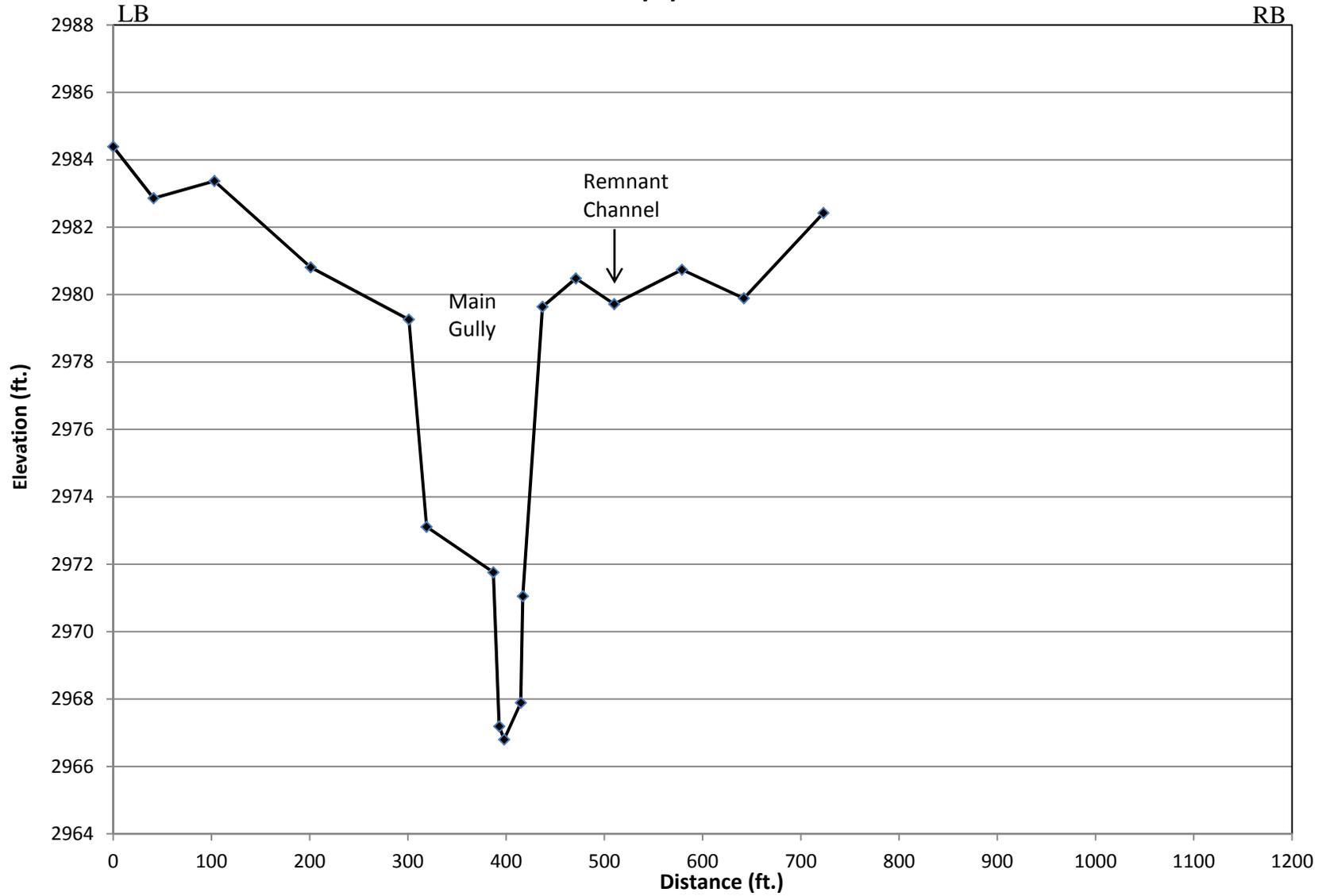
**Bean Meadow X-section #3 (existing)**  
**4/7/2014**



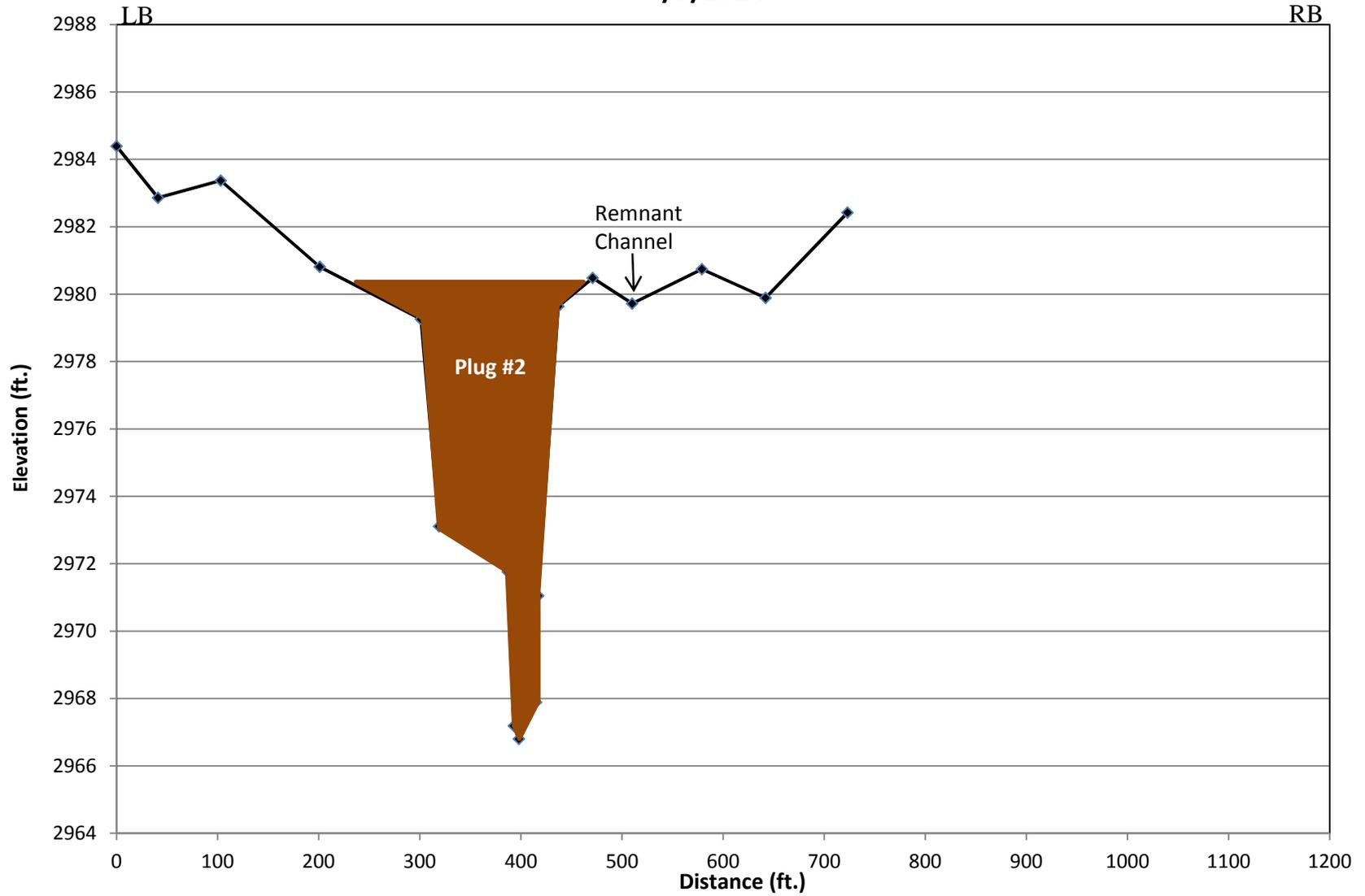
**Bean Meadow X-section #3 (proposed)**  
**4/7/2014**



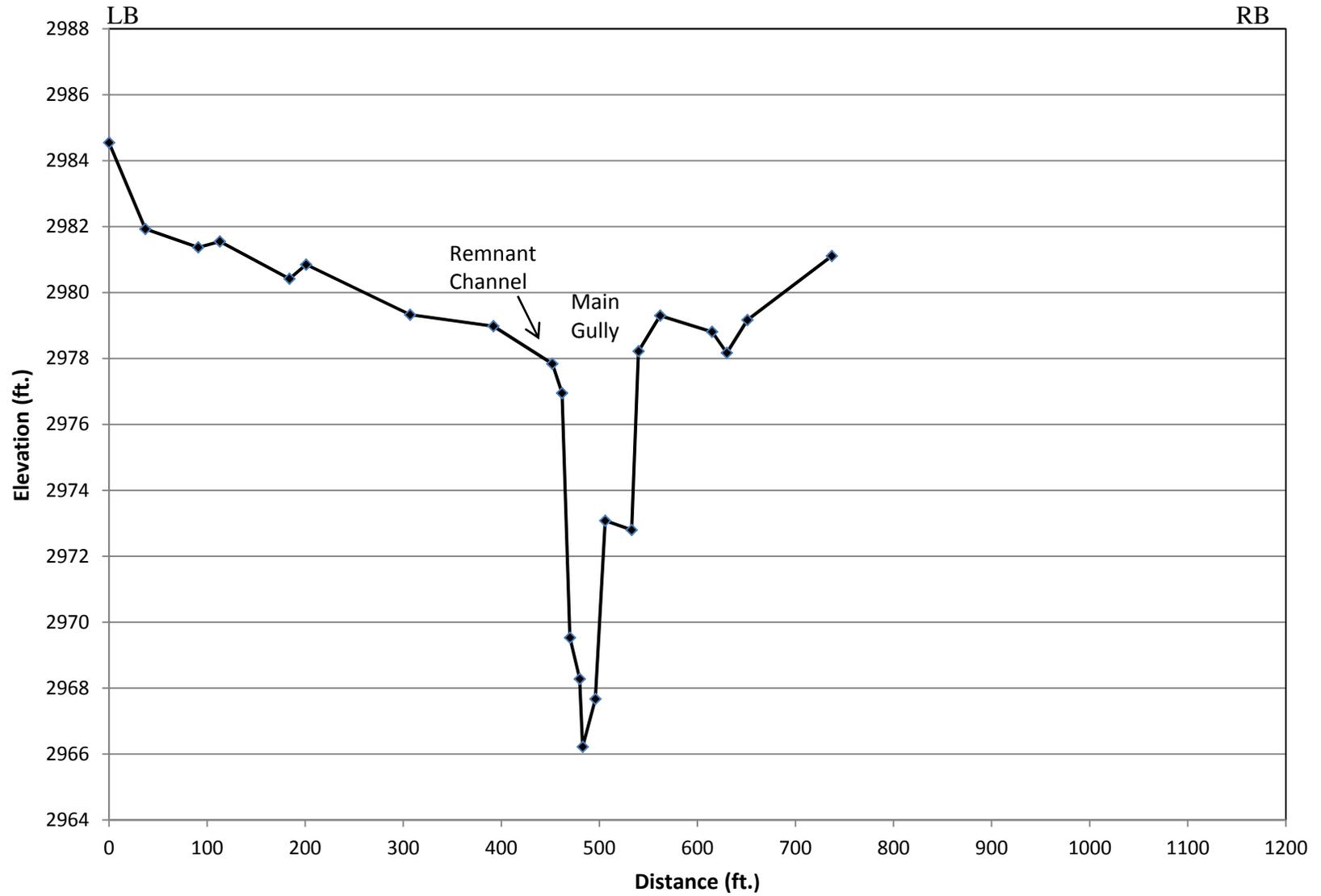
**Bean Meadow X-section #4 (existing)**  
**4/7/2014**



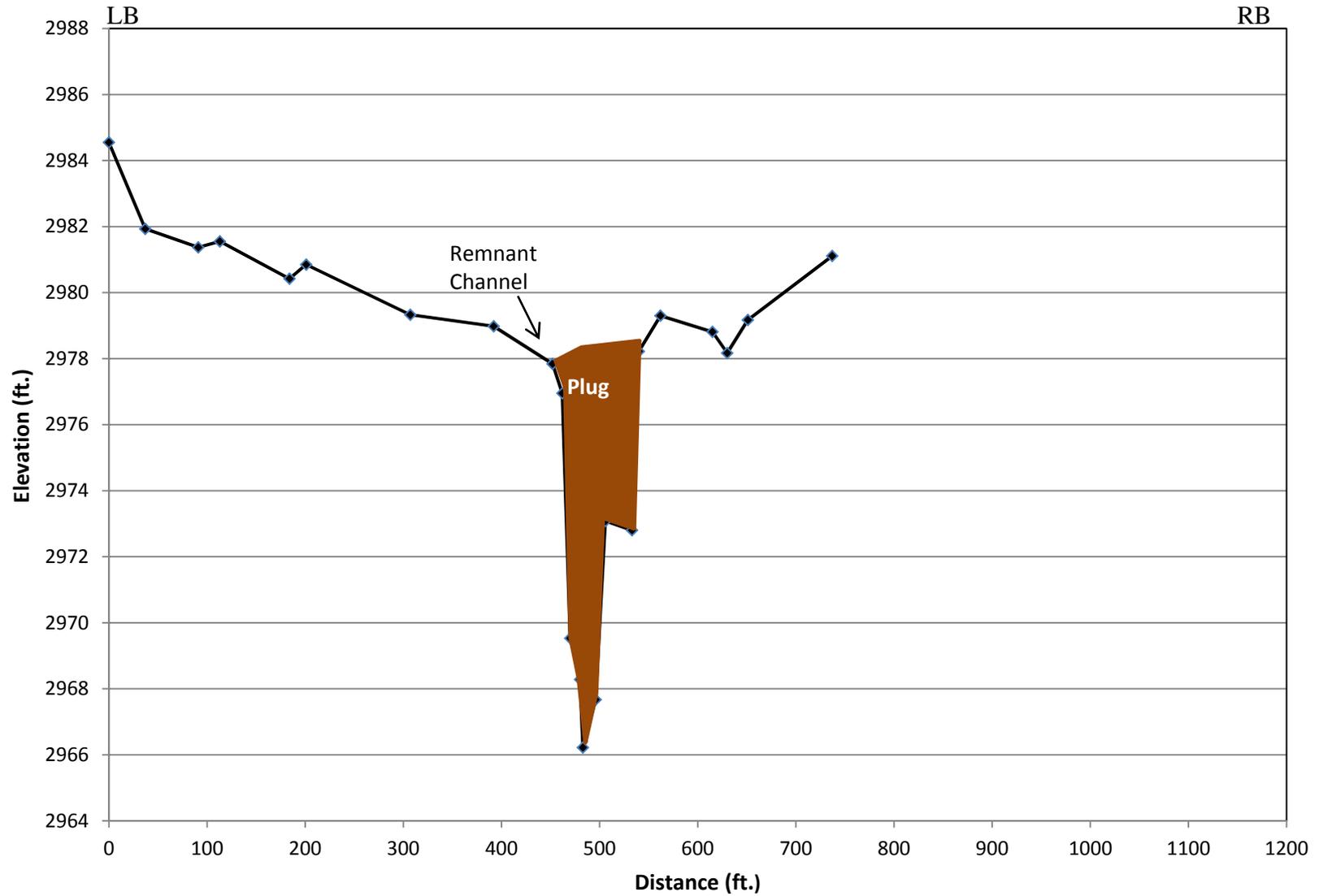
**Bean Meadow X-section #4 (proposed)**  
**4/7/2014**



**Bean Meadow X-section #5 (Existing)**  
**4/8/2014**

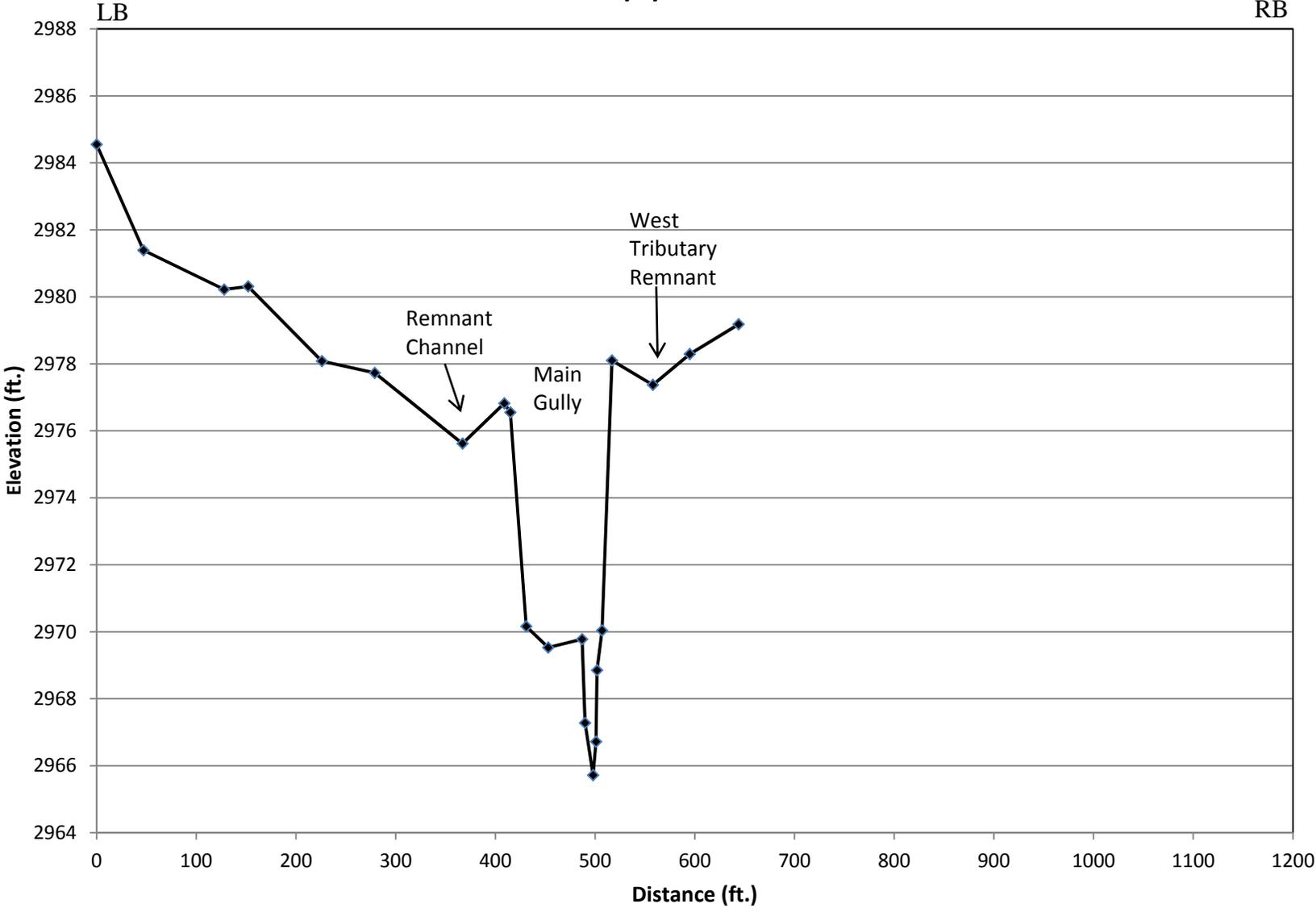


**Bean Meadow X-section #5 (Proposed)**  
**4/8/2014**

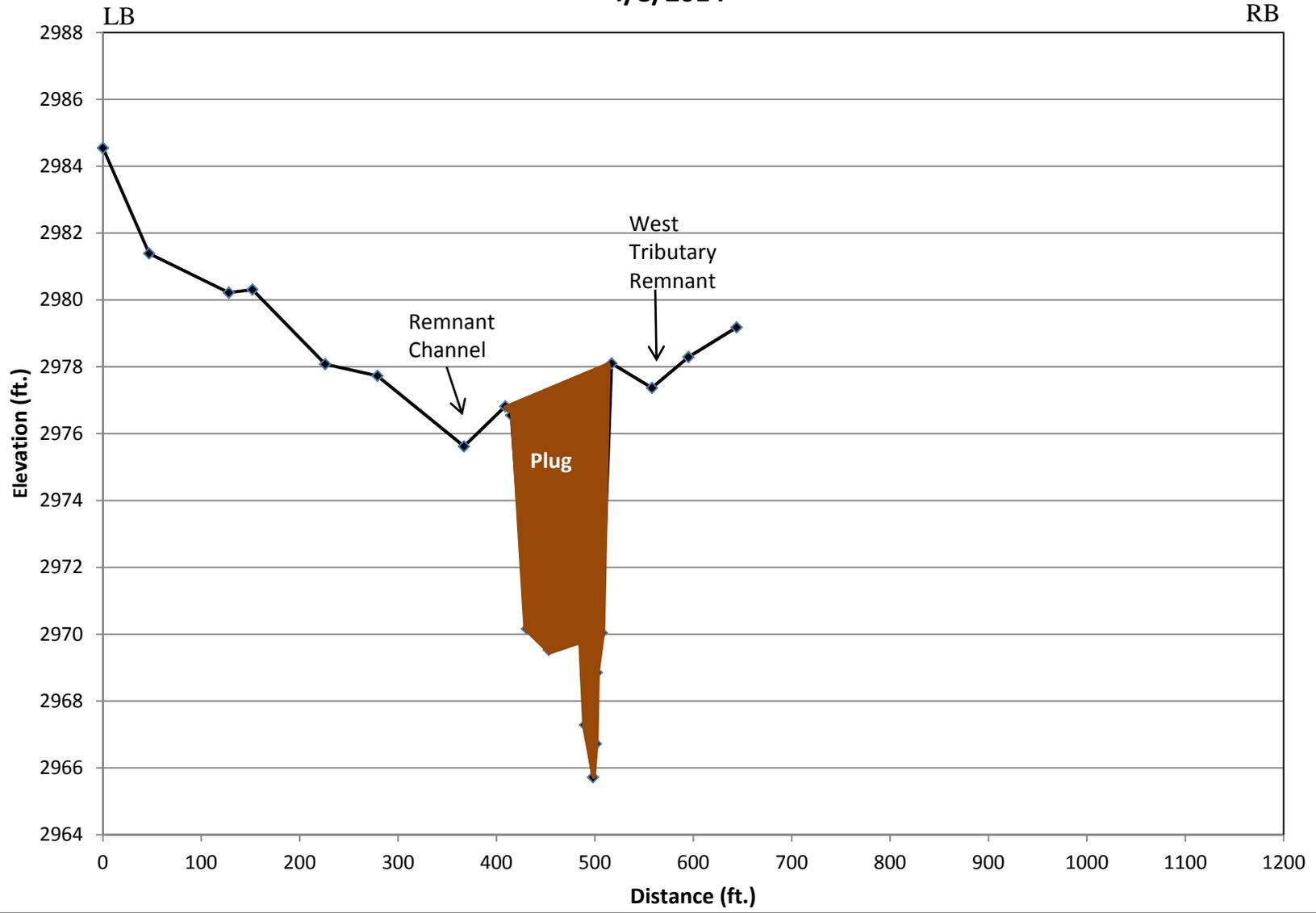


**Bean Meadow X-section #6 (Existing)**

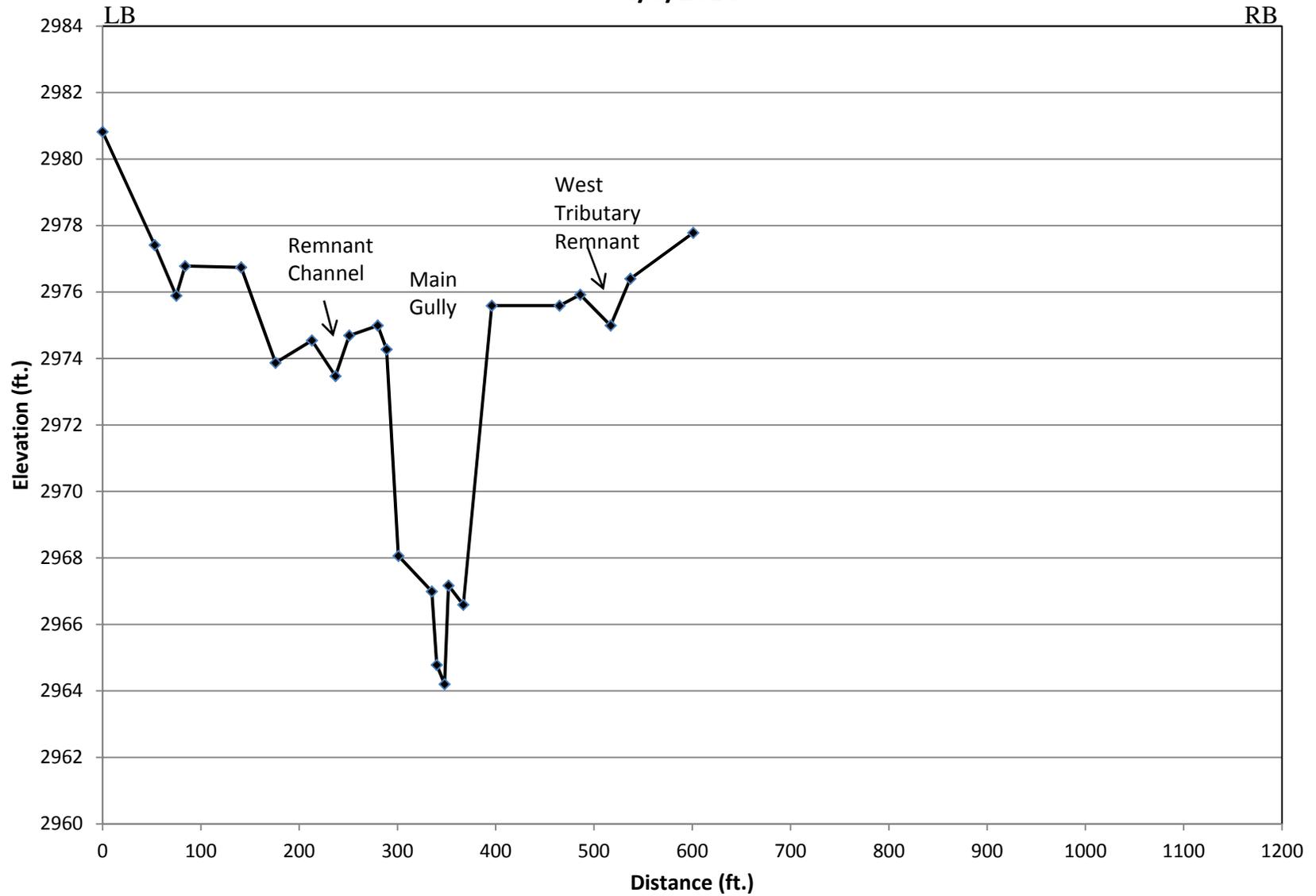
**4/8/2014**



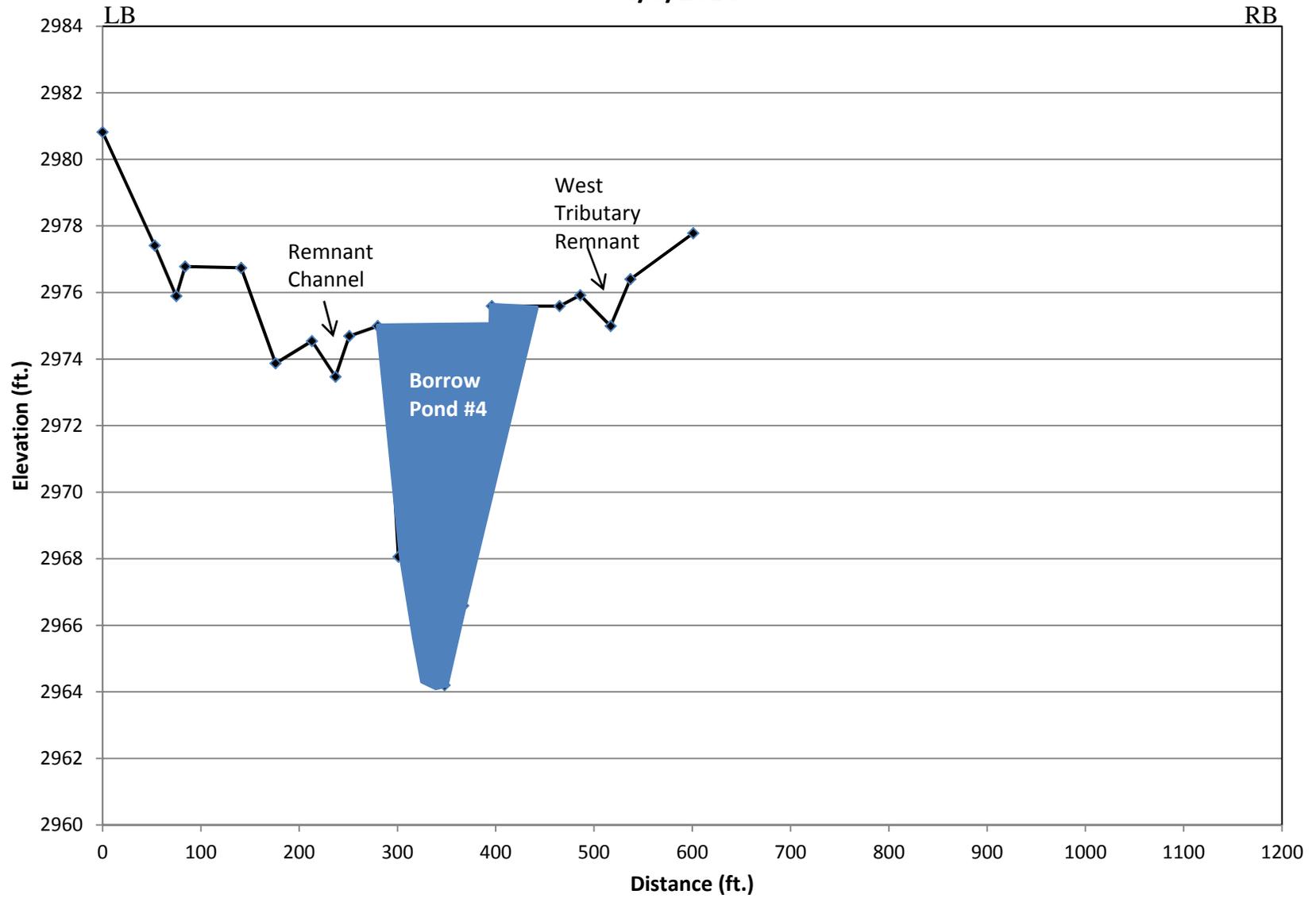
**Bean Meadow X-section #6 (Proposed)**  
**4/8/2014**



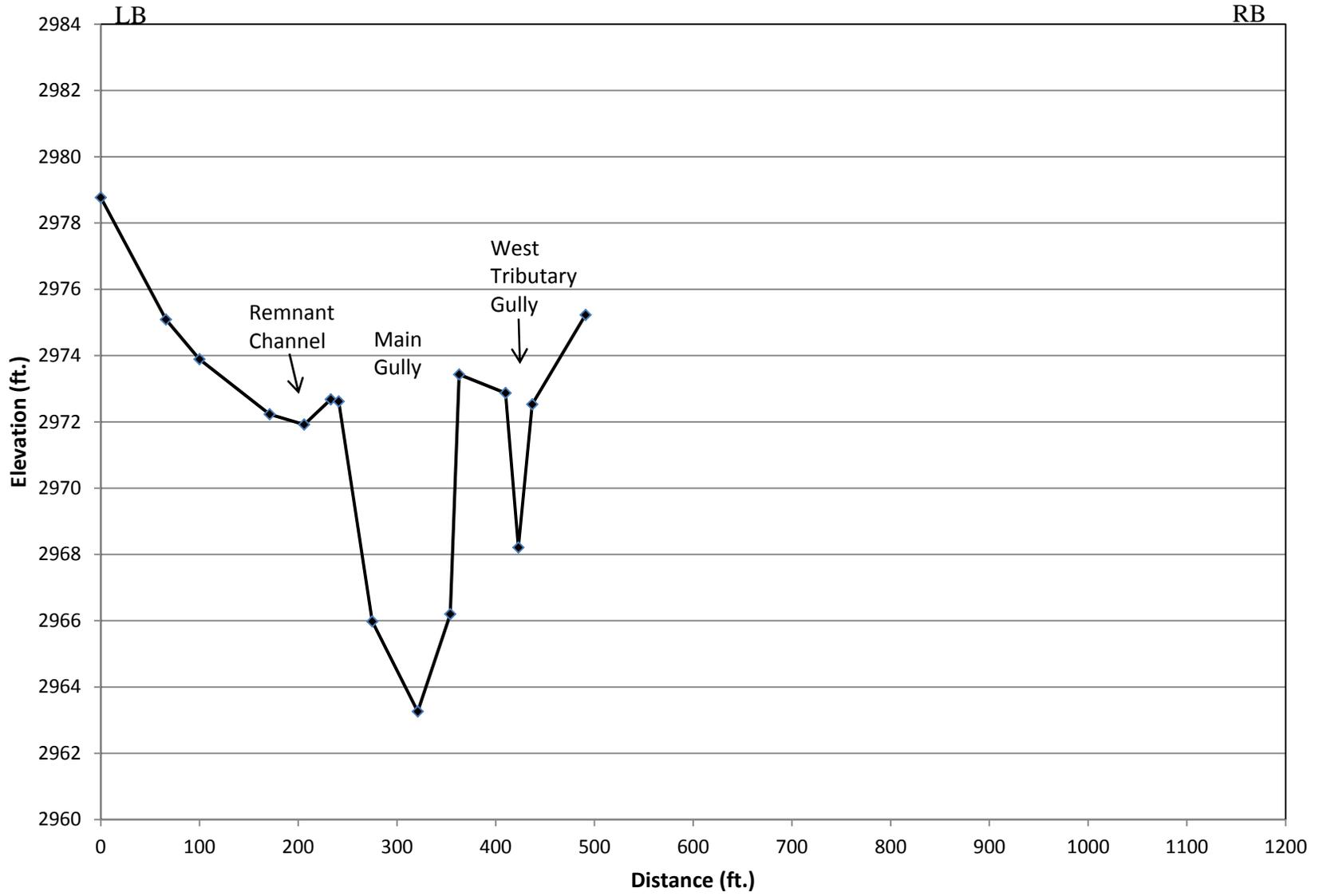
**Bean Meadow X-section #7 (Existing)**  
**4/8/2014**



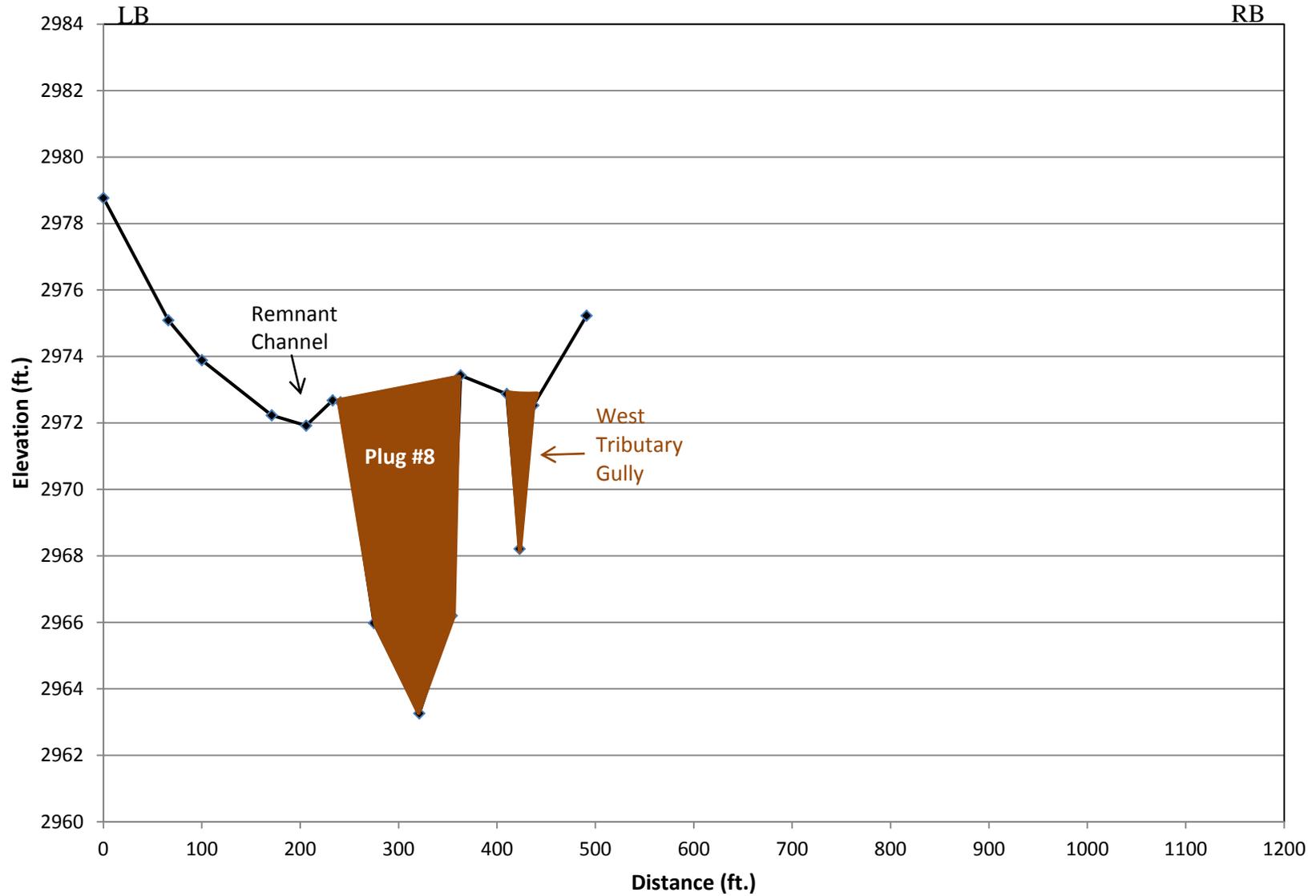
**Bean Meadow X-section #7 (Proposed)**  
**4/8/2014**



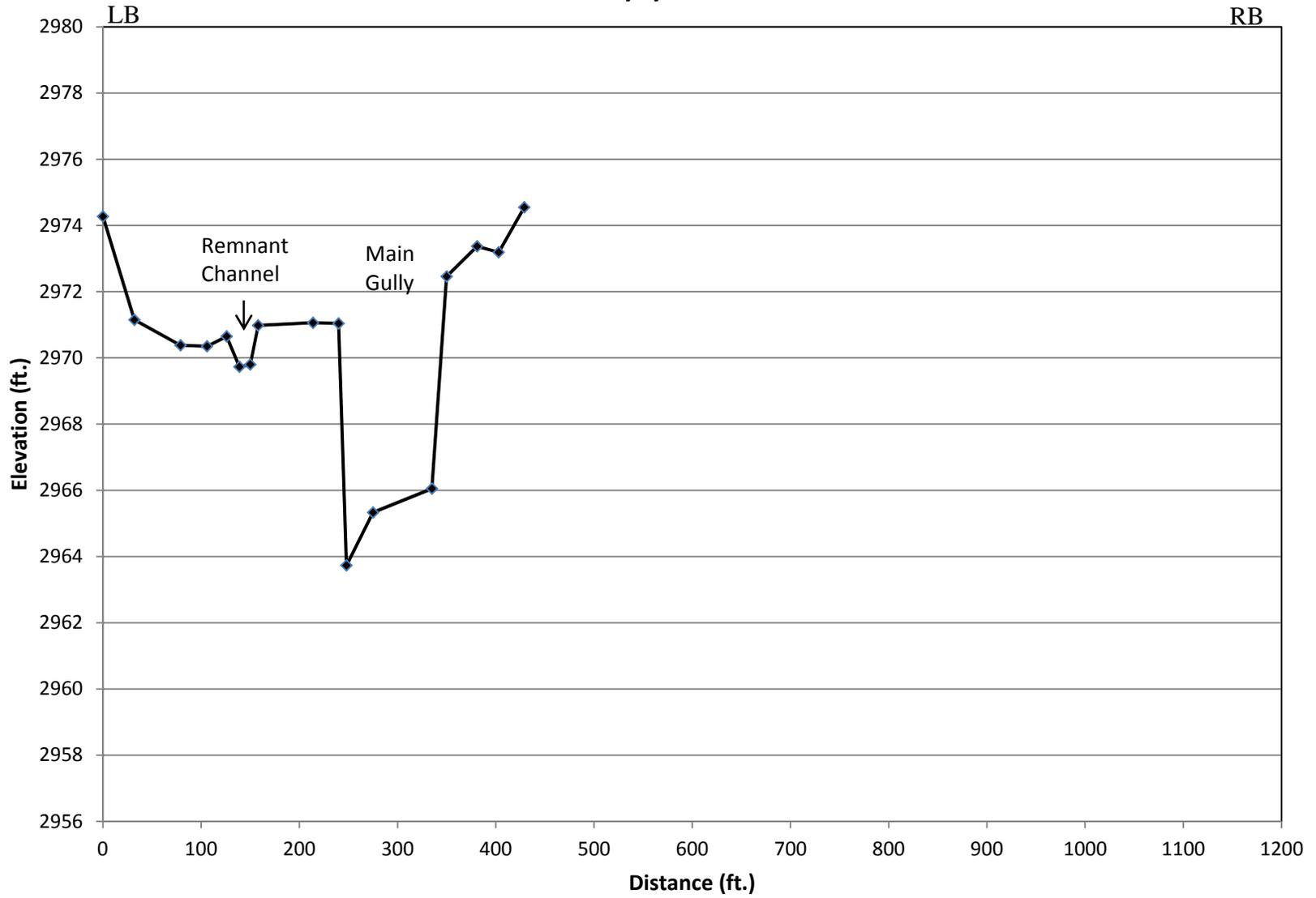
**Bean Meadow X-section #8 (Existing)**  
**4/8/2014**



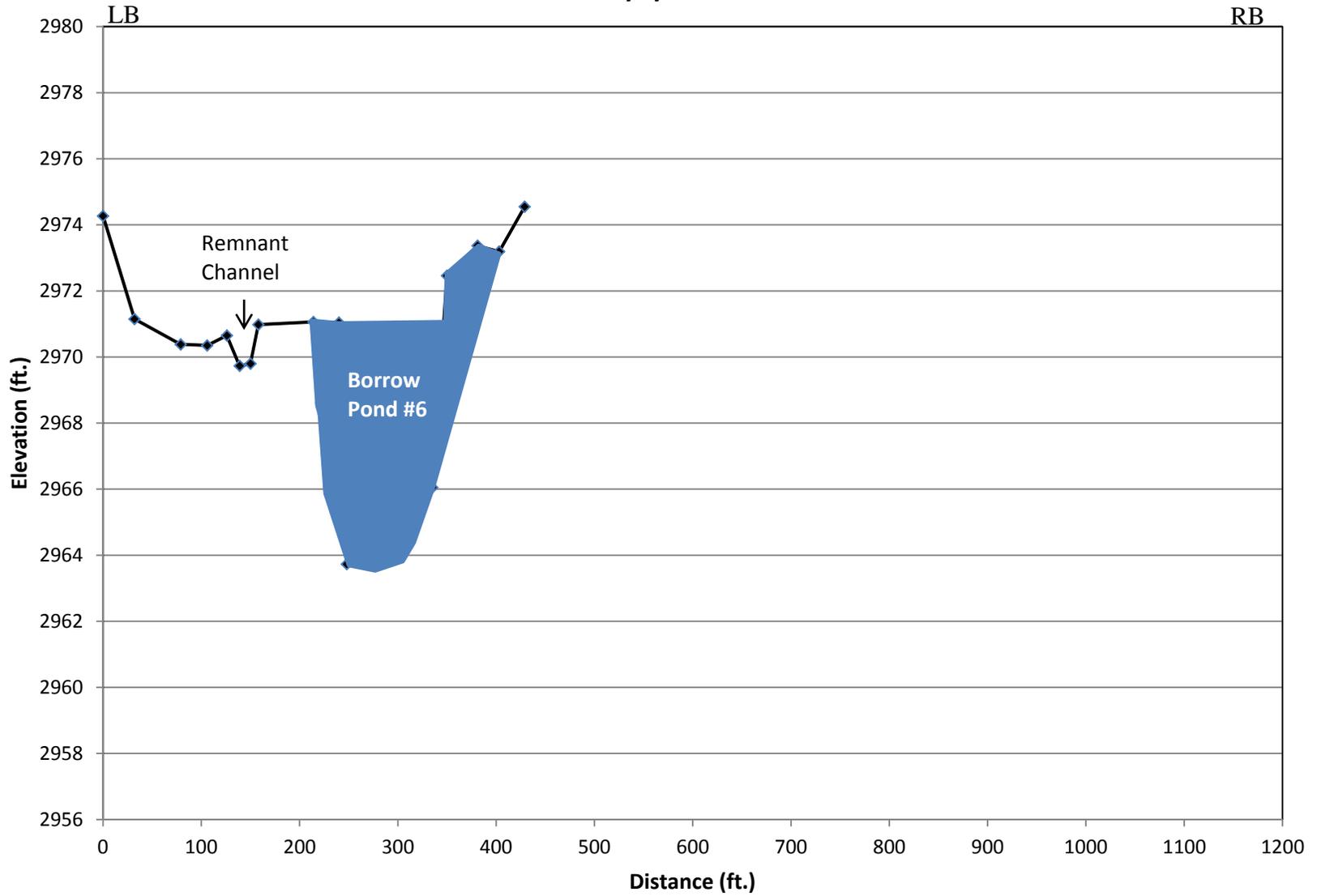
**Bean Meadow X-section #8 (Proposed)**  
**4/8/2014**



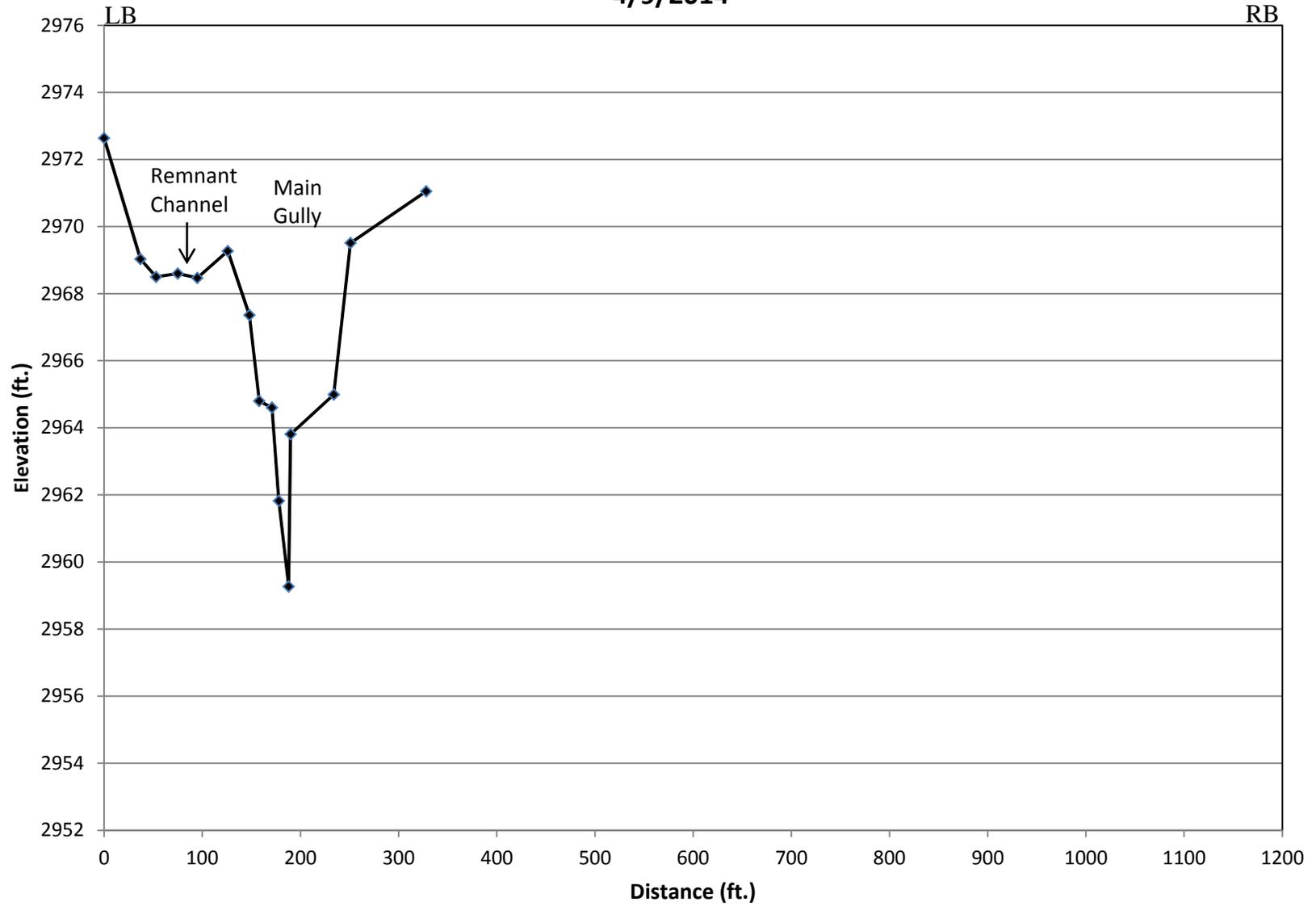
**Bean Meadow X-section #9 (Existing)**  
**4/9/2014**



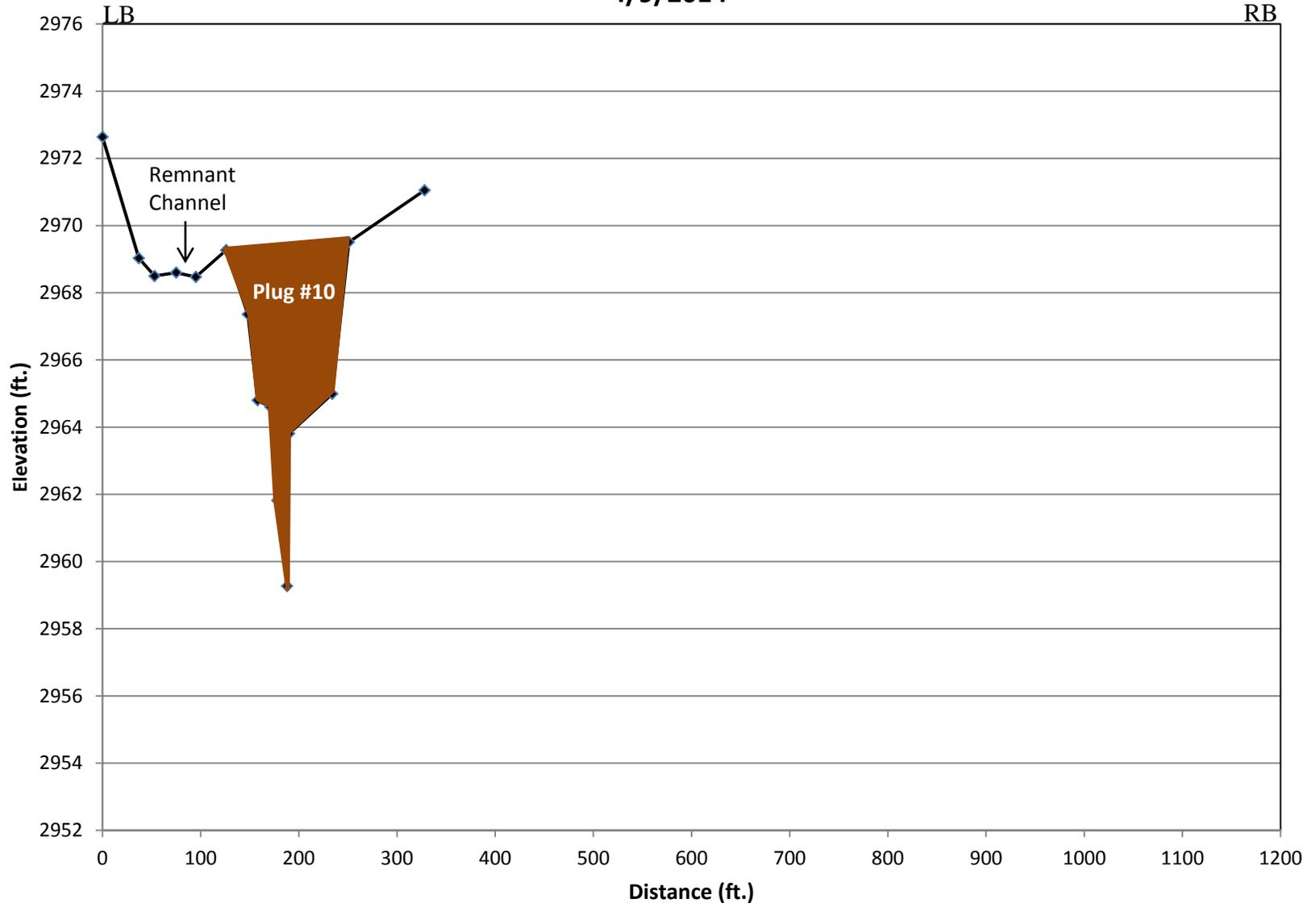
**Bean Meadow X-section #9 (Proposed)**  
**4/9/2014**



**Bean Meadow X-section #10 (Existing)**  
**4/9/2014**

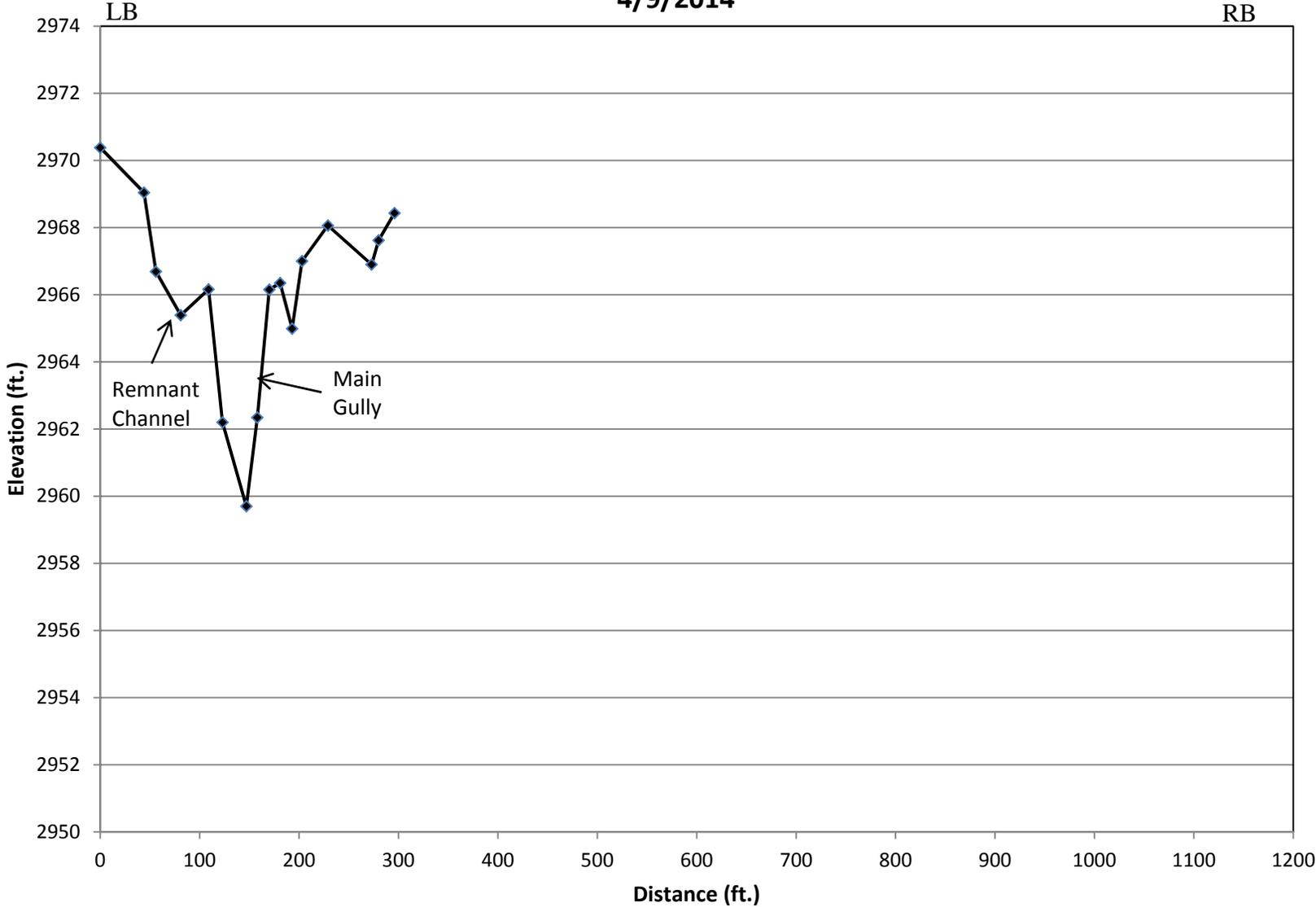


**Bean Meadow X-section #10 (Proposed)**  
**4/9/2014**

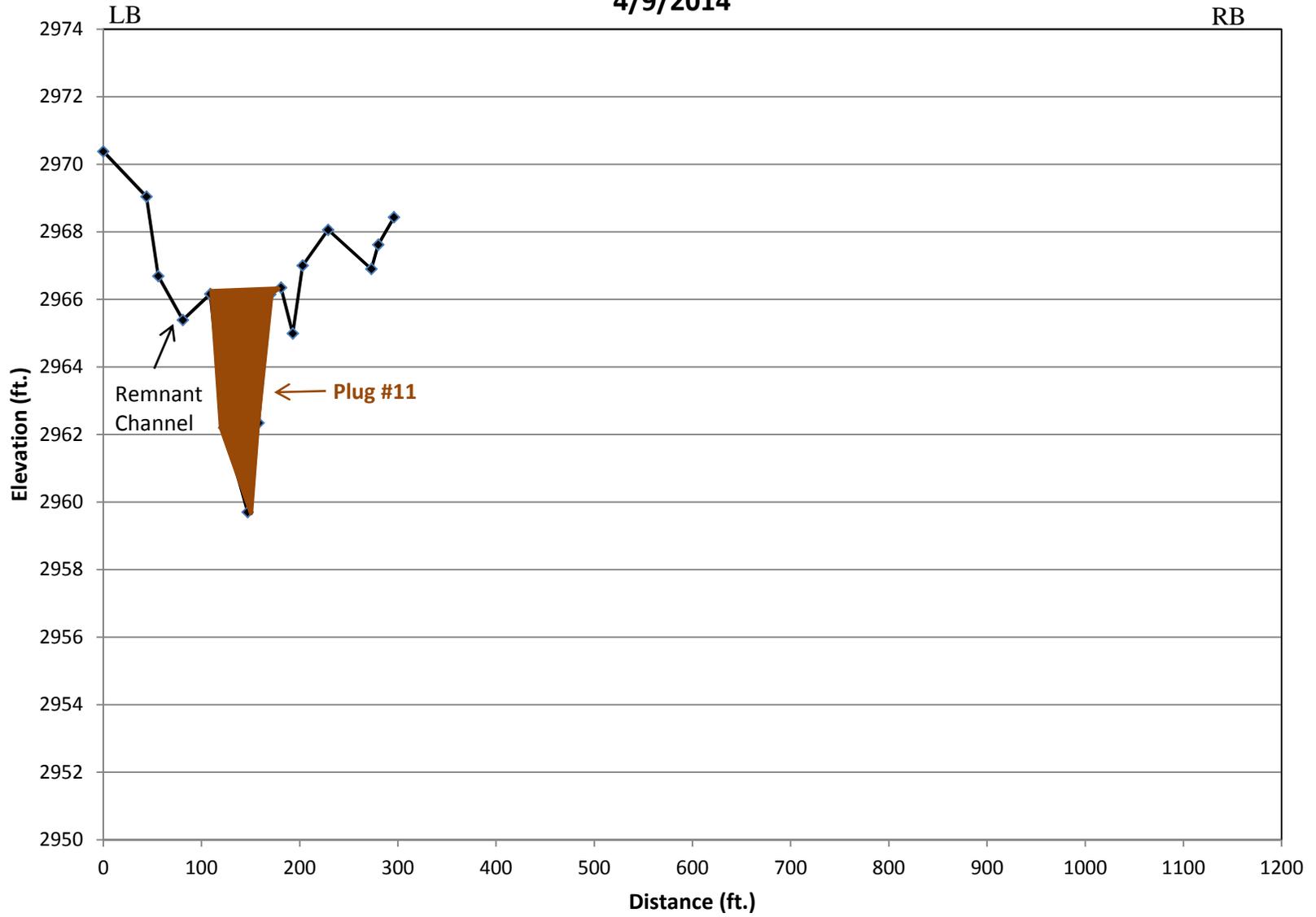


**Bean Meadow X-section #11 (Existing)**

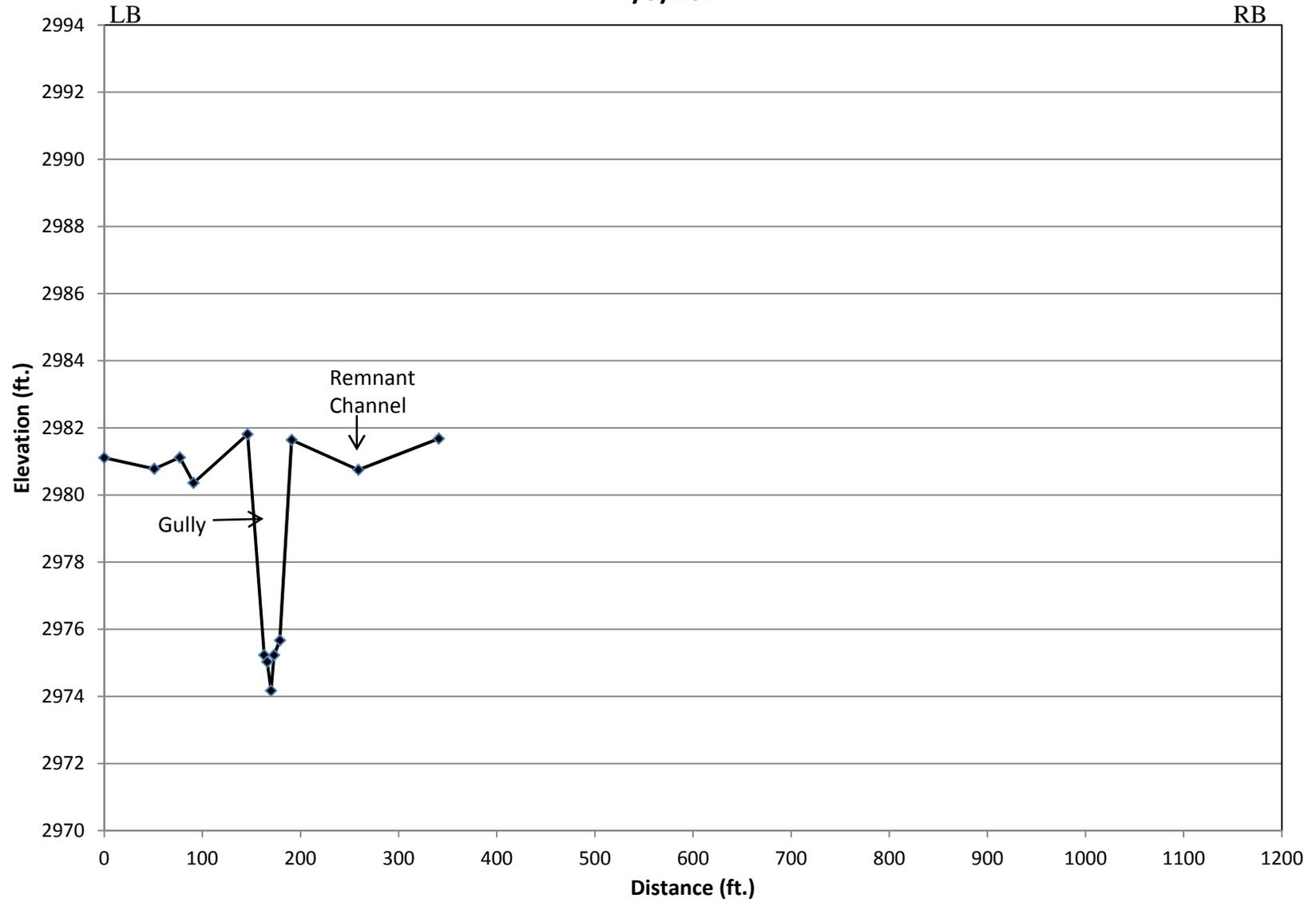
**4/9/2014**



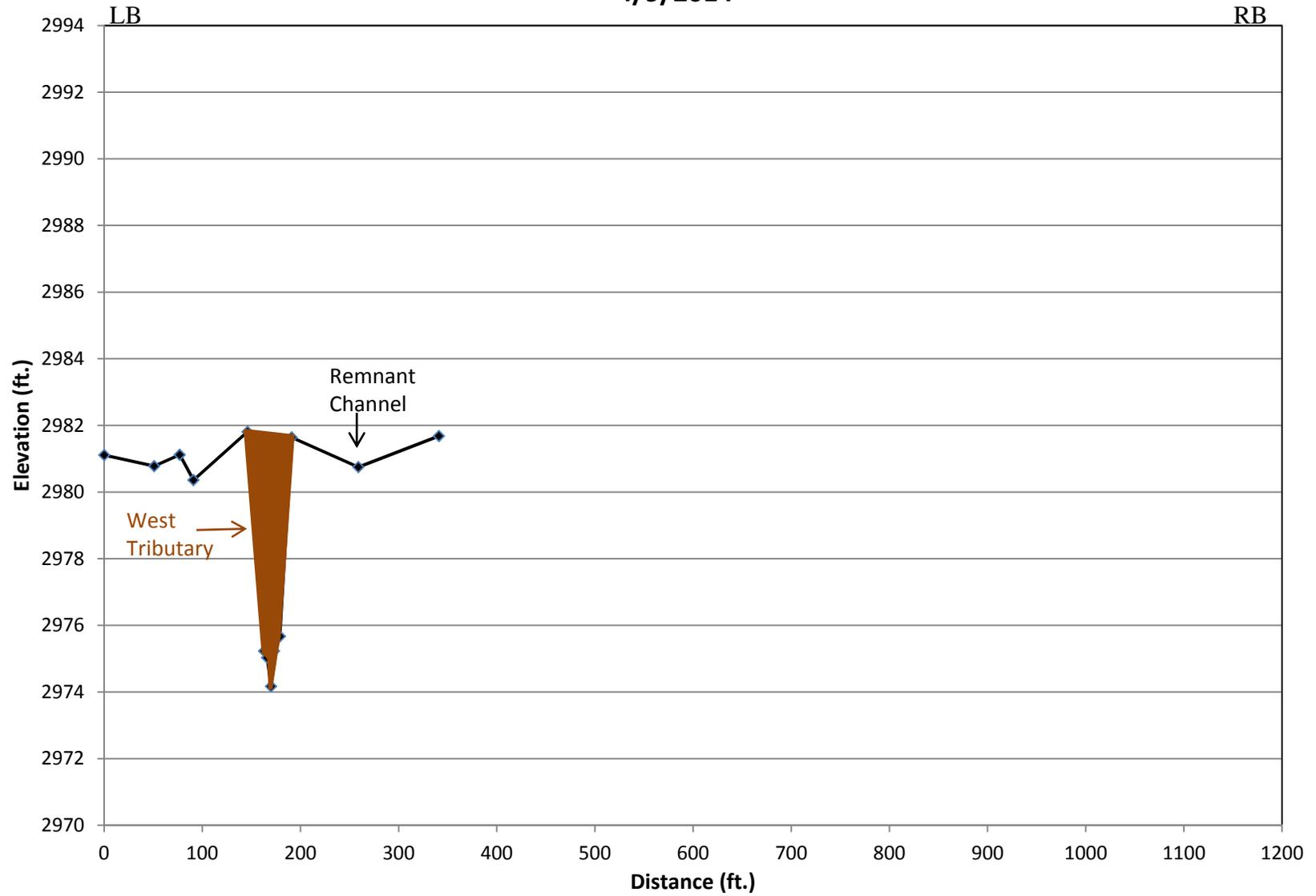
**Bean Meadow X-section #11 (Proposed)**  
**4/9/2014**



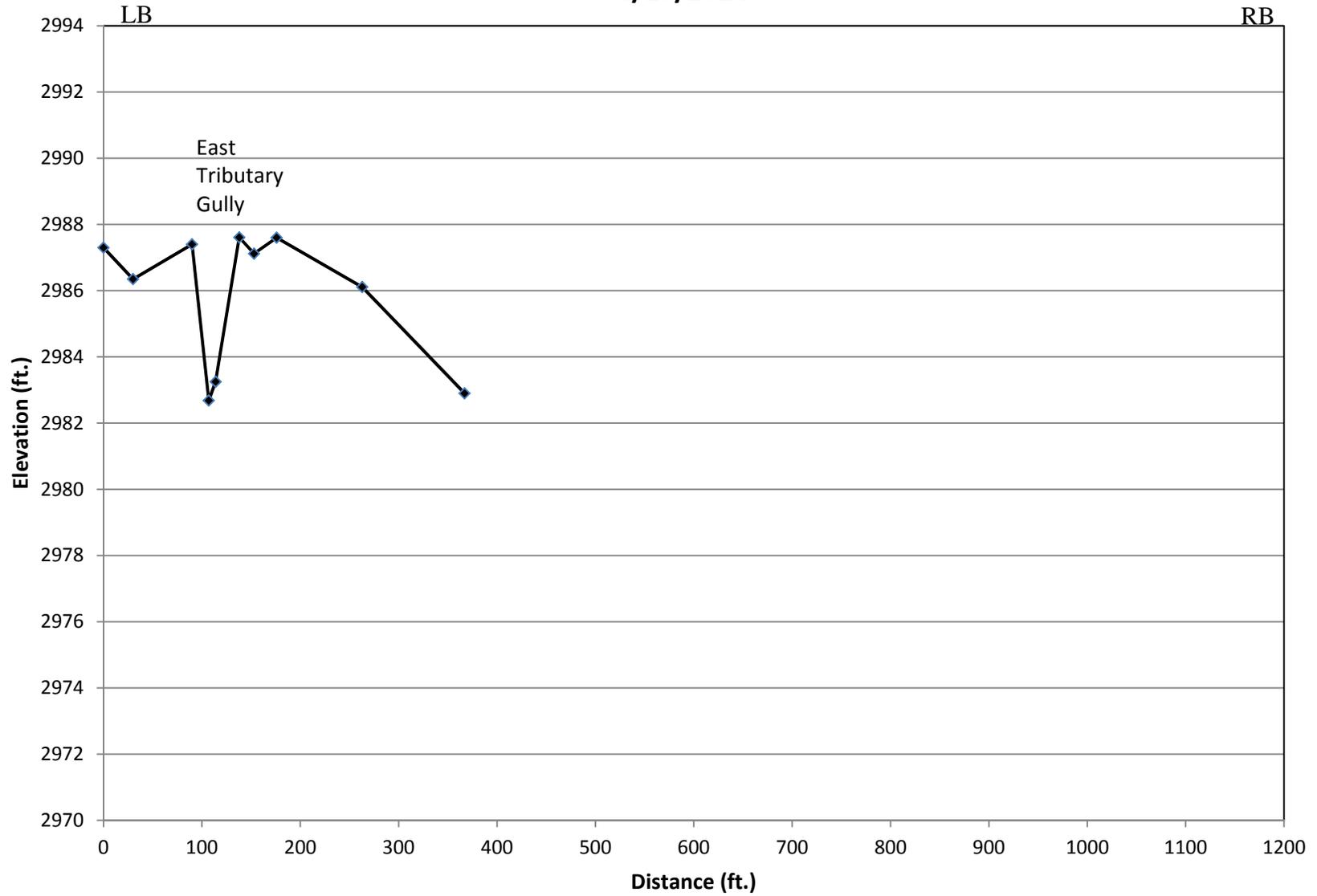
Bean Meadow X-section #W-1 (Existing)  
4/9/2014



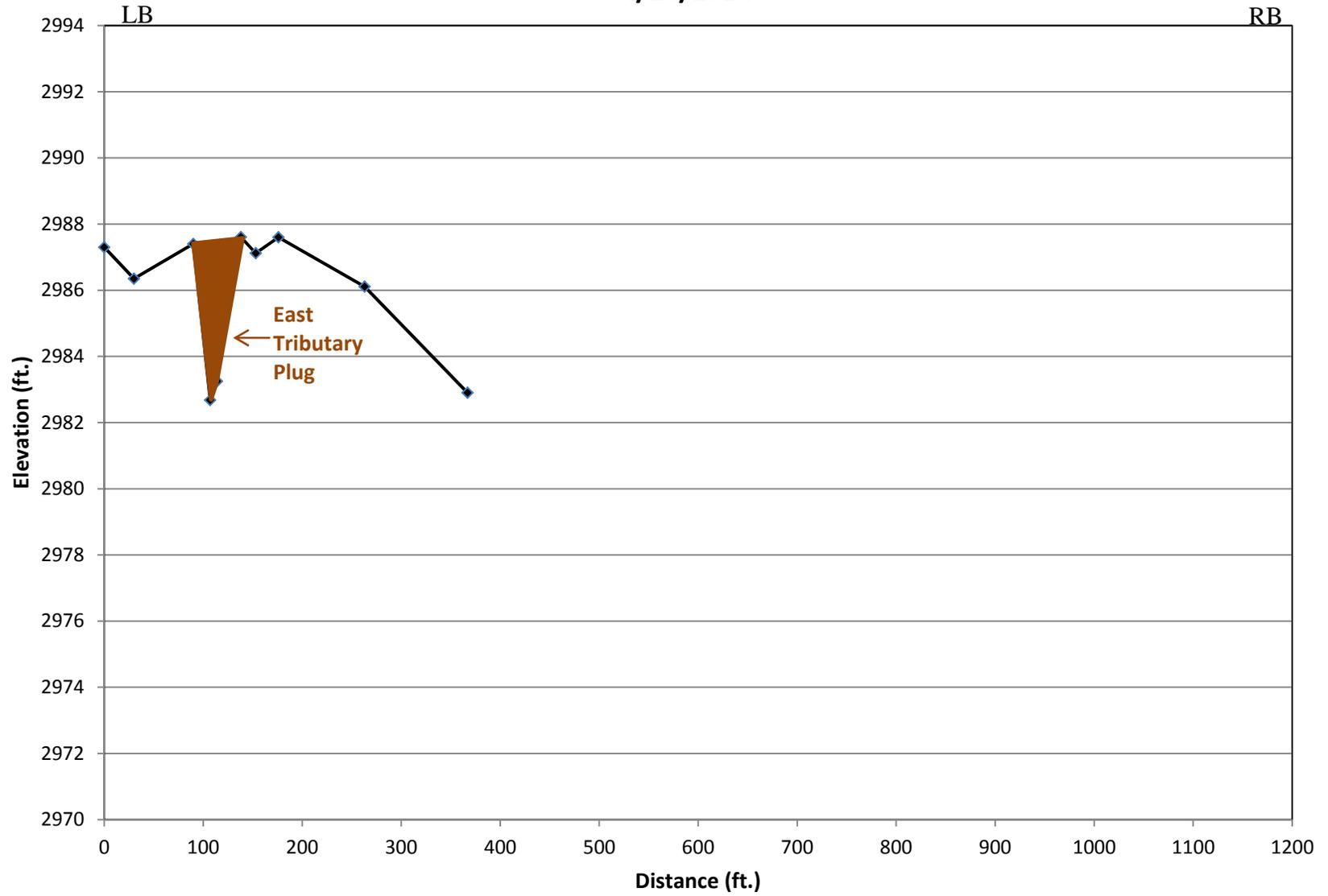
**Bean Meadow X-section #W-1 (Proposed)**  
**4/9/2014**



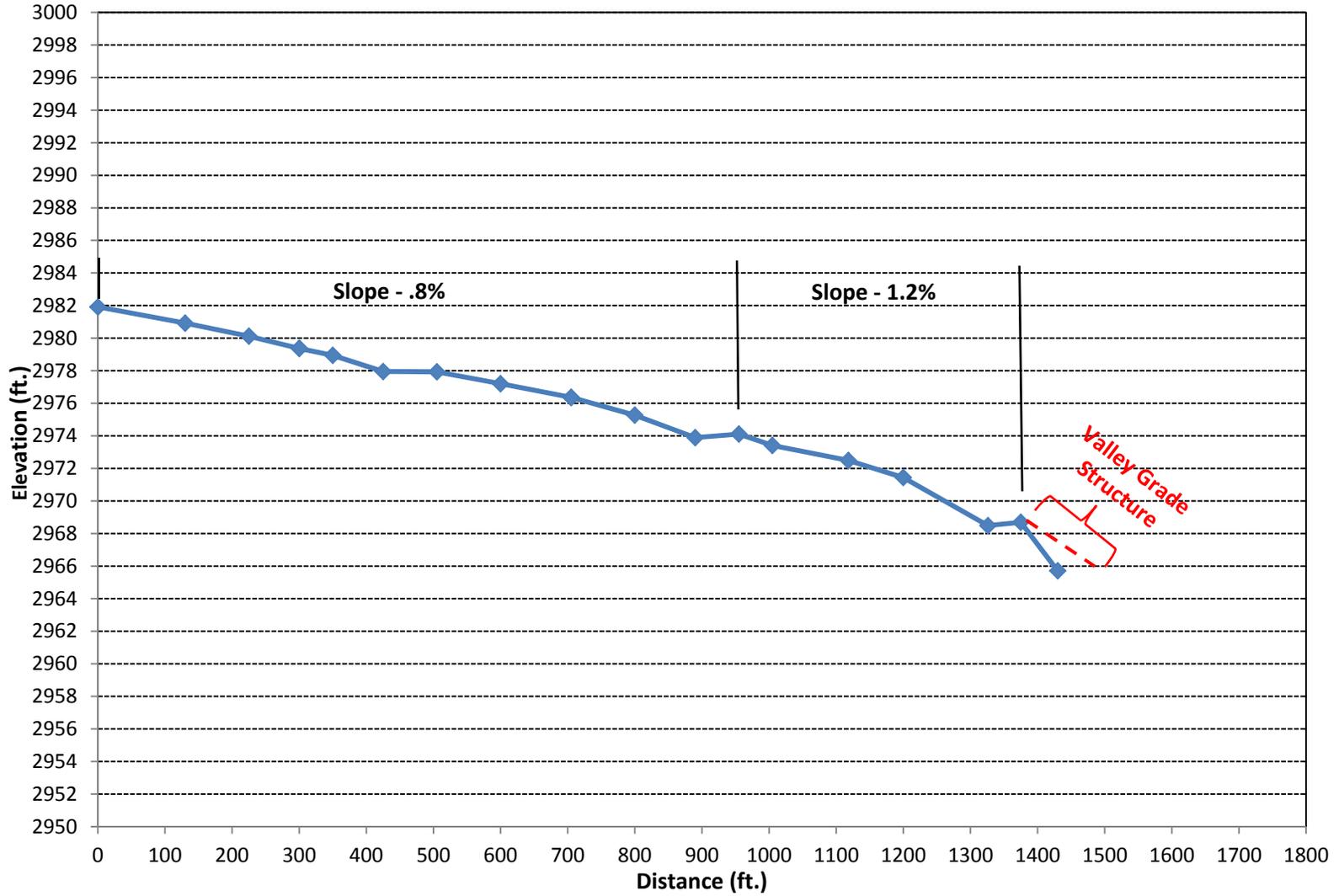
**Bean Meadow X-section #E-1 (Existing)**  
**4/10/2014**



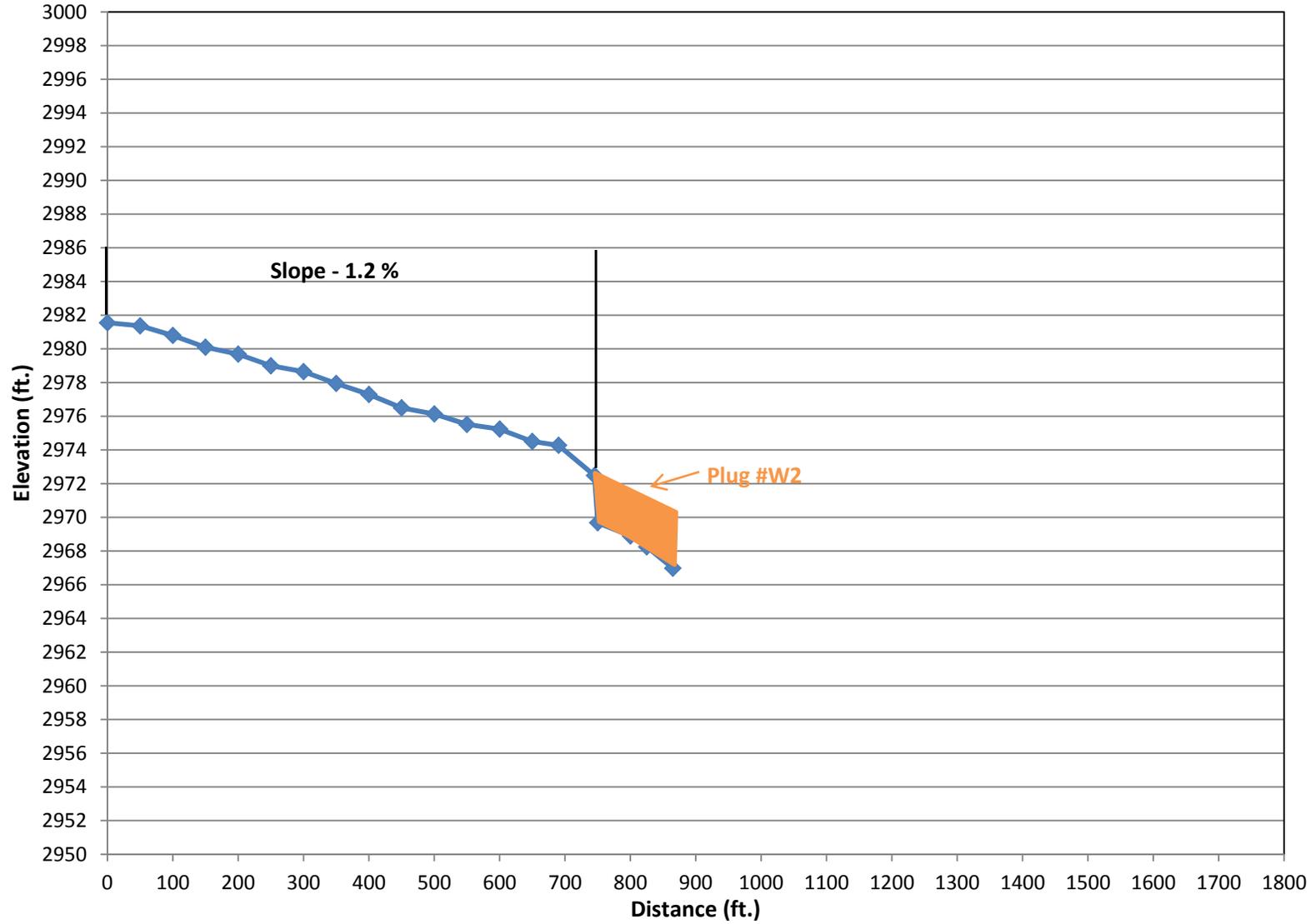
**Bean Meadow X-section #E-1 (Proposed)**  
**4/10/2014**



**Bean Meadow Longitudinal Profile- lower remnant**  
**4/10/2014**



**Bean Meadow Longitudinal Profile- West Tributary Remnant**  
**4/9/2014**





## **APPENDIX C**

Comparative Regression Analyses  
Key Construction Elevations

## Bean Creek Creek Hydrology Calculations

### Comparative Watershed Method:

Standard Formula:  $Q_u = Q_g(A_u/A_g)^b$

$Q_u$  = discharge of ungaged stream

$A_u$  = watershed area of ungaged stream

$b$  = regional coefficient for area

$Q_g$  = discharge of gaged stream

$A_g$  = watershed area of gaged stream

Bean Creek—Big Creek (Groveland):

$$Q_2 = 797(4.97/25)^{.88} = 192 \text{ cfs}$$

$$Q_5 = 2550(4.97/25)^{.82} = 678 \text{ cfs}$$

$$Q_{10} = 4710(4.97/25)^{.80} = 1293 \text{ cfs}$$

$$Q_{25} = 9140(4.97/25)^{.79} = 2551 \text{ cfs}$$

$$Q_{50} = 14100(4.97/25)^{.78} = 3999 \text{ cfs}$$

$$Q_{100} = 20800(4.97/25)^{.77} = 5996 \text{ cfs}$$

Bean Creek--Maxwell Creek (Coulterville):

$$Q_2 = 595(4.97/17)^{.88} = 201 \text{ cfs}$$

$$Q_5 = 1710(4.97/17)^{.82} = 623 \text{ cfs}$$

$$Q_{10} = 2990(4.97/17)^{.80} = 1118 \text{ cfs}$$

$$Q_{25} = 5470(4.97/17)^{.79} = 2070 \text{ cfs}$$

$$Q_{50} = 8100(4.97/17)^{.78} = 3103 \text{ cfs}$$

$$Q_{100} = 11600(4.97/17)^{.77} = 4500 \text{ cfs}$$

Bean Creek—Merced River@Bagby:

$$Q_2 = 12000(4.97/911)^{.88} = 122 \text{ cfs}$$

$$Q_5 = 25200(4.97/911)^{.82} = 351 \text{ cfs}$$

$$Q_{10} = 37700(4.97/911)^{.80} = 583 \text{ cfs}$$

$$Q_{25} = 58400(4.97/911)^{.79} = 951 \text{ cfs}$$

$$Q_{50} = 78000(4.97/911)^{.78} = 1339 \text{ cfs}$$

$$Q_{100} = 102000(4.97/911)^{.77} = 1845 \text{ cfs}$$

### Slope/Area Method:

#### Channel Characteristics:

Bkf Width- 43.7'

Slope- .008 ft/ft

Bkf Depth- .8'

Hydraulic radius-.810

Bkf Area- 36.7 ft<sup>2</sup>

Bkf Wetted perimeter- 45.3.'

#### Velocity Calculations:

Manning's Formula:  $V = 1.48/n(r)^{2/3}(s)^{1/2}$

$$V = 1.48/.030(.810)^{2/3}(.008)^{1/2}$$

$$V = 1.48/.030(.869)^{.667}(.00894)$$

$$V = 3.6 \text{ fps}$$

$$V = 1.48/.035(.810)^{2/3}(.008)^{1/2}$$

$$V = 1.48/.035(.869)^{.667}(.00894)$$

$$V = 3.1 \text{ fps}$$

$$Q = AV$$

$$Q = 36.7 \times 3.1$$

$$Q = 114 \text{ cfs}$$

$$V = 1.48/.040(.810)^{2/3}(.008)^{1/2}$$

$$V = 1.48/.040(.869)^{.667}(.00894)$$

$$V = 2.6 \text{ fps}$$

### Multiple Regression Analysis:

**Bean Creek:**  $A = 4.97 \text{ mi}^2$ .  $P = 37.375''$  annual precip.  $H = 3,340'$  mean elevation

\*\*Standard coefficients derived by Waananen & Crippen from 249 stations Sierra-wide:

$$Q_2 = .24(4.97^{.88})(37.375^{1.58})(3.34^{-.80}) = 114 \text{ cfs}$$

$$Q_5 = 1.20(4.97^{.82})(37.375^{1.37})(3.34^{-.64}) = 295 \text{ cfs}$$

$$Q_{10} = 2.63(4.97^{.80})(37.375^{1.25})(3.34^{-.58}) = 435 \text{ cfs}$$

$$Q_{25} = 6.55(4.97^{.79})(37.375^{1.12})(3.34^{-.52}) = 716 \text{ cfs}$$

$$Q_{50} = 10.40(4.97^{.78})(37.375^{1.06})(3.34^{-.48}) = 945 \text{ cfs}$$

$$Q_{100} = 15.70(4.97^{.77})(37.375^{1.02})(3.34^{-.43}) = 1291 \text{ cfs}$$

**Bean Meadow Key Construction Elevations**

The key design elevations below are intended to be used for final constructed grade, and referenced to local project established benchmarks. The benchmarks are 1/2" galv pipe set flush to ground level flagged, painted and GPS'ed to sub meter horizontal accuracy.

Elevations were traversed using a Leica Rugby LR 100 laser from BM#1 with an assigned elevation of 3000.00.

Plug corners are referenced as upstream (URC) or downstream (DRC) right or left looking downstream.

<b><u>Plug #1</u></b>				<b><u>Plug #4</u></b>			
<b><u>Feature</u></b>	<b><u>Elevation</u></b>	<b><u>Ref. BM</u></b>	<b><u>Elevation</u></b>	<b><u>Feature</u></b>	<b><u>Elevation</u></b>	<b><u>Ref. BM</u></b>	<b><u>Elevation</u></b>
URC	2982.02	RP Xs#4	2982.42	URC	2976.07	LP Xs#7	2980.82
ULC	2982.02	RP Xs#4	2982.42	ULC	2974.97	LP Xs#7	2980.82
channel	2980.82	RP Xs#4	2982.42	channel	2973.77	LP Xs#7	2980.82
fldpln	2981.22	RP Xs#4	2982.42	fldpln	2974.37	LP Xs#7	2980.82
DRC	2980.47	RP Xs#4	2982.42	DRC	2974.87	LP Xs#7	2980.82
DLC	2981.32	RP Xs#4	2982.42	DLC	2973.77	LP Xs#7	2980.82
<b><u>Plug #2</u></b>				<b><u>Plug #5</u></b>			
<b><u>Feature</u></b>	<b><u>Elevation</u></b>	<b><u>Ref. BM</u></b>	<b><u>Elevation</u></b>	<b><u>Feature</u></b>	<b><u>Elevation</u></b>	<b><u>Ref. BM</u></b>	<b><u>Elevation</u></b>
URC	2980.57	RP Xs#4	2982.42	URC	2973.63	RP Xs#7	2977.78
ULC	2980.72	RP Xs#4	2982.42	ULC	2972.73	RP Xs#7	2977.78
channel	2979.57	RP Xs#4	2982.42	channel	2971.83	RP Xs#7	2977.78
fldpln	2979.77	RP Xs#4	2982.42	fldpln	2972.23	RP Xs#7	2977.78
DRC	2978.37	RP Xs#4	2982.42	DRC	2972.78	RP Xs#7	2977.78
DLC	2977.82	RP Xs#4	2982.42	DLC	2971.83	RP Xs#7	2977.78
<b><u>Plug #3</u></b>				<b><u>Plug #6</u></b>			
<b><u>Feature</u></b>	<b><u>Elevation</u></b>	<b><u>Ref. BM</u></b>	<b><u>Elevation</u></b>	<b><u>Feature</u></b>	<b><u>Elevation</u></b>	<b><u>Ref. BM</u></b>	<b><u>Elevation</u></b>
URC	2977.93	RP Xs#7	2977.78	URC	2972.14	LP Xs#10	2972.64
ULC	2977.07	LP Xs#7	2980.82	ULC	2971.64	LP Xs#10	2972.64
channel	2976.37	LP Xs#7	2980.82	channel	2970.14	LP Xs#10	2972.64
fldpln	2976.57	LP Xs#7	2980.82	fldpln	2970.64	LP Xs#10	2972.64
DRC	2976.98	RP Xs#7	2977.78	DRC	2972.64	LP Xs#10	2972.64
DLC	2975.72	LP Xs#7	2980.82	DLC	2970.14	LP Xs#10	2972.64

**Bean Meadow Key Construction Elevations**

The key design elevations below are intended to be used for final constructed grade, and referenced to local project established benchmarks. The benchmarks are 1/2" galv pipe set flush to ground level flagged, painted and GPS'ed to sub meter horizontal accuracy. Elevations were traversed using a Leica Rugby LR 100 laser from BM#1 with an assigned elevation of 3000.00. Plug corners are referenced as upstream (URC) or downstream (DRC) right or left looking downstream.

<b><u>Plug #7</u></b>				<b><u>Plug #W-1 (west tributary)</u></b>				
<b><u>Feature</u></b>	<b><u>Elevation</u></b>		<b><u>Ref. BM</u></b>	<b><u>Elevation</u></b>	<b><u>Feature</u></b>	<b><u>Elevation</u></b>	<b><u>Ref. BM</u></b>	<b><u>Elevation</u></b>
URC	2970.24		LP Xs#10	2972.64	URC	2982.27	RP Xs#4	2982.42
ULC	2970.04		LP Xs#10	2972.64	ULC	2981.92	RP Xs#4	2982.42
channel	2969.24		LP Xs#10	2972.64	channel	2980.02	RP Xs#4	2982.42
fldpln	2969.64	70'	LP Xs#10	2972.64	fldpln right	2981.22	RP Xs#4	2982.42
DRC	2965.39		LP Xs#10	2972.64	fldpln left	2981.02	RP Xs#4	2982.42
DLC	2965.05		LP Xs#10	2972.64	DRC	2980.59	RP Xs#7	2977.78
					DLC	2980.72	RP Xs#4	2982.42
<b><u>Plug #W-2 (west Tributary)</u></b>				<b><u>Plug #E-1 (east tributary)</u></b>				
<b><u>Feature</u></b>	<b><u>Elevation</u></b>		<b><u>Ref. BM</u></b>	<b><u>Elevation</u></b>	<b><u>Feature</u></b>	<b><u>Elevation</u></b>	<b><u>Ref. BM</u></b>	<b><u>Elevation</u></b>
URC	2973.48		RP Xs#7	2977.78	URC	2989.05	LP Xs#3	2988.75
ULC	2973.78		RP Xs#7	2977.78	ULC	2989.35	LP Xs#3	2988.75
channel	2972.43		RP Xs#7	2977.78	channel	2988.75	LP Xs#3	2988.75
fldpln	2973.78	50'	RP Xs#7	2977.78				
DRC	2972.93		RP Xs#7	2977.78	DRC	2986.05	LP Xs#3	2988.75
DLC	2972.53		RP Xs#7	2977.78	DLC	2985.75	LP Xs#3	2988.75
<b><u>Plug #HC-1</u></b>				<b><u>Plug #6</u></b>				
<b><u>Feature</u></b>	<b><u>Elevation</u></b>		<b><u>Ref. BM</u></b>	<b><u>Elevation</u></b>	<b><u>Feature</u></b>	<b><u>Elevation</u></b>	<b><u>Ref. BM</u></b>	<b><u>Elevation</u></b>
URC	2983.92		LP Xs#3	2988.75	URC	2984.87	LP Xs#3	2988.75
ULC	2984.97		LP Xs#3	2988.75	ULC	2984.92	LP Xs#3	2988.75
DRC	2982.92		LP Xs#3	2988.75	DRC	2980.92	LP Xs#3	2988.75
DLC	2982.72		LP Xs#3	2988.75	DLC	2982.12	LP Xs#3	2988.75





# LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

**BIOLOGICAL EVALUATION  
MEADOW RESTORATION PROJECT  
BEAN CREEK PRESERVE  
MARIPOSA COUNTY, CALIFORNIA**



Prepared by

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Revised March 9, 2015

Project No.: 1627-02

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## EXECUTIVE SUMMARY

Live Oak Associates, Inc. (LOA) conducted an investigation of the biological resources of a proposed 39-acre meadow restoration site located on the Sierra Foothill Conservancy's Bean Creek Preserve in Mariposa County, California, and evaluated likely impacts to such resources resulting from the proposed project. The goal of the project is to restore the hydrologic function of the channel/floodplain system within the lower portion of the Bean Creek Meadow. The intended end result of the project will be the restoration of 39 acres of meadow to some semblance of its historic condition. A pond and plug system of meadow restoration will be used to achieve the project goals. The project site is located approximately one mile north of the intersection of Fiske Road and Greeley Hill Road. LOA conducted field investigations within the project site in December 2010 and April and May 2012 to establish baseline conditions and analyze project impacts to the biological resources on or within the vicinity of the project site. A delineation of likely jurisdictional waters was conducted as a component of the spring 2012 survey effort.

Two biotic habitats, montane meadow and Bean Creek, were identified on the project site, which occurs in a region dominated by mixed coniferous forest interspersed with meadows and creeks. The meadow is highly degraded as the result of erosion of the main creek channel through the meadow and tributary gullies. Deeply incised channels have lowered the water table, thus dry the meadow and creating conditions suitable for the recruitment of ponderosa pines and incense cedars. Hence the desire to implement measures that would restore the meadow to its historic condition, if possible.

Potentially significant project impact to biological resources would be limited to roosting bats protected under Fish and Game Code. Removal of trees occupied by maternal roosting pallid bats (*Antrozous pallidus*) has the potential to cause the mortality and/or injury of many individual bats. Preconstruction surveys and avoidance of maternal roost trees, should active roost trees be found, will reduce impacts to the pallid bat to a less than significant level.

Due to the restorative nature of the project, the project will result in a less than significant impact on most biological resources. The project may temporarily impact two special status species plants, one of which, the yellow-lip pansy monkeyflower, (*Mimulus pulchellus*) is known to occur on the project site. Project impact to these plant species is considered less than significant with mitigation. The project will have no effect on nesting birds since project construction will occur outside of the nesting season. Project impacts will also be less than significant for wildlife movement corridors, local policies, and many special status animal species that may occasionally forage on the project site. Since the project restoration work will increase the area, function, and value of wetland and riparian habitats, including waters of the U.S., the project will have a less than significant impact on these resources. However, to comply with state and federal laws, the applicant must obtain the appropriate permits pursuant to Sections 404 and 401 of the Clean Water Act, and a Stream Alteration Agreement pursuant to Section 1602 of California Fish and Game Code, and comply with the provisions of these permits and agreements.

**TABLE OF CONTENTS**

1.0 INTRODUCTION ..... 1

    1.1 PROJECT LOCATION AND DESCRIPTION ..... 1

    1.3 STUDY METHODOLOGY ..... 8

2.0 EXISTING CONDITIONS ..... 10

    2.1 BIOTIC HABITATS/LAND USES ..... 11

    2.2 SPECIAL STATUS PLANTS AND ANIMALS ..... 14

    2.3 JURISDICTIONAL WATERS ..... 25

3.0 IMPACTS AND MITIGATIONS ..... 27

    3.1 SIGNIFICANCE CRITERIA ..... 27

    3.2 RELEVANT GOALS, POLICIES, AND LAWS ..... 28

        3.2.1 Threatened and Endangered Species ..... 28

        3.2.2 Migratory Birds..... 29

        3.2.3 Birds of Prey ..... 29

        3.2.4 Wetlands and Other Jurisdictional Waters..... 29

    3.3 POTENTIALLY SIGNIFICANT PROJECT IMPACTS/MITIGATION ..... 31

        3.3.1 Impacts to Special Status Roosting Bats ..... 31

    3.4 LESS THAN SIGNIFICANT PROJECT IMPACTS ..... 32

        3.4.1 Loss of Habitat for Special Status Plants..... 32

        3.4.2 Disturbance to Yellow-lip Pansy Monkeyflower and Brownish Beaked-Rush ..... 32

        3.4.3 Loss of Habitat or Direct Impact to Special Status Animals Absent or Unlikely to Occur on the Site..... 33

        3.4.4 Loss of Habitat for Special Status Animals that may Occur on the Site as Occasional or Regular Foragers but Breed Elsewhere ..... 34

        Mitigation. No mitigation required..... 34

        3.4.5 Disturbance to Special Status Bird Species and Other Migratory Birds That May Nest on or Immediately Adjacent to the Site..... 34

        3.4.6 Direct Impacts to Resident Special Status Avian Species ..... 34

        3.4.7 Project Impacts to Fish or Wildlife Movement Corridors ..... 35

        3.4.8 Potential Impact to Riparian Habitat Or Other Sensitive Natural Communities ..... 35

        3.4.9 Project Impact to Jurisdictional Waters ..... 36

        3.4.10 Local Policies or Habitat Conservation Plans..... 37

4.0 LITERATURE REFERENCED OR CITED..... 38

APPENDIX A: VASCULAR PLANTS OF THE PROJECT SITE..... 40

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE..... 48

APPENDIX C: SELECTED SITE PHOTOGRAPHS ..... 56

## **1.0 INTRODUCTION**

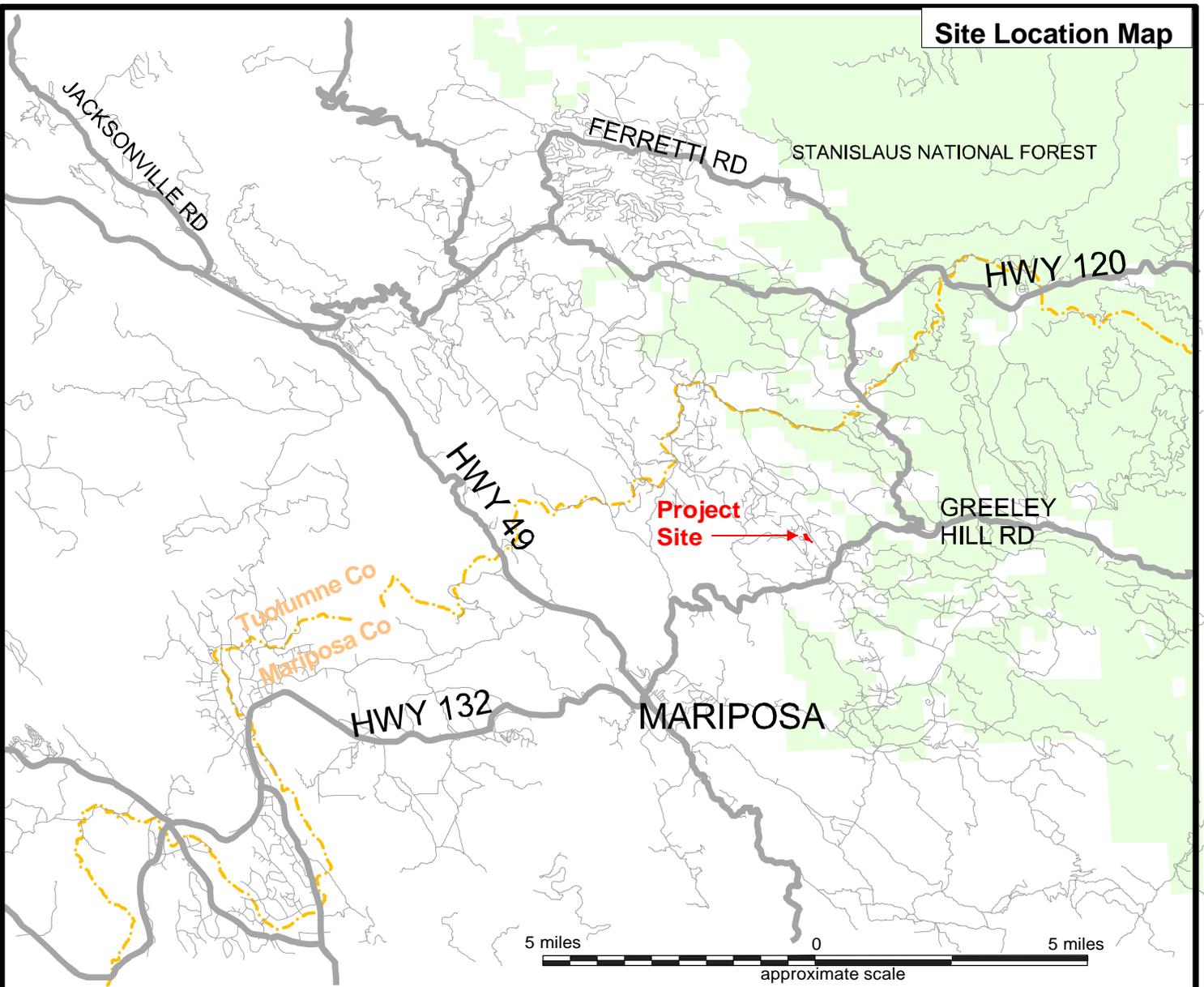
The technical report that follows describes the biotic resources of the Bean Creek Meadow Restoration Project site (hereafter referred to as the “project site” or “site”) located within the Bean Creek Preserve, and evaluates possible impacts to those resources that could result from the proposed Project. The project site encompasses 39 acres of two adjacent 80-acre parcels, one of which is owned by Sierra Foothill Conservancy (SFC) (known as the “Bean Creek Preserve”) and the other by Steven Dunckel. It is located approximately one mile north of the intersection of Fiske Road and Greeley Hill Road in Greeley Hill, Mariposa County, California (Figure 1). The address is 10505 Fiske Road. The project site is within the Coulterville USGS 7.5 minute quadrangle; Section 19, Township 2 South, Range 17 East, Mt. Diablo Base and Meridian (Figure 2).

### **1.1 PROJECT DESCRIPTION**

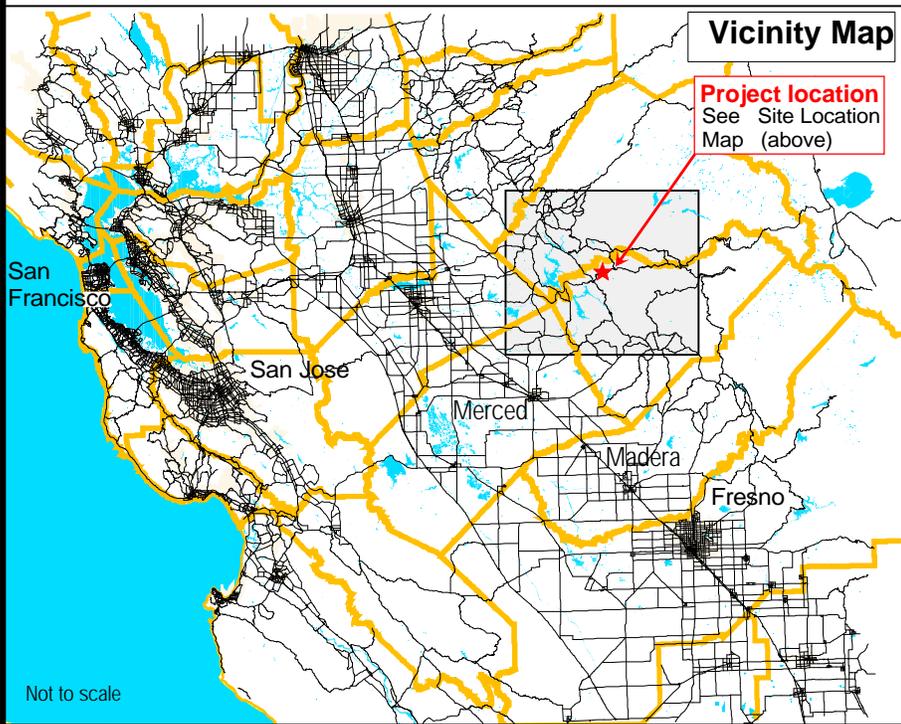
The 200-acre plus Bean Creek Meadow, a low-elevation meadow of the central Sierra foothills, has been significantly degraded over time. The causes of this degradation are not perfectly well known, but since the time of the California Gold Rush, human activities contributing to this degradation probably include logging, grazing, hay farming, and possible modifications to the Bean Creek Channel made to facilitate the irrigation of hay fields. The Bean Creek channel, which passes through the meadow from northwest to southeast, has become deeply incised. Tributaries within the meadow have likewise eroded into deepened incised channels. This erosion is estimated to have removed approximately 80,600 cubic yards of soil from the historic Bean Creek Meadow (Wilcox 2014). Channel incision has effectively lowered the water table, greatly reducing the meadow’s capacity to store groundwater. Furthermore, dewatering of the meadow has dried the meadow’s soils, thus creating conditions suitable for the recruitment of conifers and other upland vascular plant species where historically those species could not grow due to saturated soil conditions.

The Bean Creek Meadow Restoration Project goal is to restore the hydrologic function of the channel/floodplain system within the lower portion of the Bean Creek Meadow. Achieving this

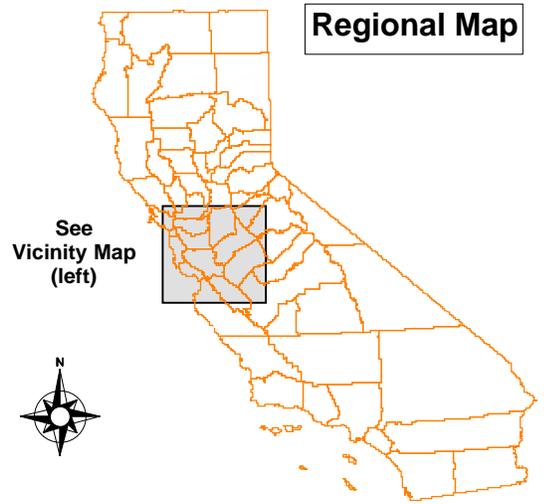
# Site Location Map



# Vicinity Map

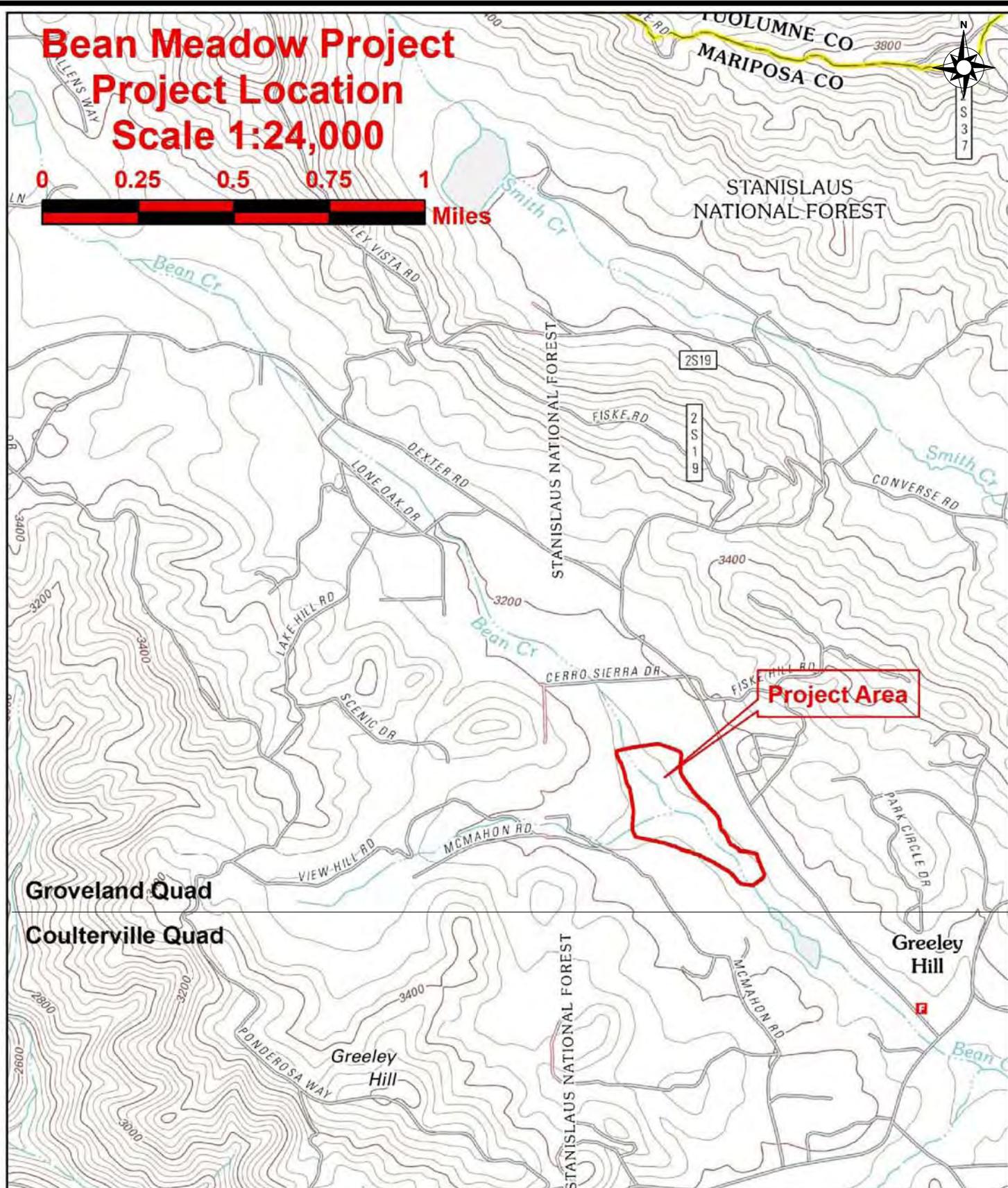


# Regional Map



 <b>Live Oak Associates, Inc.</b>		
<b>Bean Meadow Restoration B.E.</b> Site / Vicinity Map		
Date 8/19/2014	Project # 1627-02	Figure # 1

# Bean Meadow Project Project Location Scale 1:24,000



**Live Oak Associates, Inc.**

**Bean Meadow Restoration B.E.**  
U.S.G.S. Quadrangle

Date	Project #	Figure #
8/19/2014	1627-02	2

From Bean Meadow Wetland Restoration Design Report  
Jim Wilcox, Plumas Corp. 5/27/2014

goal will involve the elimination of seven active head-cuts associated with the main channel of Bean Creek, its tributaries, and other remnant channels within the floodplain. This effort will result in the enhancement of up to 39 acres of the existing meadow by eliminating severe erosion within the Bean Creek floodplain, raising the elevation of the local water table, and the creation of emergent marsh and perennial ponds. The intended end result of the project will be the restoration of 39 acres of meadow to some semblance of its historic condition with a concomitant improvement to the physical and biotic functions and values associated with its wetland and riparian habitats. Successful implementation of the project will likely benefit native biodiversity within the Bean Creek Meadow itself and in the larger region as well.

### **1.1.1 Channel Treatments**

A pond and plug system of meadow restoration as described below and shown in Figure 3 will be utilized to achieve the project goals. This restoration technique eliminates the existing incised stream channel, redirecting flows into a stable replacement channel connected to a flood plain. The replacement channel is by design less susceptible to erosion, because it spreads flows over a much broader floodplain, thus reducing flow velocity and the erosive force of peak flows. The original incised channel is eliminated through the construction of a series of earthen plugs along the channel as shown in Figure 3. The fill for the earthen plugs is generated from the excavation of the stream channel banks immediately upstream of where the earthen plug is to be constructed. The “borrow pit” created from the excavation of material to be used for the plug becomes a pond. Hence the term “pond and plug.”

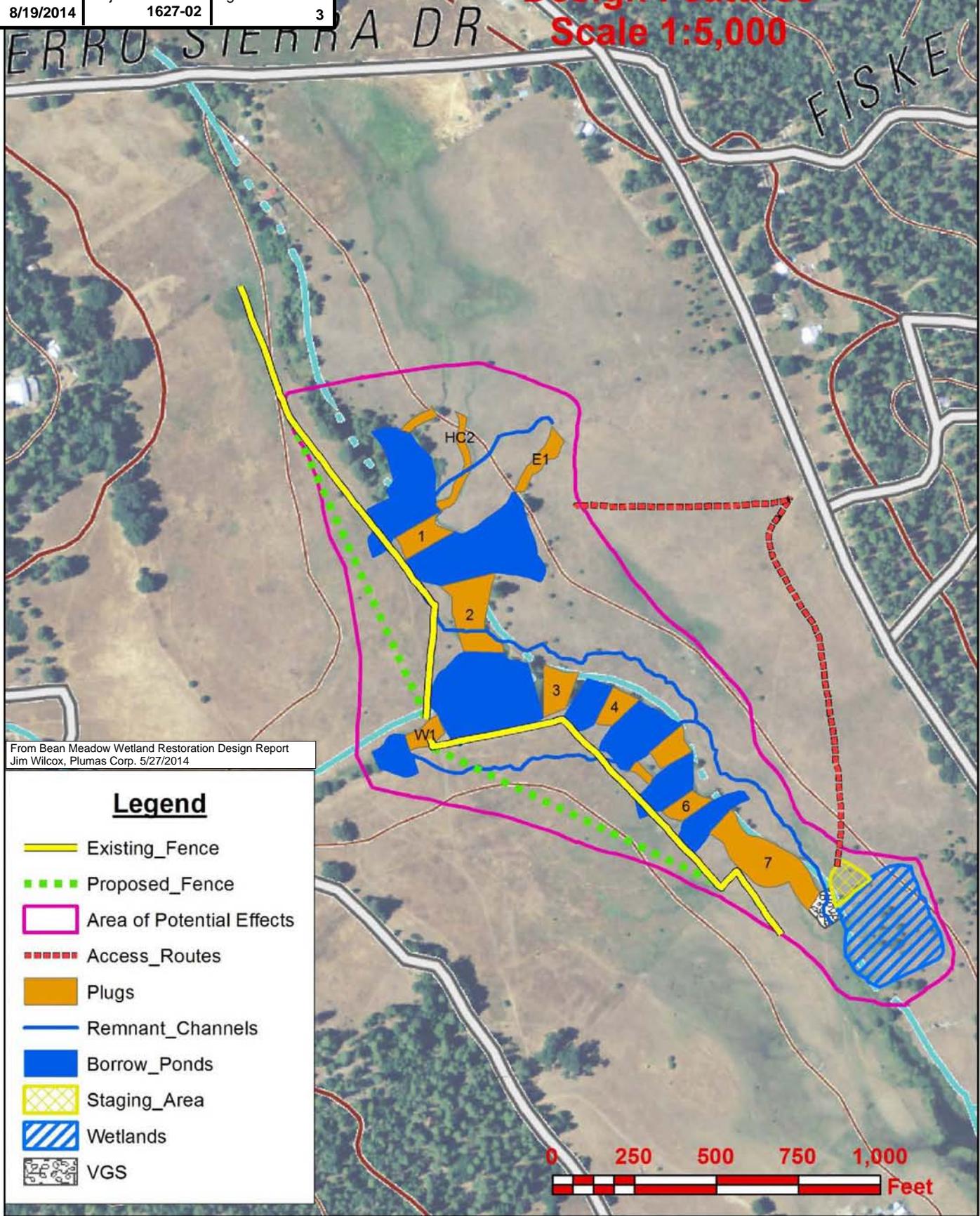
The proposed design for the Bean Creek Meadow Restoration Project entails this pond and plug meadow restoration system where through flow now occurring in the incised Bean Creek channel will occur in two ways: 1) normal high flows will enter a replacement channel connected to the floodplain and running roughly parallel to the existing channel; and 2) all plugs and borrow ponds are to be sited and configured to accommodate surface and subsurface through flow as well as adjacent hillslope-generated surface and groundwater inflows. The interval between plugs is set by elevation with a maximum 0.75 foot head differential from the downstream plug edge and the downstream pond water surface elevation. This reduces the risk



**Live Oak Associates, Inc.**  
**Bean Meadow Restoration B.E.**  
 Site Plan

Date	Project #	Figure #
8/19/2014	1627-02	3

**Bean Meadow Project**  
**Map 2**  
**Design Features**  
**Scale 1:5,000**



From Bean Meadow Wetland Restoration Design Report  
 Jim Wilcox, Plumas Corp. 5/27/2014

**Legend**

-  Existing\_Fence
-  Proposed\_Fence
-  Area of Potential Effects
-  Access\_Routes
-  Plugs
-  Remnant\_Channels
-  Borrow\_Ponds
-  Staging\_Area
-  Wetlands
-  VGS



March 9, 2015

of surface flows cutting through the plug during infrequent, short duration flood events. The downstream edges of the plugs will also be heavily planted with sedge mats recovered from the Bean Creek channel bottom prior to plug construction.

The borrow pond's principal function will be to provide native fill material for plug construction. This restoration project will require excavation and placement of approximately 40,000 cubic yards in nine plugs, including tributaries to eliminate the existing gullies as conduits for flow. As might be expected many trees have become established in the incised channel of Bean Creek such that excavation will result in their removal. Approximately 50 ponderosa pines (*Pinus ponderosa*) from 2 to 24 inches in stem diameter and 10 willows (*Salix sp.*) from 3 to 24 inches in stem diameter will be removed. All recoverable native vegetation from the fill and borrow sites will be transplanted to plug edges, surfaces and key locations on the remnant channel. Any trees not transplanted would be used structurally through the project or left as snag habitat. Since the ponds will fill with groundwater and maintain ponded water year-round, various habitat features will be incorporated into the design of the ponds. These include varying water depths, islands, peninsulas, basking logs, etc.

Soil excavated from borrow pits (that become ponds) will be used to create the nine plugs. Plugs are permeable earthen fill dams constructed perpendicular to the Bean Creek channel at irregular intervals designed to eliminate the existing degraded channel. Plugs will also include earthen fill deposited in gullies tributary to Bean Creek. Plugs will be constructed with wheel loader(s) to provide wheel compaction of the fill. The compaction levels are intended to match the porosity/transmissivity of the native meadow soils. This allows moisture to move freely within the plug soil profile and support erosion resistant meadow vegetation for long term durability as well as preventing preferential pathways for subsurface flows either in the plug or the native material adjacent to it.

Prior to any excavation required for plug construction, topsoil will be removed from all proposed excavation sites and stockpiled adjacent to the plug fill zone. The stockpiled topsoil will be used to top dress the completed plugs. When plug construction is completed, the plug surfaces will be ripped to a depth of 12 inches to facilitate rainfall infiltration and the recovered topsoil will be seeded with native seed.

March 9, 2015

A downstream terminal plug will have a rock and vegetation structure designed to armor the downstream end as both channel and floodplain flows transition to the exiting elevations. Cut material from the wetland excavation (described below) will be used to construct this terminal plug, totaling 17,600 cubic yards.

For this project, approximately 93 acre feet of runoff would initially be needed to refill the soils in the restored project. Subsequent years would only require sufficient inflow/precipitation to recharge the upper 1-2 feet of meadow soil drained during the previous dry season, approximately 15-20 acre feet or 0.02% of the basin yield. This would be negligible, and not impact downstream waters.

### **1.1.2 Wetland Creation**

In addition to the pond and plug treatment of the Bean Creek channel and tributaries, constructed wetlands will be created within the existing meadow floodplain (Figure 3). The primary wetland feature will be seasonal wet meadow, however an emergent wetland feature will also be incorporated to resemble a cutoff 'oxbow' channel with near perennial surface water. The overall grading footprint for this wetland will be 1.8 acres, resulting in a constructed seasonal wetland of 1.1 acres. The cut material from this excavation, totaling 17,600 cubic yards, will be used to construct the terminal plug described above. Sedge mats and tree willows recovered from the fill area will be transplanted to the excavated wetland to accelerate vegetative recovery and provide structural diversity.

### **1.1.3 Project Timing**

Restoration activities will take place in the fall, after the bird nesting season and before winter rains, at a time when Bean Creek will likely be dry. These activities are anticipated to require 30 construction days.

## **1.2 REPORT OBJECTIVES**

Restoration projects, while intended to restore and enhance biological resources, may also damage or modify biotic habitats used by sensitive plant and wildlife species. In such cases, the

project may be regulated by state or federal agencies, subject to provisions of the California Environmental Quality Act (CEQA), and/or covered by policies and ordinances of Mariposa County. This report addresses issues related to: 1) Sensitive biotic resources occurring on the project site; 2) The federal, state, and local laws regulating such resources; and 3) Mitigation measures that may be required to reduce the magnitude of anticipated impacts and/or comply with permit requirements of state and federal resource agencies. As such, the objectives of this report are to:

- Summarize all site-specific information related to existing biological resources.
- Make reasonable inferences about the biological resources that could occur onsite based on habitat suitability and the proximity of the site to a species' known range.
- Summarize all state and federal natural resource protection laws that may be relevant to possible future site development.
- Identify and discuss project impacts to biological resources likely to occur on the site within the context of CEQA or any state or federal laws.
- Identify avoidance and mitigation measures that would reduce impacts to a less-than-significant level (as identified by CEQA) and are generally consistent with recommendations of the resource agencies for affected biological resources.

### **1.3 STUDY METHODOLOGY**

The analysis of impacts, as discussed in Section 3.0 of this report, is based on the known and potential biotic resources of the project site discussed in Section 2.0. Sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFW 2014), (2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2014), and (3) manuals, reports, and references related to plants and animals of the Sierra Nevada Mountain region. A preliminary survey of the project site was conducted on December 23, 2010 by Live Oak Associates, Inc. (LOA) principal biologist Dave Hartesveldt. On April 26 and May 21 and 22, 2012, LOA biologists Wendy Fisher and Jeff Gurule conducted a biological resources investigation of the site. This survey consisted of a walk along all drainage channels and meandering walks through the meadow. During this time principal land uses of the site were identified and the constituent plants and animals were noted. Field surveys conducted for this

March 9, 2015

study were sufficient to assess the significance of possible biological impacts associated with the restoration plans for the project site.

## 2.0 EXISTING CONDITIONS

The Bean Creek Preserve, the location of the Bean Creek Meadow Restoration project site, is located in the Sierra Nevada foothills at an elevation averaging 3,200 feet National Geodetic Vertical Datum (NGVD). The topography of the site consists of relatively flat to gently rolling terrain punctuated by a few eroded channels that flow into the incised channel of Bean Creek. Bean Creek is a seasonal stream that flows through the meadow from northwest to southeast, emptying into a small reservoir at the south end of the preserve. Most of the site consisted of montane meadow. This habitat is typically associated with seasonally moist to waterlogged soils and the plant species composition and stability are largely dependent on the underlying hydrology.

Dry montane meadow was predominant on the Bean Creek Preserve, although portions of the meadow were saturated or inundated during the site survey. A long history of hay farming and heavy cattle grazing is thought to have contributed to the creation of erosional gullies and associated erosion of the Bean Creek channel. Increased soil compaction from grazing is thought to have reduced the water holding capacity of the meadow soils, which has increased runoff and channel incision, lowered the water table, and created drier conditions than historically occurred on the site. Surrounding lands consist of similar montane meadow, a small downstream reservoir at the south end of the preserve, and Sierran mixed conifer forest. Rural residential properties border the project site to the north and east.

Soils of Bean Creek and the wet portions of the meadow within the study area consist of loamy alluvial land. Loamy alluvial soils are well-drained to somewhat poorly drained soils of terraces and alluvial fans (USDA 1974). The remaining soils in uplands of the site are of the Josephine Family, deep to moderately deep complex, 5-35% slopes. Josephine soils are gravelly clay loams of residuum derived from metasedimentary rock that are well drained over bedrock (NRCS 2012).

The project site is located in a region of California having a Mediterranean climate. Summers are dry and warm with daytime temperatures commonly exceeding 90° Fahrenheit. Winters are rainy and cool with daytime temperatures rarely exceeding 60° Fahrenheit. Annual precipitation

March 9, 2015

in the general vicinity of the project site is highly variable from year to year with mean annual precipitation of approximately 33 inches, most of which falls between the months of October and June. Precipitation falls in the form of rain, hail, sleet, and snow with storm water infiltrating onsite soils until saturated and then as surface and subsurface flow to the Bean Creek drainage channels.

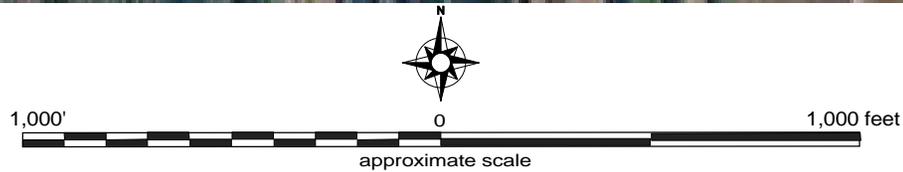
## **2.1 BIOTIC HABITATS/LAND USES**

Two biotic habitat types, montane meadow and the aquatic habitat associated with Bean Creek, were observed on the project site during the 2012 biological field surveys (see Figure 4). A list of the vascular plant species observed within the project site and the terrestrial vertebrates using, or potentially using, the site are provided in Appendices A and B, respectively. Photos of the project site can be found in Appendix C.

### **2.1.1 Montane Meadow**

A majority of the site consists of montane meadow. Some areas of the meadow where soils are saturated most of the year supported wetland vegetation such as green-sheathed sedge (*Carex feta*), clustered field sedge (*Carex praegracilis*), California hemp (*Hoita macrostachya*), Mexican rush (*Juncus mexicanus*), white meadowfoam (*Limnanthes alba* ssp. *versicolor*), and western blue flag (*Iris missouriensis*). Drier areas of the meadow contained upland and facultative grasses and forbs, the majority of which are not native to the Sierra Nevada. Dominant species included Kentucky bluegrass (*Poa pratensis*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), soft chess (*Bromus hordeaceus*), smooth cat's ear (*Hypochaeris glabra*), sheep sorrel (*Rumex acetosella*), and little hop clover (*Trifolium dubium*). Ponderosa pines (*Pinus ponderosa*) encroached upon the drier portions of the meadow. Some areas were infested with the invasive bull thistle (*Cirsium vulgare*).

Western garter snakes and gopher snakes may frequent these habitats along with Pacific tree frogs (*Pseudacris regilla*) and western toads (*Anaxyrus boreas*). Raptors hunt rodents and small birds in the open topography of the meadow often perching and nesting in the adjacent forests. Red-tailed hawks (*Buteo jamaicensis*) and Cooper's hawks (*Accipiter cooperii*) forage in these types of habitats. Insectivorous birds are often attracted to these habitats, fly-catching along



	<b>Live Oak Associates, Inc.</b>		
	<b>Bean Meadow Restoration B.E.</b> Biotic Habitats		
Date	Project #	Figure #	
8/19/2014	1627-02	4	

March 9, 2015

meadow edges or foraging along the ground. These would include dark-eyed junco (*Junco hyemalis*), western kingbird (*Tyrannus verticalis*), western bluebirds (*Sialia mexicana*), western meadowlark (*Sturnella neglecta*), and Canada geese (*Branta canadensis*).

Mammal species would also be expected in this habitat feeding on the abundant herbaceous growth or predating on other species attracted to the meadow. Various rodent species such as mountain meadow mice (*Microtus montanus*), pocket gophers (*Thomomys bottae*), California ground squirrels (*Spermophilus beecheyi*), and western harvest mouse (*Reithrodontomys megalotis*) would occur here, attracting predators including long-tailed weasel (*Mustela frenata*) and gray fox (*Urocyon cinereoargenteus*). Black bear (*Ursus americanus*) frequent these sorts of habitats feeding on the lush growth of sedges, berries, and small mammals. Mule deer (*Odocoileus hemionus*) would be common foragers in the meadow, as well.

Nocturnal mammals and birds can be found in meadows and surrounding forest edges. Owls such as northern saw-whet owls (*Aegolius acadicus*), northern pygmy owls (*Glaucidium gnoma*), and great-horned owls (*Bubo virginianus*) occur in trees near meadows and other forest openings. Several juvenile great-horned owls were observed during LOA's May 2012 field survey. A rarely seen bird, the great gray owl (*Strix nebulosa*), occurs in large meadows such as the Bean Creek Meadow, more often at higher elevations. Common nighthawks (*Chordeiles minor*) also forage for insects over montane meadows. Various species of bats also hunt insects in open meadows and over water.

### **2.1.2 Aquatic Habitats of Bean Creek**

Bean Creek is a meandering, eroded drainage that flows from the northwest to the southeast. Flows in the creek channel are perennial except in the driest years. In some areas the creek is lined with a mix of riparian and upland trees and shrubs. Red willow (*Salix laevigata*) was prolific within the lower banks of the channel. Ponderosa pine and occasional incense cedar (*Calocedrus decurrens*) lined the upper banks of the channel. Trees and shrubs were sparse to absent in other areas of the drainage. The entire length of the creek bed was vegetated with species tolerant of year round saturation, including clustered field sedge, Pacific rush (*Juncus effusus* ssp. *pacificus*), broad-leaf cattail (*Typha latifolia*), and horsetail (*Equisetum telmateia*

March 9, 2015

ssp. *braunii*). Deeper pools of Bean Creek included Nuttall's pondweed (*Potamogeton epihydrus* ssp. *nuttallii*). Drier portions of the creek bed included wood rose (*Rosa gymnocarpa*), wild rose (*Rosa woodsii*), Himalayan blackberry (*Rubus armeniacus*), and cutleaf blackberry (*Rubus laciniatus*).

Flows were continuous during all field surveys in April and May of 2012. The bed of Bean Creek consisted of a series of riffles and pools. Fine-grained sand and organic material helped to maintain the near vertical banks and supported the dense, clumpy wetland sedges and rushes that define much of the channel.

A number of native wildlife species are likely to occur in the Bean Creek corridor. Pacific tree frogs, western toads, and *Ensatina* (*Ensatina eschscholtzii*) are all likely to occur within and around Bean Creek. The presence of these amphibians and their offspring would attract reptiles such as western terrestrial garter snake (*Thamnophis elegans*) to forage here.

Many avian species would be attracted to the riparian habitat associated with the small stream due to a variety of insects (and other invertebrates). Pacific-slope flycatchers (*Empidonax difficilis*), western wood-pewee (*Contopus sordidulus*), Lincoln's sparrow (*Melospiza lincolnii*), and MacGillivray's warbler (*Geothlypis tolmiei*) would likely forage and nest in this habitat.

Many of the same mammal species occurring in the montane meadow would also occur within the habitats of Bean Creek. In addition, western gray squirrels (*Sciurus griseus*), raccoons (*Procyon lotor*), and western spotted skunks (*Spilogale gracilis*) may occur within this area. Several bat species may roost in trees associated with Bean Creek.

## **2.2 SPECIAL STATUS PLANTS AND ANIMALS**

Several species of plants and animals within the state of California have low populations and/or limited distributions. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and

March 9, 2015

animal species native to the state. A sizable number of native plants and animals have been formally designated as “threatened” or “endangered” under state and federal endangered species legislation. Others have been designated as candidates for such listing. Still others have been designated as “species of special concern” by the CDFW. The Stanislaus National Forest also maintained a list of “sensitive” plants and animals occurring or potentially occurring within its boundaries. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2014). Collectively, these plants and animals are referred to as “special status species.”

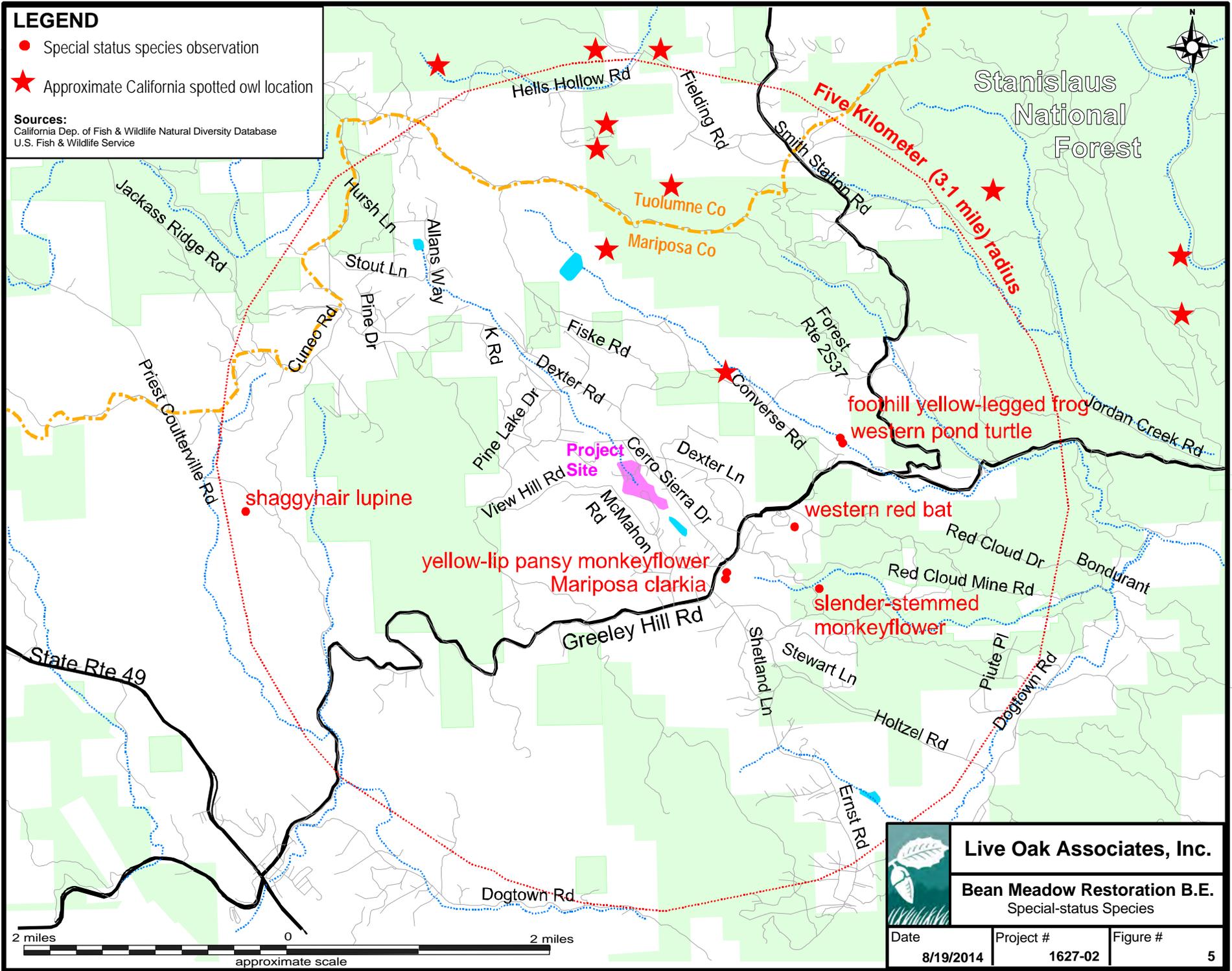
Recorded observations of special status species within a 3.1 mile radius on the project site are illustrated in Figure 5. Special status species, and their potential to occur on the project site, are listed in Table 1. Sources of information for this table include site specific botanical surveys conducted by Barry and Judy Breckling, avian point counts of the Bean Creek Preserve conducted by the Point Blue Conservation Science (PBCS), *California’s Wildlife, Volumes I, II, and III* (Zeiner et. al 1988-1990), *California Natural Diversity Data Base* (CDFW 2015), *Annual Report on the Status of California State Listed Threatened and Endangered Animals and Plants* (CDFW 2015), and *The California Native Plant Society’s Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2015). This information was used to evaluate the potential for special status plant and animal species to occur onsite. It is important to note that the California Natural Diversity Data Base (CNDDDB) is a volunteer database; therefore, it may not contain all known literature records.

A search of published accounts for all of the relevant special status plant and animal species was conducted for the Groveland USGS 7.5-minute quadrangle in which the project site occurs, and for the eight surrounding quadrangles (Coulterville, Moccasin, Standard, Tuolumne, Duckwall Mtn., Jawbone Ridge, Penon Blanco Peak, Buckhorn Peak,) using the CNDDDB Rarefind 2015.

**LEGEND**

- Special status species observation
- ★ Approximate California spotted owl location

**Sources:**  
 California Dep. of Fish & Wildlife Natural Diversity Database  
 U.S. Fish & Wildlife Service



**Live Oak Associates, Inc.**

**Bean Meadow Restoration B.E.**  
 Special-status Species

Date	Project #	Figure #
8/19/2014	1627-02	5

**TABLE 1. LIST OF SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING WITHIN THE VICINITY OF THE PROJECT SITE.**

PLANTS (adapted from CDFW 2015, CNPS 2015, Calflora 2015, Jepson Manual 2012)

*Plants listed as state or federally threatened or endangered*

Species	Status	Habitat/Range	*Occurrence in the Study Area
Layne’s Ragwort ( <i>Packera layneae</i> )	FT CR CNPS 1B.2	Occurs in serpentine or gabbroic rocky soils in early successional chaparral or cismontane woodland from the foothills of El Dorado, Yuba, and Tuolumne Counties between 660 – 3,280 ft in elevation. Blooms April – August.	<b>Absent.</b> Serpentine soils preferred by this species are absent from the project site. Individuals were not observed during spring surveys in 2012.

*Plants listed by CNPS and the U.S. Forest Service*

Jepson’s Onion ( <i>Allium jepsonii</i> )	CNPS 1B.2 FSS	This species has been observed in foothill woodland/ponderosa pine forest of the Sierra foothills from Tuolumne Co. north. To date, this species has not been observed in Mariposa Co.	<b>Unlikely.</b> Suitable habitat for this species in the form of foothill woodlands and ponderosa pine forest are absent from the Bean Creek Meadow. The site is south of this species’ known range. This species was not observed during spring surveys in 2012.
Three-bracted Onion ( <i>Allium tribracteatum</i> )	CNPS 1B.2 FSS	This species occurs typically at mid-elevations of the Sierra Nevada from Tuolumne Co. north in ponderosa pine, white fir and red fir forests.	<b>Unlikely.</b> Suitable habitat for this species in the form of conifer forest is absent from the Bean Creek Meadow. The site is south of this species’ known geographical range and below its known elevation range. This species was not observed during spring surveys in 2012.
Rawhide Hill Onion ( <i>Allium tuolumnense</i> )	CNPS 1B.2	Cismontane Woodland. Restricted to serpentine soil, usually in grey pine chaparral. Steep, rocky, south facing slopes or small drainages. 1,000 - 2,000 feet.	<b>Absent.</b> Serpentine soils preferred by this species are absent from the project site. No individuals were found during spring surveys of the site. Furthermore, the site is outside the elevation range of this species.
Yosemite Onion ( <i>Allium Yosemiteense</i> )	CNPS 1B.3 FSS	Occurs on open rocky slopes of the Sierra Nevada in Tuolumne and Mariposa Cos. between 2,600 and 7,200 feet in elevation. Habitats include chaparral, ponderosa pine forest, and mixed evergreen forest.	<b>Absent.</b> Habitat suitable for this species is absent from the Bean Creek Meadow. This species was not observed during spring surveys in 2012.
Nissanan Manzanita ( <i>Arctostaphylos nissenana</i> )	CNPS 1B.2 FSS	Occurs on open rocky shale ridges of the Sierra Nevada in Tuolumne Co. between 1,500 and 5,400 feet in elevation. Habitat for this species is limited to closed-cone pine forest.	<b>Absent.</b> Habitat suitable for this species is absent from the Bean Creek Meadow. This species was not observed during spring surveys in 2012.
Big-scale Balsamroot ( <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i> )	CNPS 1B.2 FSS	This species occurs in valley and foothill grassland, cismontane woodland, and westside ponderosa pine forest of the northern, central, and southern Sierra Nevada and its foothills below 5,000 ft.; often occurs in serpentine soils. Blooms March – June;	<b>Absent.</b> While habitat suitable for this species is present on the project site, it was not observed during spring field surveys conducted in 2012.

**TABLE 1. LIST OF SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING WITHIN THE VICINITY OF THE PROJECT SITE.**

PLANTS (adapted from CDFW 2015, CNPS 2015, Calflora 2015, Jepson Manual 2012)

*Plants listed by CNPS and the U.S. Forest Service*

Species	Status	Habitat/Range	*Occurrence in the Study Area
Scalloped Moonwort ( <i>Botrychium crenulatum</i> )	CNPS 2.2 FSS	This species occurs in meadows, freshwater marsh, bogs and fens of the Sierra, but mostly on its east side above 5,000 feet in elevation.	<b>Absent.</b> Bean Creek Meadow is outside of this species' known geographic and elevation range. This species was not observed during spring surveys in 2012.
Mingan Moonwort ( <i>Botrychium minganense</i> )	CNPS 2.2 FSS	This species occurs in meadows, open forest streams, and seeps of the Sierra, but mostly on its east side above 5,000 feet in elevation.	<b>Absent.</b> Bean Creek Meadow is outside of this species' known geographic and elevation range. This species was not observed during spring surveys in 2012.
Moosewort ( <i>Botrychium tunux</i> )	CNPS 2.1 FSS	Occurs in well-drained rocky meadows of Yosemite National Park above 11,000 feet in elevation.	<b>Absent.</b> Bean Creek Meadow is outside of this species' known geographic and elevation range. This species was not observed during spring surveys in 2012.
Giant Moonwort ( <i>Botrychium yaaxudakeit</i> )	CNPS 2.1 FSS	Occurs in moist alpine meadows of Yosemite National Park above 10,500 feet in elevation.	<b>Absent.</b> Bean Creek Meadow is outside of this species' known geographic and elevation range. This species was not observed during spring surveys in 2012.
Bolander's Bruchia ( <i>Bruchia bolanderi</i> )	CNPS 2.2 FSS	Damp soil of lower and upper montane coniferous forests, as well as meadows and seeps, above 5,000 feet of Central Sierra..	<b>Absent.</b> Bean Creek Meadow is outside of this species' known elevation range. This species was not observed during spring surveys in 2012.
Pleasant Valley Mariposa Lily ( <i>Calochortus clavatus</i> var. <i>avius</i> )	CNPS 1B.2 FSS	Occurs in open oak/pine forest of Sierra from 3,000 to 5,900 feet; primarily in El Dorado and Amador Cos.	<b>Absent.</b> Bean Creek Meadow appears to be outside of the geographic range of this species; habitats of the site are also not suitable for this species. This species was not observed during spring surveys in 2012.
Small's Southern Clarkia ( <i>Clarkia australis</i> )	CNPS 1B.2 FSS	Dry forest openings and rocky outcrops, mixed conifer forest, central Sierra Nevada between 2,624 – 6,807 ft. in elevation. Blooms June – July.	<b>Absent.</b> Serpentine soils preferred by this species are absent from the project site. No individuals were found during spring surveys of the site. Furthermore, the site is outside the elevation range of this species. This species was not observed during spring surveys in 2012.
Mariposa Clarkia ( <i>Clarkia biloba</i> ssp. <i>australis</i> )	CNPS 1B.2 FSS	Occurs in serpentine soils of chaparral and cismontane woodland between 984 – 3,231 ft. in elevation from El Dorado, Mariposa, and Tuolumne Cos. Blooms May – July.	<b>Absent.</b> Serpentine soils preferred by this species are absent from the project site. No individuals were found during spring surveys of the site. Furthermore, the site is outside the elevation range of this species.
Merced Clarkia ( <i>Clarkia lingulata</i> )	CNPS 1B.1 FSS	Is known from steep north-facing slopes of Sierra Foothills in chaparral at elevations of 1,300 to 1,500 feet in elevation.	<b>Absent.</b> Habitat suitable for this species is absent from the Bean Creek Meadow. The meadow is also above the elevation range of this species. This species was not observed during spring surveys in 2012.
Beaked Clarkia ( <i>Clarkia rostrate</i> )	CNPS 1B.3	Cismontane woodland, valley and foothill grassland. North-facing slopes; sometimes on sandstone; occurs at 200-1,640 feet in elevation.	<b>Absent.</b> The site is outside the elevation range of this species. This species was not observed during spring surveys in 2012.

**TABLE 1. LIST OF SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING WITHIN THE VICINITY OF THE PROJECT SITE.**

PLANTS (adapted from CDFW 2015, CNPS 2015, Calflora 2015, Jepson Manual 2012)

Plants listed by CNPS and the U.S. Forest Service

Species	Status	Habitat/Range	*Occurrence in the Study Area
Mariposa Cryptantha ( <i>Cryptantha mariposae</i> )	CNPS 1B.3	Chaparral. On serpentine outcrops. 700-2,100 feet in elevation..	<b>Absent.</b> Serpentine soils do not occur on the site. Furthermore, the site is above the known elevation for this species. This species was not observed during spring surveys in 2012.
Mountain Ladyslipper ( <i>Cypripedium montanum</i> )	CNPS 4.2 FSS	Occurs in Sierra Nevada Range from 650 to 7,200 feet in elevation in mixed evergreen or conifer forest. Several occurrences have been recorded in Yosemite National Park.	<b>Unlikely.</b> Although the Bean Creek Meadow and riparian habitat along Bean Creek provide potential habitat for this species, it was not observed during spring surveys conducted in 2012.
Branched Collybia ( <i>Dendrocollybia racemosa</i> )	FSS	Occurs in older mixed conifer forest of the Sierra Nevada.	<b>Unlikely.</b> While leaf litter/duff under oaks and conifers provides potential habitat for this species, it was not observed during extensive field surveys conducted in the spring of 2012.
Tahoe Draba ( <i>Draba asterophora</i> var. <i>asterophora</i> )	CNPS 1B.2 FSS	Occurs in sub-alpine forest and alpine fell-fields of the Sierra Nevada at elevations above 9,000 feet.	<b>Absent.</b> Bean Creek Meadow is outside the geographical and elevation range of this species. This species was not observed during spring surveys in 2012.
Jack's Buckwheat ( <i>Eriogonum luteolum</i> var. <i>saltuarium</i> )	CNPS 1B.2 FSS	Occurs in the Sierra Nevada in decomposed granite at elevations of 5,600 to 7,900 feet. This species is known from only Alpine and Tuolumne Counties.	<b>Absent.</b> Bean Creek Meadow is outside the geographical and elevation range of this species. This species was not observed during spring surveys in 2012.
Congdon's Woolly Sunflower ( <i>Eriophyllum congdonii</i> )	CNPS 1B.2 FSS	Typically occurs on dry rocky slopes in chaparral, foothill woodland, and ponderosa pine forest of central Sierra foothills in Mariposa Co. at elevations of 1,600 to 6,200 feet.	<b>Absent.</b> Bean Creek Meadow does not provide habitat suitable for this species. This species was not observed during spring surveys in 2012.
Yosemite Woolly Sunflower ( <i>Eriophyllum nubigenum</i> )	CNPS 1B.3 FSS	Typically occurs in open gravelly or rocky lodgepole pine or red fir forest of central Sierra foothills in Mariposa Co. at elevations of 5,900 to 8,200 feet.	<b>Absent.</b> Bean Creek Meadow is outside of this species' known geographic and elevation range. This species was not observed during spring surveys in 2012.
Tuolumne Button Celery ( <i>Eryngium pinnatisectum</i> )	CNPS 1B.2	Occurs in vernal pools and mesic sites in lower montane coniferous forest and cismontane woodland in Amador, Calaveras, Sacramento, Sonoma and Tuolumne Counties: occurs between 229 – 3,001 ft. in elevation.	<b>Absent.</b> The site is outside of the elevational and geographical range of this species to occur on the site. No species of <i>Eryngium</i> was observed during LOA surveys of the site.
Taylor's Fawn lily ( <i>Erythronium taylorii</i> )	CNPS 1B.2 FSS	Occurs in forest openings and rocky ledges at 4,300 to 4,600 feet in elevation in Tuolumne Co. of central Sierra Nevada.	<b>Absent.</b> Bean Creek Meadow is outside of this species' known geographic and elevation range. This species was not observed during spring surveys in 2012.

**TABLE 1. LIST OF SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING WITHIN THE VICINITY OF THE PROJECT SITE.**

PLANTS (adapted from CDFW 2015, CNPS 2015, Calflora 2015, Jepson Manual 2012)

Plants listed by CNPS and USFS

Species	Status	Habitat/Range	*Occurrence in the Study Area
Tuolumne Fawn Lily ( <i>Erythronium tuolummense</i> )	CNPS 1B.2 FSS	Broadleaved upland forest, chaparral, lower montane coniferous forest. Often on clay soils; on cliffs and near drainages; occurs between 2,000-4,800 feet in elevation.	<b>Absent.</b> Suitable habitats for this species are absent. This species was not observed during surveys conducted in the spring of 2012.
Parry's Horkelia ( <i>Horkelia parryi</i> )	CNPS 1B.2 FSS	Occurs in Ione formation and other soils of chaparral and cismontane woodland of Amador, Calaveras, El Dorado, and Mariposa Counties between 262 – 3,395 ft. in elevation. Blooms April – Sept.	<b>Absent.</b> Soils of the Ione formation do not occur on the site. Suitable habitat is absent from the site. This species was not observed during surveys conducted in the spring of 2012.
Short-leaved Hulsea ( <i>Hulsea brevifolia</i> )	CNPS 1B.2 FSS	Occurs in gravelly soils of montane forests of the Sierra Nevada at elevations of 4,900 to 8,800 feet.	<b>Absent.</b> Bean Creek Meadow is outside of this species' known geographic and elevation range. This species was not observed during spring surveys in 2012.
Tuolumne Iris ( <i>Iris hartwegii</i> ssp. <i>columbiana</i> )	CNPS 1B.2 FSS	Occurs on dry slopes supporting oak woodland of the Sierra Nevada at elevations of 1,800 to 4,600 feet. To date, this species is only known from Tuolumne Co.	<b>Unlikely.</b> Bean Creek Meadow appears to be outside of the known geographical range of this species. This species was not observed during spring surveys in 2012.
Congdon's Bitterroot ( <i>Lewisia congdonii</i> )	CNPS 1B.3 FSS	Occurs in granitic and metamorphic outcrops, crevices, and rock slides of the central Sierra Nevada supporting chaparral, woodland, and conifer forest at elevations between 1,600 and 9,000 feet.	<b>Absent.</b> Bean Creek Meadow does not provide suitable habitat for this species. This species was not observed during spring surveys in 2012.
Hutchison's Lewisia ( <i>Lewisia kelloggii</i> ssp. <i>hutchisonii</i> )	CNPS 3.3 FSS	Occurs in decomposed granite, slate, volcanic rubble of mid-elevation conifer forest in northern Sierra Nevada, from Calaveras Co. north.	<b>Absent.</b> Bean Creek Meadow appears to be outside of the known geographical range of this species. This species was not observed during spring surveys in 2012.
Kellogg's Lewisia ( <i>Lewisia kelloggii</i> ssp. <i>kelloggii</i> )	FSS	Occurs in decomposed granite, volcanic ash of mid-elevation conifer forest in northern Sierra Nevada, from Calaveras Co. north.	<b>Absent.</b> Bean Creek Meadow appears to be outside of the known geographical range of this species. This species was not observed during spring surveys in 2012.
Congdon's Lomatium ( <i>Lomatium congdonii</i> )	CNPS 1B	Occurs on serpentine soils of chaparral and cismontane woodland between 1,000-6,900 feet in elevation; known from fewer than 20 occurrences; blooms March – June.	<b>Absent.</b> Serpentine soils preferred by this species are absent from the project site This species was not observed during spring surveys in 2012.
Stebbin's Lomatium ( <i>Lomatium stebbinsi</i> )	CNPS 1B.1 FSS	Occurs in gravelly volcanic soil of the central Sierra in ponderosa pine/mixed conifer forest between 4,100 and 5,600 feet in elevation. This species is known from Calaveras and Tuolumne Cos.	<b>Absent.</b> Bean Creek Meadow is outside the geographical and elevation range of this species. This species was not observed during spring surveys in 2012.
Shaggyhair Lupine ( <i>Lupinus spectabilis</i> )	CNPS 1B.2	Occurs in serpentine soils of chaparral and cismontane woodland of Mariposa and Tuolumne Counties between 853 – 2,706 ft. in elevation. Bloom April – May.	<b>Absent.</b> Serpentine soils are absent from the project site. The site is too high in elevation for this species to occur. This species was not observed during surveys conducted in the spring of 2012.

**TABLE 1. LIST OF SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING WITHIN THE VICINITY OF THE PROJECT SITE.**

PLANTS (adapted from CDFW 2015, CNPS 2015, Calflora 2015, Jepson Manual 2012)

*Plants listed by CNPS and USFS*

Species	Status	Habitat/Range	*Occurrence in the Study Area
Broad-nerved Hump-moss ( <i>Meesia uliginosa</i> )	CNPS 2.2 FSS	Occurs in montane fens found in red fir forests of northern and southern Sierra Nevada between 6,200 and 7,500 feet in elevation. Not known from central Sierra.	<b>Absent.</b> Bean Creek Meadow is outside the known geographical and elevation range of this species. This species was not observed during spring surveys in 2012.
Elongate Copper-moss ( <i>Mielichhoferia elongata</i> )	CNPS 2.2 FSS	Mostly occurs on seasonally wet metamorphic rocks with high concentrations of heavy metal ores, especially copper. One occurrence is known in Mariposa Co. near El Portal.	<b>Absent.</b> Rocky substrate suitable for this species is absent from the Bean Creek Meadow. This species was not observed during spring surveys in 2012.
Slender-Stemmed Monkeyflower ( <i>Mimulus filicaulis</i> )	CNPS 1B.2 FSS	Moist, sandy and gravelly areas of chaparral/oak woodland and mixed conifer zones of Mariposa and Tuolumne Cos. between 2,952 – 5,741 ft. in elevation. Blooms April - August.	<b>Unlikely.</b> Habitats required by this species are absent to marginal on the project site. This species was not observed during surveys conducted in the spring of 2012.
Yellow-lip Pansy Monkeyflower ( <i>Mimulus pulchellus</i> )	CNPS 1B.2 FSS	Moist meadows and vernal moist open sandy benches and depressions of central Sierra between 1,968 – 6,561 ft. in elevation. Blooms May – July.	<b>Present.</b> This species was documented on bare ground within moist meadow habitat throughout the project site by botanists Barry and Judy Breckling.
Brownish Beaked-Rush ( <i>Rhynchospora capitellata</i> )	CNPS 2B.2	Lower montane coniferous forest, meadows and seeps, Marshes and swamps, upper montane coniferous forest. Mesic sites; occurs between 150 and 6,560 feet in elevation.	<b>Unlikely.</b> The project site provides suitable habitat for this species, but this species was not observed during surveys conducted in the spring of 2012.
Red Hills Ragwort ( <i>Senecio clelandii</i> var. <i>heterophyllus</i> )	CNPS 1B.2	Cismontane woodland. Drying serpentine soils; often along streams; occurs between 850-1,300 feet in elevation.	<b>Absent.</b> The project site is above the elevational range of this species and serpentine soils are absent. This species was not observed during surveys conducted in the spring of 2012.

ANIMALS (adapted from CDFW 2015 and USFWS 2015)

*Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act*

Species	Status	Habitat	*Occurrence on the Project Site
Valley Elderberry Longhorn Beetle ( <i>Desmocerus californicus dimorphus</i> )	FT	Mature elderberry shrubs of California's Central Valley and Sierra Foothills up to 3,000 ft in elevation.	<b>Absent.</b> Elderberry shrubs, the obligate habitat required by this species, are absent from the project site and surrounding lands. Furthermore, the site is above the elevational range of this species.
Mountain Yellow-legged Frog ( <i>Rana muscosa</i> )	CSC, FC	High mountain lakes and streams generally from 5,000 to 12,000 feet in elevation. Vulnerable to predation by introduced trout.	<b>Absent.</b> The study area is below the elevational range of this species. In addition, the seasonal drainage does not provide suitable habitat for this species.

**TABLE 1. LIST OF SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING WITHIN THE VICINITY OF THE PROJECT SITE.**

**ANIMALS (adapted from CDFW 2015 and USFWS 2015)**

*Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act*

Limestone Salamander ( <i>Hydromantes brunus</i> )	CT FSS	Restricted to limestone out-crops in foothill pine/chaparral belt on the Merced River and its tributaries from 800-2,600 ft. in elevation. Calif. buckeye is an indicator of optimal habitat.	<b>Absent.</b> Limestone out-crops are not present within the project site, and the site is above the typical range of this species.
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	CE FSS	Nests and winters on ocean shores, lake margins and rivers. Uses old-growth snags. Mostly forages over water and along shores.	<b>Possible.</b> Bald eagles sometimes hunt waterfowl near small Sierra foothill reservoirs such as the one located on Bean Creek at the south end of the property.
Great gray owl ( <i>Strix nebulosa</i> )	CE FSS	Nests in mixed conifer or red fir forests; requires a cool, sub-canopy micro-climate. Forages along edge of meadows generally above 3,000 feet in elevation.	<b>Present.</b> This species has been documented within the Bean Creek Meadow (Joseph Medley, Great Gray Owl Researcher, pers. com.). Nesting is not known to occur, but the meadow provides foraging habitat for this species.
Willow Flycatcher ( <i>Empidonax traillii ssp. brewsteri</i> )	CE FSS	Breeds in willow thickets found in montane meadows of the Sierra Nevada.	<b>Possible.</b> Potential breeding habitat is available on the site. If not breeding on the site this species may forage on the site during migration movements.
Sierra Nevada Red Fox ( <i>Vulpes vulpes ssp. necator</i> )	CT FSS	Occurs at high elevations of the Sierra Nevada in a variety of habitats from wet meadows to forested areas. Uses dense vegetation and rocky areas for cover and denning.	<b>Absent.</b> This species occurs at higher elevations than are found at the project site.
North American Wolverine ( <i>Gulo gulo</i> )	CT FSS	Occurs at high elevations of the Sierra Nevada in a variety of habitats. All four observations of this species in County occurred more than 60 years ago at elevations of 7,000 feet or higher.	<b>Absent.</b> Bean Creek Meadow is well outside of the range of the North American Wolverine.

*State Species of Special Concern and U.S. Forest Service Sensitive Species*

Hardhead ( <i>Mylopharadon conocephalus</i> )	FSS	Found in small to large streams in low to mid-elevations of the Sierra foothills.	<b>Unlikely.</b> Bean Creek is not a perennial creek during dry years. Thus, habitat suitable for this species periodically disappears.
San Joaquin roach ( <i>Lavinia symmetricus</i> )	CSC	Found throughout the San Joaquin River drainage. Tolerant of relatively high temperatures and also found in cold streams, heavily modified habitats and main channels of rivers.	<b>Unlikely.</b> Bean Creek is not a perennial creek during dry years. Thus, habitat suitable for this species periodically disappears.

**TABLE 1. LIST OF SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING WITHIN THE VICINITY OF THE PROJECT SITE.**

**ANIMALS (adapted from CDFW 2015 and USFWS 2015)**

*State Species of Special Concern and U.S. Forest Service Sensitive Species*

<b>Species</b>	<b>Status</b>	<b>Habitat</b>	<b>*Occurrence on the Project Site</b>
Foothill Yellow-legged Frog ( <i>Rana boylei</i> )	CSC FSS	Once widespread in fast-moving rivers and creeks of the Sierra foothills with cobble bottoms; now nearly extirpated from the Sierra.	<b>Unlikely.</b> During dry years, Bean Creek lacks the perennial flows required by this species. Cobble channel beds required by this species are also absent.
Western Pond Turtle ( <i>Emys marmorata</i> )	CSC FSS	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites of sandy banks or grassy open fields for egg laying.	<b>Possible.</b> This species may inhabit a nearby stock pond and occasionally wander onto the project site for nesting or dispersal.
Northern Goshawk ( <i>Accipiter gentilis</i> )	CSC FSS	Prefers dense coniferous forest of the Sierra Nevada, usually above 5,000 feet in elevation; nests in the crooks of large coniferous or occasionally deciduous trees, usually on north slopes.	<b>Possible.</b> This species generally does not occur at elevations as low as those of the project site. However, individuals could occasionally forage on the site.
Golden Eagle ( <i>Aquila chrysaetos</i> )	CSC	Typically frequents rolling foothills, mountain areas, sage-juniper flats and desert.	<b>Possible.</b> The site provides possible foraging habitat. Nesting habitat is at best marginal.
California Spotted Owl ( <i>Strix occidentalis occidentalis</i> )	CSC FSS	Breeds in oak and ponderosa pine forests upslope to lower-elevation red fir forests (up to elevations of 7,600 feet), with mixed conifer the optimum type. Presence of California black oak in the forest canopy also enhances habitat suitability.	<b>Possible.</b> Potential foraging habitat occurs on the site. Nesting habitat on the site would be marginal, at best, for the California spotted owl due to sparse forest cover. This species is not expected to nest on-site.
Burrowing Owl ( <i>Athene cunicularia</i> )	CSC	Frequents open, dry annual or perennial grasslands, deserts, and scrublands characterized by low growing vegetation. Dependent upon burrowing mammals, most notably the California ground squirrel, for nest burrows.	<b>Absent.</b> Suitable habitat for this species is absent. This species does not occur at elevations this high in the Sierra Nevada.
Yellow Warbler ( <i>Dendroica petechia brewsteri</i> )	CSC	Migrants move through many habitats of Sierra and its foothills; breeds in riparian thickets of alder, willow and cottonwoods, up to 6,500 feet on the west slope of the Sierra's.	<b>Possible.</b> Though generally preferring denser riparian habitat than available on the project site, breeding and foraging habitat for this species is available.
Fringed Myotis ( <i>Myotis thysanodes</i> )	FSS	Occurs in montane mixed deciduous/conifer forests and meadows of the Sierra Nevada. Roosts in caves, mines, buildings, rock crevices.	<b>Possible.</b> This species may forage over the meadow. Roosting opportunities are absent.

**TABLE 1. LIST OF SPECIAL STATUS PLANT SPECIES POTENTIALLY OCCURRING WITHIN THE VICINITY OF THE PROJECT SITE.**

**ANIMALS (adapted from CDFW 2015 and USFWS 2015)**

*State Species of Special Concern and U.S. Forest Service Sensitive Species*

Species	Status	Habitat	*Occurrence on the Project Site
Spotted Bat ( <i>Euderma maculatum</i> )	CSC	Found in a variety of habitats from arid desert and grassland to high elevation mixed conifer and riparian forest; roosts in rock crevices.	<b>Possible.</b> The study area provides suitable foraging habitat. Suitable roost sites are absent.
Townsend’s Big-eared Bat ( <i>Corynorhinus townsendii</i> ssp. <i>townsendii</i> )	CSC FSS	Primarily a cave-dwelling bat, which may also roost in buildings. Occurs in a variety of habitats of the state.	<b>Possible.</b> The study area provides suitable foraging habitat. Suitable roost sites are absent.
Western Red Bat ( <i>Lasiurus blossevillei</i> )	CSC	Roosts in trees or shrubs along edge habitats of streams and open fields, orchards, and urban areas.	<b>Possible.</b> Suitable foraging and roosting habitat is present on the project site.
Western Mastiff Bat ( <i>Eumops perotis</i> ssp. <i>californicus</i> )	CSC	Primarily a cave-dwelling bat, which may also roost in buildings; occurs in a variety of habitats.	<b>Possible.</b> The study area provides suitable foraging habitat. Suitable roost sites are absent.
Pallid Bat ( <i>Antrozous pallidus</i> )	CSC FSS	Grasslands, chaparral, woodlands, and forests of Calif.; most common in dry rocky open areas. Roost habitats include mines, caves, crevices, hollow trees and buildings.	<b>Possible.</b> Suitable foraging and roosting habitat is present on the project site.
Pacific Martin ( <i>Martes caurina</i> )	FSS	Occurs in conifer forests of the Sierra Nevada above 4,000 feet.	<b>Unlikely.</b> While scattered conifers occur along Bean Creek, conifer forests are absent from the site. Furthermore, the site appears to be below the elevation range of this species.

**\*Explanation of Occurrence Designations and Status Codes**

- Present: Species observed on the sites at time of field surveys or during recent past.
- Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
- Possible: Species not observed on the sites, but it could occur there from time to time.
- Unlikely: Species not observed on the sites, and would not be expected to occur there except, perhaps, as a transient.
- Absent: Species not observed on the sites, and precluded from occurring there because habitat requirements not met.

**STATUS CODES**

- |     |                                 |     |                                       |
|-----|---------------------------------|-----|---------------------------------------|
| FE  | Federally Endangered            | CE  | California Endangered                 |
| FT  | Federally Threatened            | CT  | California Threatened                 |
| FPE | Federally Endangered (Proposed) | CR  | California Rare                       |
| FC  | Federal Candidate               | CP  | California Protected                  |
| FSS | Forest Service Sensitive        | CSC | California Species of Special Concern |
- 
- |      |   |   |   |
|------|---|---|---|
| CNPS | California Native Plant Society Listing   |   |   |
| 1A   | Plants Presumed Extinct in California   | 3 | Plants about which we need more information – a review list |
| 1B   | Plants Rare, Threatened, or Endangered in California and elsewhere              | 4 | Plants of limited distribution – a watch list               |
| 2    | Plants Rare, Threatened, or Endangered in California, but more common elsewhere |   |   |

## **2.3 JURISDICTIONAL WATERS**

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, wetlands, and in some cases irrigation canals. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), the CDFW, and the California Regional Water Quality Control Board (RWQCB). See Section 3.2.4 of this report for additional information.

The USACE has verified 14.63 acres of waters of the U.S. on the Bean Creek Preserve in a Preliminary Jurisdictional Determination letter dated August 24, 2012. Of this verified acreage, approximately 8.5 acres of waters of the U.S. are located on the Bean Creek Meadow Restoration project site. These include approximately 0.5 acre of wetland channel, 3.0 acres of wetland swale, 0.01 acre of non-wetland channel, and 5.0 acres of Bean Creek. The verified delineation map of the Bean Creek Preserve is presented in Figure 6.

# LEGEND

 Project Boundary

## Areas meeting the technical criteria of Jurisdictional

 Wetland Channel (0.70 ac.)

 Bean Creek (5.50 ac.)

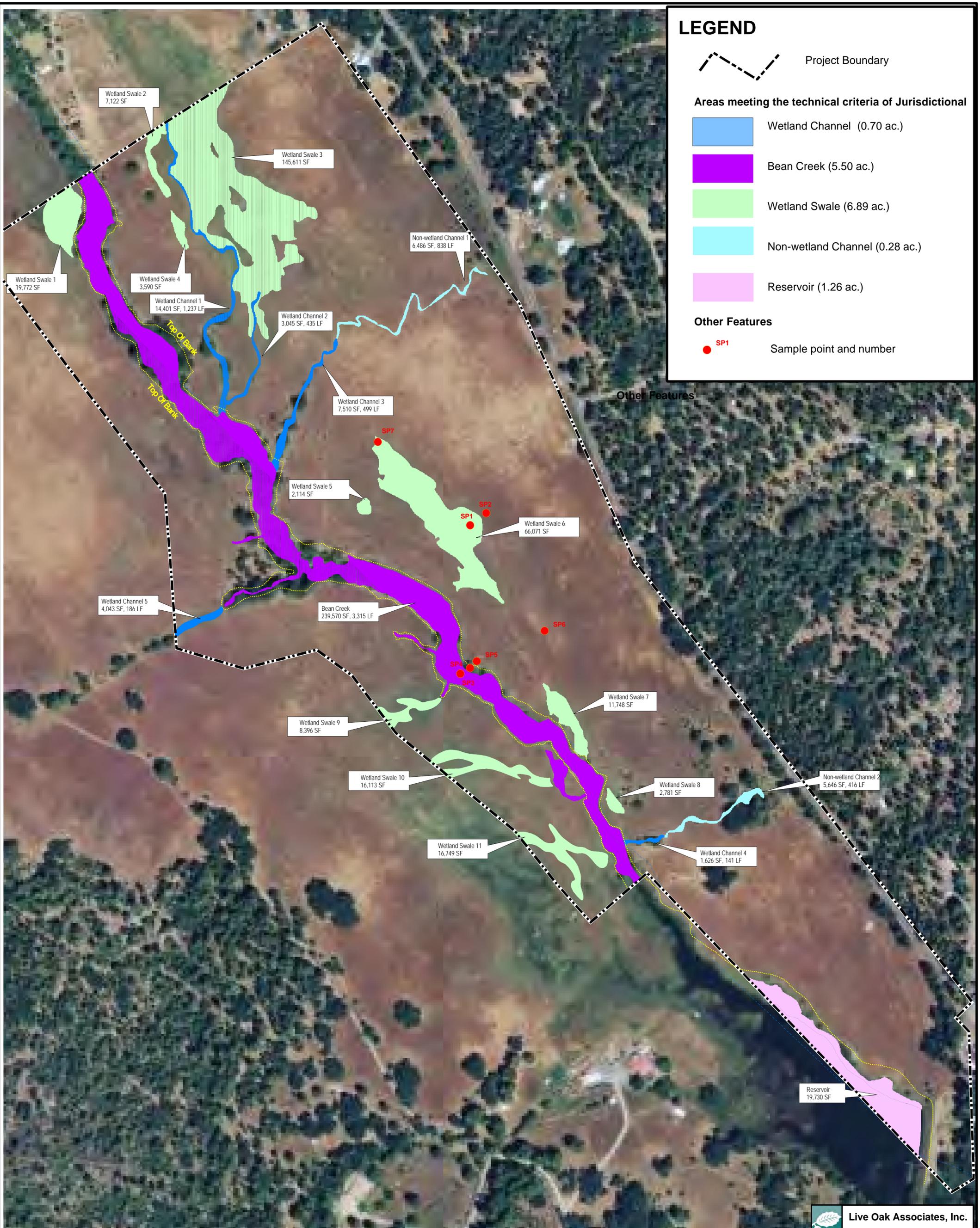
 Wetland Swale (6.89 ac.)

 Non-wetland Channel (0.28 ac.)

 Reservoir (1.26 ac.)

## Other Features

 SP1 Sample point and number



Other Features

500' 0 500 feet  
Approximate Scale



 <b>Live Oak Associates, Inc.</b>		
<b>Bean Meadow Restoration</b> Waters of the U.S.		
Date	Project #	Figure #
6/25/2012	1627-02	6

### **3.0 IMPACTS AND MITIGATIONS**

#### **3.1 SIGNIFICANCE CRITERIA**

Approval of general plans, area plans, and specific projects is subject to the provisions of CEQA. The purpose of CEQA is to assess the impacts of proposed projects on the environment before they are carried out. CEQA is concerned with the significance of a proposed project's impacts. For example, a proposed development project may require the removal of some or all of a site's existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, etc., may replace those species formerly occurring on the site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed.

Whenever possible, public agencies are required to avoid or minimize environmental impacts by implementing practical alternatives or mitigation measures. According to Section 15382 of the CEQA Guidelines, a significant effect on the environment means a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest."

Specific project impacts to biological resources may be considered "significant" if they would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065(a) states that a project may trigger the requirement to make “mandatory findings of significance” if the project has the potential to:

“Substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory.”

### **3.2 RELEVANT GOALS, POLICIES, AND LAWS**

#### **3.2.1 Special Status Species**

As discussed, state and federal “endangered species” legislation has provided the CDFW and the USFWS with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Permits may be required from the CDFW and USFWS if activities associated with a proposed project will result in the “take” of a species listed as threatened or endangered under the state and/or federal endangered species acts. “Take” is defined by the state of California as “to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill” (California Fish and Game Code, Section 86). “Take” is more broadly defined by the federal Endangered Species Act to include “harm” (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFW and the USFWS are responding agencies under CEQA. Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

Other special status species addressed in this document include California Species of Special Concern, U.S. Forest Service Sensitive Species, and plant species listed as threatened, endangered and/or rare by the California Native Plant Society (CNPS). Such species are not protected by state or federal law, but the significance of impacts to them are often evaluated per the provisions of CEQA.

### **3.2.2 Migratory Birds**

State and federal laws also protect most birds. The Federal Migratory Bird Treaty Act (16 U.S.C. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

### **3.2.3 Birds of Prey**

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5, which states that it is “unlawful to take, possess, or destroy any birds in the order *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “taking” by the CDFW.

### **3.2.4 Wetlands and Other Jurisdictional Waters**

Natural drainage channels and adjacent wetlands may be considered “Waters of the United States” (hereafter referred to as “jurisdictional waters”) subject to the jurisdiction of the USACE. The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
- All interstate waters including interstate wetlands.

March 9, 2015

- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce.
- All impoundments of waters otherwise defined as waters of the United States under the definition.
- Tributaries of waters identified in the bulleted items above.

As determined by the United States Supreme Court in its 2001 *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC) decision, channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. Similarly, in its 2006 consolidated *Carabell/Rapanos* decision, the U.S. Supreme Court ruled that a significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered a navigable and therefore jurisdictional water.

The USACE regulates the filling or grading of jurisdictional waters under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by “ordinary high water marks” on opposing channel banks. All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the RWQCB issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards.

The filling of isolated wetlands, over which the USACE has disclaimed jurisdiction, is regulated by the RWQCB. It is unlawful to fill isolated wetlands without filing a Notice of Intent with the RWQCB. The RWQCB is also responsible for enforcing National Pollution Discharge Elimination System (NPDES) permits, including the General Construction Activity Storm Water Permit. All projects requiring federal money must also comply with Executive Order 11990 (Protection of Wetlands).

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code (2003). Activities that would disturb these waters are regulated by the CDFW via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented which protect the habitat values of the drainage in question.

### **3.3 POTENTIALLY SIGNIFICANT PROJECT IMPACTS/MITIGATION**

The project considered in this evaluation of impacts to biological resources is the restoration of Bean Creek Meadow as described in Section 1.1. The following subsections assume that the proposed project will have a net benefit to native flora and fauna of the area. However, implementation of the plan has the potential to temporarily or permanently affect individuals of some special status species. Therefore, potentially significant project impacts to biological resources are assessed and mitigations are presented in the following sub-sections.

#### **3.3.1 Impacts to Special Status Roosting Bats**

**Impact.** Two special status bat species, pallid and western bats, will potentially be affected by project implementation. The pallid bat roosts communally in cavities of buildings or trees. The western red bat roosts solitarily in tree foliage. Project related tree removal could result in mortality of roosting bats. Due to the solitary nature of the western red bat, project activities would, at most, result in the incidental death or injury of only a few individual bats should they occur in trees that are to be removed. Therefore, impacts to the western red bat are considered less than significant. Since the pallid bat can roost communally in hollows of trees, this species may be significantly impacted should tree removal occur during the maternal roosting season (June 1st through September 31st), when young are unable to fly and are dependent on their mothers. Should tree removal occur during the maternal roosting season, the destruction of a maternal roost could result the mortality of hundreds of juvenile pallid bats and have a significant effect on the regional population of this species.

**Mitigation.** Mitigation measures that protect the pallid bat from possible direct mortality are warranted. Therefore, the project applicant will implement the following measures to ensure that mortality to pallid bats from project construction is avoided.

**Mitigation Measure 3.3.1a:** Removal of trees shall occur between October 1<sup>st</sup> and May 31<sup>st</sup> when pallid bats would not be maternally roosting.

**Mitigation Measure 3.3.1b:** If trees cannot be removed outside of the pallid bats maternal roosting season, then pre-construction surveys for maternal bat roosts shall be conducted in areas containing possible habitat within 30 days prior to tree removal.

**Mitigation Measure 3.3.1c:** Any trees being used as maternal roosts must be avoided until a qualified biologist has determined the bats have abandoned the trees.

Full implementation of the measures identified above is considered sufficient to mitigate impacts to pallid bats to a less than significant level.

### **3.4 LESS THAN SIGNIFICANT PROJECT IMPACTS**

#### **3.4.1 Loss of Habitat for Special Status Plants**

**Potential Impacts.** One federally threatened and state rare plant species and 41 other special status plant species (including U.S. Forest Service “sensitive species”) are known to occur in the general vicinity of the project site (see Table 1). Of these 41 plants, all but two, the yellow-lip pansy monkeyflower and brownish beaked-rush, are absent or unlikely to be present on the site due to unsuitable habitat or the project site’s being situated outside of their range. The proposed project would have no impact on the 14 regionally-occurring special status plant species that would not be expected to occur on the project site. Potential project impacts to the yellow-lip pansy monkeyflower and brownish beaked-rush are discussed in the following section.

**Mitigation.** Mitigation measures are not warranted.

#### **3.4.2 Disturbance to Yellow-lip Pansy Monkeyflower and Brownish Beaked-Rush**

**Potential Impacts.** The project has the potential to disturb populations of the yellow-lip pansy monkeyflower and brownish beaked-rush. These species have been determined to be rare in California by the CNPS with a listing status of 1B and 2B, respectively. The yellow-lip pansy monkeyflower has been documented growing in bare areas within the moist meadows of the project site by local botanists Barry and Judy Breckling. The project will result in ground disturbance that will have the possibility of disturbing populations of these species. However, according to the Brecklings, the yellow-lip pansy monkeyflower is fairly common in the Greeley

Hill area and on the project site. Due to the extent of this species occurrence on the site it is highly unlikely that project activities would eliminate this species from the project site and certainly not from surrounding areas. The restoration project is anticipated to result in a net gain in habitat for this species and the species will likely become quickly established in this habitat after restoration activities are complete.

Although brownish-beaked rush has not been observed on the project site, the site offers suitable habitat for this species and its occurrence on the site must be considered a possibility. Because all recoverable native vegetation from the fill and borrow sites will be transplanted to plug edges, surfaces, and key locations on the remnant channel, and because the downstream edges of plugs will be heavily planted with sedge mats recovered from the gully bottom, any brownish beaked-rush occurring in project disturbance areas would have a high likelihood of being transplanted. Transplant success of perennials is usually high if the proper environmental conditions are created. The project objectives are to create wetland habitats that this species would benefit from; therefore, any transplantation of this species that may incidentally occur as part of project activities is expected to have a high rate of success.

Because the project will, at most, have a minimal impact on the yellow-lip pansy monkeyflower and brownish beaked-rush, and likely increase habitat for these species, impacts to these species are considered less than significant.

**Mitigation.** Mitigation measures are not warranted.

### **3.4.3 Loss of Habitat or Direct Impact to Special Status Animals Absent or Unlikely to Occur on the Site**

**Potential Impacts.** Of the 20 special status animal species potentially occurring in the region, eight species would be absent or unlikely to occur on the site due to the absence of suitable habitat or the project site's being situated outside of their range. These species include the valley elderberry longhorn beetle, mountain yellow-legged frog, foothill yellow-legged frog, limestone salamander, bald eagle, Sierra Nevada red fox, San Joaquin roach, and burrowing owl. Since there is little to no likelihood that these species would use the site, disturbance from future development of the project site would have no effect on these species.

March 9, 2015

**Mitigation.** No loss of habitat or direct impact to these special status animals would occur; therefore, no mitigations are warranted.

#### **3.4.4 Loss of Habitat for Special Status Animals that may Occur on the Site as Occasional or Regular Foragers but Breed Elsewhere**

**Potential Impacts.** Seven species would be expected to use the site for foraging only. These species include the great gray owl, California spotted owl, northern goshawk, golden eagle, spotted bat, Townsend's big-eared bat, and western mastiff bat. Similar foraging habitat is abundant throughout the region. The project would only temporarily disrupt the availability of an immeasurably small amount of regionally available foraging habitat. Furthermore, the project objective is to improve habitat for these and other native wildlife species. Therefore, the project would not significantly reduce the amount or quality of foraging habitat currently available in the region.

**Mitigation.** The loss of foraging habitat for special status animals is considered a less than significant impact. Therefore, no mitigations are warranted.

**Mitigation.** No mitigation required.

#### **3.4.5 Disturbance to Special Status Bird Species and Other Migratory Birds That May Nest on or Immediately Adjacent to the Site**

**Potential Impacts.** The project, as described in Section 1.1 will occur in the fall, outside the avian nesting season (February 1 through September 15) and at a time when summer migrants will have left the area. Therefore, impacts to all nesting birds, including special status species, will be absent.

**Mitigation.** No mitigation required.

#### **3.4.6 Direct Impacts to Resident Special Status Avian Species**

**Potential Impacts.** The great gray owl, California spotted owl, northern goshawk, and golden eagle may occur on the project site at the time of restoration activities. None of these species

March 9, 2015

would be expected to nest on the project site; however, all are known to utilize lower elevations from time to time, especially during the winter. Therefore, there is some possibility that these species may occur in the vicinity of the project site during restoration activities. Since individuals, including juveniles, will be fully mobile at this time, even if individuals of these species should occur on or near the project site, they would be able to easily fly away from the impact area. Therefore, the project is not expected to result in construction-related injury or mortality of these species.

**Mitigation.** No mitigation required.

### **3.4.7 Project Impacts to Fish or Wildlife Movement Corridors**

**Potential Impacts.** The project site provides no significant fish or wildlife movement corridor. Bean Creek provides only intermittent riparian cover for wildlife, and therefore is unlikely to function as an important movement corridor. At most, this seasonal creek may facilitate the movement of fish upstream from an offsite perennial pond during periods of creek flow. The objective of the project is to enhance riparian vegetation, which will only improve movement opportunities for native wildlife species. Therefore, project impacts to fish or wildlife movement corridors are considered less than significant.

**Mitigation.** Mitigation measures are not warranted.

### **3.4.8 Potential Impact to Riparian Habitat Or Other Sensitive Natural Communities**

**Potential Impacts.** Sensitive habitats in the form of riparian and seasonal wetland have been identified on the project site. The project will result in temporary impacts to these sensitive natural communities. However, the intended result of the project is to increase the amount of wetlands and riparian vegetation within the project site. This will be accomplished through the construction of a series of plug dams and the planting and seeding of native vegetation. Cuttings will be taken from existing willows on the site and planted around the created wetland ponds. Additionally, the plugs will be seeded with native sedges to reduce erosion and enhance habitat. The assure success the plantings will be monitored, quarterly, for the first two years and yearly

March 9, 2015

thereafter. Therefore, project impacts to riparian habitat and other sensitive natural communities are less than significant under CEQA.

For a detailed discussion of potential project impacts to jurisdictional waters, including seasonal wetlands, please see the following section.

**Mitigation.** Mitigation measures are not warranted.

### **3.4.9 Project Impact to Jurisdictional Waters**

**Potential Impacts.** As discussed in Section 2.3, approximately 8.5 acres of verified waters of the U.S. are located on the Bean Creek Meadow Restoration project site. The project will not result in impacts to this entire acreage. Impacts to wetland swales and wetland channels will primarily consist of equipment passing through these features, and are expected to be minimal. Most project impacts to waters of the U.S. will consist of work in the Bean Creek channel. The entire 5-acre reach of Bean Creek that passes through the project site has the potential to be impacted by the installation of plugs and creation of ponds. However, the Bean Creek Meadow Restoration project is self-mitigating in that it will result in the creation of 39 acres of wet meadow, emergent marsh, and perennial ponds. Even if the project impacts all verified waters of the U.S. on the site, these impacts will be mitigated at a ratio of more than 4:1. The goal of the project is to enhance the function and value of the Bean Creek wetland system, and as such, project impacts to these wetlands and waters are considered less than significant under CEQA.

However, to comply with state and federal laws, the applicant must obtain the appropriate permits pursuant to Sections 404 and 401 of the Clean Water Act, and a Stream Alteration Agreement pursuant to Section 1602 of California Fish and Game Code, and comply with the provisions of these permits and agreements.

**Mitigation.** The project is self-mitigating. No additional mitigation is warranted.

March 9, 2015

### **3.4.10 Local Policies or Habitat Conservation Plans**

**Potential Impacts.** It appears that all restoration activities within the project site would be in compliance with the provisions of Mariposa County General Plan polices related to biological resources. No known Habitat Conservation Plans are in effect for the area.

**Mitigation.** No mitigations are warranted.

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March 9, 2015

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March 9, 2015

## **APPENDIX A: VASCULAR PLANTS OF THE PROJECT SITE**

**APPENDIX C**  
**VASCULAR PLANTS OF THE BEAN CREEK PRESERVE**

The plants species listed below have been observed on the Bean Creek Preserve in Mariposa County during the during the field survey conducted by Live Oak Associates, Inc. on December 23, 2010, April 27, May 21 and 22, 2012.

\*OBL - Obligate  
 FACW - Facultative Wetland  
 FAC - Facultative  
 FACU - Facultative Upland  
 UPL - Upland  
 +/- - Higher/lower end of category  
 NR - No review  
 NA - No agreement  
 NI - No investigation

<b>AGAVACEAE – Agave Family</b>		
<i>Chlorogalum pomeridianum</i>	Soap Plant	UPL
<b>ANACARDIACEAE – Cashew Family</b>		
<i>Toxicodendron diversilobum</i>	Poison Oak	UPL
<b>APIACEAE – Carrot Family</b>		
<i>Daucus pusillus</i>	Wild Carrot	UPL
<i>Osmorrhiza chilensis</i>	Mountain Sweet Cicely	UPL
<i>Sanicula bipinnatifida</i>	Purple Sanicle	UPL
<i>Torilis arvensis</i>	Field Hedge Parsely	UPL
<b>APOCYNACEAE – Dogbane Family</b>		
<i>Asclepias speciosa</i>	Showy Milkweed	FAC
<b>ARACEAE – Duckweed Family</b>		
<i>Lemna</i> sp.	Duckweed	OBL
<b>ASTERACEAE - Sunflower Family</b>		
<i>Achillea millefolium</i>	Common Yarrow	FACU
<i>Agoseris grandiflora</i>	Grand Mountain Dandelion	UPL
<i>Artemisia douglasiana</i>	Mugwort	FACW
<i>Cirsium vulgare</i>	Bull thistle	FACU
<i>Filago californica</i>	California Cottonrose	UPL
<i>Grindelia camporum</i>	Great Valley Gumweed	UPL
<i>Hypochaeris glabra</i>	Smooth Cat’s-ear	UPL
<i>Lactuca serriola</i>	Prickly Lettuce	FACU
<i>Psilarrhus tenellus</i> ssp. <i>tenellus</i>	Slender Woolly Heads	OBL
<i>Taraxacum officinale</i>	Common Dandelion	FACU
<b>AXODACEAE – Elderberry Family</b>		
<i>Sambucus nigra</i> ssp. <i>canadensis</i>	Blue Elderberry	FACU
<b>BETULACEAE – Birch Family</b>		
<i>Corylus cornuta</i> ssp. <i>californica</i>	California Hazel	FACU

March 9, 2015

<b>BORAGINACEAE – Borage Family</b>		
<i>Plagiobothrys californica</i>	California Popcornflower	UPL
<i>Plagiobothrys nothofulvus</i>	Popcornflower	FAC
<i>Nemophilla maculata</i>	Five Spot	UPL
<i>Nemophilla menziesii</i>	Baby Blue Eyes	UPL
<b>CAMPANULACEAE – Bellflower Family</b>		
<i>Downingia montana</i>	Sierra Calico Flower	OBL
<b>CARYOPHYLLACEAE – Carnation Family</b>		
<i>Cerastium glomeratum</i>	Mouse-eared Chickweed	FACU
<b>CONVOLVULACEAE – Morning Glory Family</b>		
<i>Calystegia malacophylla</i> ssp. <i>malacophylla</i>	Morning Glory	UPL
<b>CUPRESSACEAE – Cypress Family</b>		
<i>Calocedrus decurrens</i>	Incense Cedar	UPL
<b>CYPERACEAE – Sedge Family</b>		
<i>Carex feta</i>	Green-sheathed Sedge	FACW
<i>Carex nudata</i>	Torrent Sedge	OBL
<i>Carex praegracilis</i>	Clustered Field Sedge	FACW
<b>DENNSTAIDTIACEAE – Bracken Fern Family</b>		
<i>Pteridium aquilinum</i>	Bracken Fern	FACU
<b>ERICACEAE – Heath Family</b>		
<i>Arctostaphylos viscida</i> ssp. <i>mariposa</i>	Mariposa Manzanita	UPL
<b>EQUISETACEAE – Horsetail Family</b>		
<i>Equisetum telmateia</i> ssp. <i>braunii</i>	Horsetail	FACW
<b>FABACEAE - Legume Family</b>		
<i>Acmispon strigosus</i>	Deerweed	UPL
<i>Acmispon americanus</i>	Spanish Clover	UPL
<i>Acmispon nevadensis</i>	Nevada Deerweed	UPL
<i>Hoita macrostachya</i>	California Hemp	OBL
<i>Lupinus bicolor</i>	Bicolored Lupine	UPL
<i>Medicago polymorpha</i>	Burclover	FACU
<i>Trifolium dubium</i>	Little Hop Clover	FACU
<i>Trifolium hirtum</i>	Rose Clover	UPL
<i>Trifolium microcephalum</i>	Small Head Clover	UPL
<i>Vicia americana</i> ssp. <i>americana</i>	American Vetch	FAC
<i>Vicia villosa</i>	Hairy Vetch	UPL
<b>FAGACEAE – Beech Family</b>		
<i>Quercus chrysolepis</i>	Canyon Live Oak	UPL
<i>Quercus kelloggii</i>	California Black Oak	UPL
<b>GERANIACEAE - Geranium Family</b>		
<i>Erodium botrys</i>	Broad-leaf Filaree	FACU
<i>Erodium cicutarium</i>	Red-stem Filaree	UPL
<i>Geranium dissectum</i>	Dissected Geranium	UPL
<b>GROSSULARIACEAE – Gooseberry Family</b>		
<i>Ribes amarum</i>	Sierra Gooseberry	UPL
<b>HYPERICACEAE – St. Johns Wort Family</b>		
<i>Hypericum perforatum</i>	St. John’s Wort	FACW
<b>IRIDACEAE – Iris Family</b>		
<i>Iris missouriensis</i>	Western Blue Flag	FACW
<i>Sisyrinchium idahoense</i> var. <i>occidentale</i>	Blue-eyed Grass	FACW

March 9, 2015

**JUNACEAE – Rush Family**

<i>Juncus effusus</i> ssp. <i>pacificus</i>	Pacific Rush	FACW
<i>Juncus mexicanus</i>	Mexican Rush	FACW
<i>Luzula comosa</i>	Hairy Wood Rush	FAC

**LAMIACEAE - Mint Family**

<i>Lamium amplexicaule</i>	Henbit	UPL
<i>Mentha pulegium</i>	Pennyroyal	OBL

**LIMNANTHACEAE – Meadowfoam Family**

<i>Limnanthes alba</i> ssp. <i>versicolor</i>	White Meadowfoam	FACW
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**LINACEAE – Flax Family**

<i>Linum lewisii</i>	Western Blue Flax	UPL
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**MALVACEAE - Mallow Family**

<i>Sidalcea glaucescens</i>	Glaucous Checker-mallow	UPL
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**MONTIACEAE – Miners Lettuce Family**

<i>Calandrinia ciliata</i>	Red Maids	FACU
<i>Claytonia perfoliata</i>	Miner’s Lettuce	FAC

**ONAGRACEAE – Fuschia Family**

<i>Clarkia</i> sp.	Farewell to Spring	UPL
<i>Epilobium densiflorum</i>	Dense-flowered Bousduvalia	FACW

**OROBANCHACEAE – Owls Clover Family**

<i>Castilleja lineariloba</i>	Thin-lobed Owls Clover	UPL
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**PAPAVERACEAE – Poppy Family**

<i>Eschscholzia californica</i>	California Poppy	UPL
<i>Platystemon californicus</i>	Cream Cups	UPL

**PHRYMACEAE – Monkey Flower Family**

<i>Mimulus tricolor</i>	Tricolored Monkey Flower	OBL
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**PLANTAGINACEAE – Plantain Family**

<i>Collinsia heterophylla</i> ssp. <i>heterophylla</i>	Chinese Houses	UPL
<i>Plantago major</i>	Plantain	FAC
<i>Plantago lanceolata</i>	Plantain	FACU

**PINACEAE – Pine Family**

<i>Pinus lambertiana</i>	Sugar Pine	UPL
<i>Pinus ponderosa</i>	Ponderosa Pine	FACU

**POACEAE - Grass Family**

<i>Aira caryophyllea</i>	Silver Hair Grass	FACU
<i>Briza minor</i>	Quaking Oat Grass	FAC
<i>Bromus carinatus</i>	California Brome Grass	UPL
<i>Bromus hordeaceus</i>	Soft Chess	FACU
<i>Bromus diandrus</i>	Ripgut Brome	UPL
<i>Cynoserus echinatus</i>	Hedgehog Dogtail	UPL
<i>Deschampsia caespitosa</i>	Tufted Hairgrass	FACW
<i>Elymus glaucus</i>	Blue Wild Rye	FACU
<i>Holcus lanatus</i>	Common Velvet Grass	FAC
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean Barley	FAC
<i>Muhlenbergia rigens</i>	Deer Grass	UPL
<i>Poa annua</i>	Annual Bluegrass	FAC
<i>Poa bulbosa</i>	Bulbous Bluegrass	UPL
<i>Poa pratensis</i>	Kentucky Bluegrass	FAC
<i>Poa secunda</i>	Bluegrass	FACU

March 9, 2015

<i>Taeniatherum caput-medusae</i>	Medusa Head	UPL
<i>Vulpia bromoides</i>	Six-weeks Brome Grass	FACU
<b>POLEMONIACEAE – Polemony Family</b>		
<i>Navarretia</i> sp.	Navarretia	-
<i>Leptosiphon ciliatus</i>	Whiskerbrush	UPL
<b>POLYGONACEAE - Buckwheat Family</b>		
<i>Eriogonum nudum</i>	Nude Buckwheat	UPL
<i>Rumex acetosella</i>	Sheep Sorrell	FACU
<b>POTAMOGETONACEAE – Pondweed Family</b>		
<i>Potamogeton epihydrus</i> ssp. <i>nuttallii</i>	Nuttall’s Pondweed	OBL
<b>RANUNCULACEAE- Buttercup Family</b>		
<i>Delphinium depauperatum</i>	Small Larkspur	UPL
<i>Ranunculus occidentalis</i>	Western Buttercup	FACW
<b>RHAMNACEAE – Buckbrush Family</b>		
<i>Ceanothus integerrimus</i>	Deerbrush	UPL
<b>ROSACEAE-Rose Family</b>		
<i>Amelanchier alnifolia</i>	Saskatoon Serviceberry	FACU
<i>Horkelia</i> sp.	Horkelia	-
<i>Prunus virginiana</i> var. <i>demissa</i>	Western Choke Cherry	FACU
<i>Rubus armeniacus</i>	Himalayan Blackberry	FACU
<i>Rubus laciniatus</i>	Cutleaf Blackberry	FACU
<i>Potentilla pennsylvanica</i>	Pennsylvania Cinquefoil	FACU
<i>Rosa gymnocarpa</i>	Bald Hip Rose	FACU
<i>Rosa woodsii</i>	Wild Rose	FACU
<b>RUBIACEAE – Madder Family</b>		
<i>Galium parisiense</i>	Wall Bedstraw	FACU
<i>Galium porrigens</i>	Bedstraw	UPL
<b>SALICACEAE – Willow Family</b>		
<i>Salix laevigata</i>	Red Willow	FACW
<i>Salix scouleriana</i>	Scouler’s Willow	FAC
<b>SCROPHULARIACEAE - Figwort Family</b>		
<i>Verbascum thapsus</i>	Mullein	FACU
<b>THEMIDACEAE – Lily Family</b>		
<i>Dichelostemma capitatum</i>	Blue Dicks	UPL
<b>TYPHACEAE – Cattail Family</b>		
<i>Typha latifolia</i>	Broad-leaf Cattail	OBL

\* Indicator Status’ are based on the State of California National Wetland Plant List Final Draft Rating, USACE, Cold Regions Research and Engineering Laboratory, released in May 2012.

March 9, 2015

Plants found on Pulvion property on May 12, 2009  
And on Bean Creek Preserve May 11, 2011|  
By Barry and Judy Breckling  
(Asterisks (\*) notes new plant found on 2011 trip)

**Apiaceae—Carrot family**

Anthriscus caucalis*	Bur-chervil
Torilis arvensis	Hedge Parsley

**Asteraceae—Sunflower family**

Agoseris grandiflora	California Dandelion
Artemisia douglasiana	Mugwort
Grindelia camporum	Great Valley Gumplant
Hypochaeris glabra	Smooth Cat's Ear
Wyethia angustifolia	Narrow-leaved Mule Ears

**Brassicaceae—Mustard family**

Barbarea orthoceras	Winter Cress
Cardaria chalapensis*	Lens-podded Hoary Cress
Thysanocarpus curvipes	Hairy Fringepod

**Caryophyllaceae—Pink family**

Cerastium glomeratum*	Mouse-eared Chickweed (alien)
Stellaria media*	Common Chickweed

**Fabaceae—Pea family**

Lupinus bicolor	Miniature Lupine, Dove Lupine
Lupinus nanus	Sky Lupine
Medicago lupulina*	Black Medick
Trifolium dubium	Little Hop Clover (alien)
Trifolium hirtum	Rose Clover (alien)
Trifolium microdon	Thimble Clover
Trifolium monanthum var. monanthum	Carpet Clover
Vicia sativa ssp. nigra	Garden Spring Vetch

**Geraniaceae—Geranium Family**

Erodium botrys*	Broadleaf Filaree
Erodium cicutarium*	Red-stem Filaree

**Hydrophyllaceae—Waterleaf family**

Nemophila maculate*	Five-spot
Nemophila menziesii*	Baby-blue-eyes

**Lamiaceae—Mint family**

Lamium amplexicaule Henbit, Giraffe Heads, Dead Nettle (alien)

**Limnanthaceae—Meadowfoam family**

Limnanthes albus ssp. albus White Meadowfoam  
Limnanthes albus ssp. versicolor White Meadowfoam

**Papaveraceae—Poppy family**

Eschscholzia caespitosa Tufted Poppy  
Eschscholzia californica\* California Poppy  
Platystemon californicus Cream Cups

**Plantaginaceae—Plantain family**

Plantago lanceolata\* English Plantain

**Poaceae--Grass family**

Bromus racemosus\*  
Poa bulbosa\*  
Hordeum murinum ssp. glaucum\* Wild Barley

**Polemoniaceae—Phlox family**

Linanthus bicolor True Baby Stars  
Phlox gracilis\* Slender Phlox

**Polygonaceae—Buckwheat family**

Rumex acetosella\* Sheep Sorrel  
Rumex crispus\* Curly Dock  
Eriogonum nudum\* Naked Buckwheat

**Portulacaceae—Purslane family**

Calandrinia Ciliata Red Maids  
Claytonia perfoliata\* Miner's Lettuce

**Ranunculaceae—Buttercup family**

Ranunculus occidentalis Western Buttercup

**Rubiaceae—Bedstraw or Madder family**

Galium aparine\* Goosegrass

**Scrophulariaceae—Snapdragon or Figwort family**

Castilleja attenuate\* Valley Tassels  
Castilleja lineariloba Pale Owl's-Clover  
Collinsia sparsiflora Spinster's Blue-eyedMary  
Mimulus pulchellus Yellow-lipped Pansy Monkeyflower

March 9, 2015

Veronica arvensis\*

Common Speedwell

**Valerianaceae—Valerian family**

Plectritis ciliosa

Long-spurred Seablush

March 9, 2015

**APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT  
POTENTIALLY OCCUR ON THE PROJECT SITE**

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

The species listed below are those that may reasonably be expected to use the habitats of the project site routinely or from time to time. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed on or adjacent to the site during surveys conducted by Live Oak Associates, Inc. on April 27, May 21 and 22, 2012 and birds observed on or adjacent to the site during avian point counts conducted by Point Blue Conservation Science in the spring of 2014 have been noted with an asterisk.

**CLASS: AMPHIBIA**

**ORDER: CAUDATA (Salamanders)**

**FAMILY: SALAMANDRIDAE**

California Newt (*Taricha torosa*)

**FAMILY: PLETHODONTIDAE**

Ensatina (*Ensatina eschscholtzi*)

Black-bellied Slender Salamander (*Batrachoseps nigriventris*)

Pacific (Relictual) Slender Salamander (*Batrachoseps pacificus relictus*)

Arboreal Salamander (*Aneides lugubris*)

**ORDER: SALIENTIA (Frogs and Toads)**

**FAMILY: BUFONIDAE (True Toads)**

Western Toad (*Anaxyrus boreas*)

**FAMILY: HYLIDAE (Treefrogs and Relatives)**

Pacific Tree Frog (*Pseudacris regilla*)

**FAMILY: RANIDAE (True Frogs)**

\*Bullfrog (*Rana catesbeiana*)

**CLASS: REPTILIA**

**ORDER: SQUAMATA (Lizards and Snakes)**

**SUBORDER: SAURIA (Lizards)**

**FAMILY: IGUANIDAE (Iguanids)**

Western Fence Lizard (*Sceloporus occidentalis*)

Sagebrush Lizard (*Sceloporus graciosus*)

**FAMILY: SCINCIDAE (Skinks)**

Gilbert Skink (*Eumeces gilberti*)

**FAMILY: TEIIDAE (Whiptails and relatives)**

Western Whiptail (*Cnemidophorus tigris*)

**FAMILY: ANGUIDAE (Alligator Lizards and Relatives)**

Southern Alligator Lizard (*Gerrhonotus multicarinatus*)

Northern Alligator Lizard (*Gerrhonotus coeruleus*)

**SUBORDER: SERPENTES (Snakes)**

**FAMILY: BOADAE**

Rubber Boa (*Charina bottae*)

**FAMILY: COLUBRIDAE (Colubrids)**

Ring-necked Snake (*Diadophis punctatus*)

Sharp-tailed Snake (*Contia tenuis*)

Racer (*Coluber constrictor*)

California Whipsnake (*Masticophis lateralis*)

Gopher Snake (*Pituophis melanoleucus*)

Common Kingsnake (*Lampropeltis getulus*)

California Mountain Kingsnake (*Lampropeltis zonata*)

Common Garter Snake (*Thamnophis sirtalis*)

March 9, 2015

Western Terrestrial Garter Snake (*Thamnophis elegans*)  
Western Aquatic Garter Snake (*Thamnophis couchi*)  
Night Snake (*Hypsiglena torquata*)

**FAMILY: VIPERIDAE**

Western Rattlesnake (*Crotalus viridis*)

**CLASS: AVES**

**ORDER: PODICIPEDIFORMES (Grebes)**

**FAMILY: PODICIPEDIDAE (Grebes)**

Pied-billed Grebe (*Podilymbus podiceps*)

**ORDER: CICONIIFORMES (Hérons, Storks, Ibises, and relatives)**

**FAMILY: ARDEIDAE (Hérons and Bitterns)**

\*Great Blue Heron (*Ardea herodias*)

**ORDER: ANSERIFORMES (Screamers, Ducks and Relatives)**

**FAMILY: ANATIDAE (Swans, Geese, and Ducks)**

\*Canada Goose (*Branta canadensis*)

\*Wood Duck (*Aix sponsa*)

\*Mallard (*Anas platyrhynchos*)

Ring-necked Duck (*Athya collaris*)

Lesser Scaup (*Athya affinis*)

Common Merganser (*Mergus merganser*)

Ruddy Duck (*Oxyura jamaicensis*)

**ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)**

**FAMILY: CATHARTIDAE (American Vultures)**

\*Turkey Vulture (*Cathartes aura*)

**FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures, and Harriers)**

Sharp-shinned Hawk (*Accipiter striatus*)

Cooper's Hawk (*Accipiter cooperi*)

Northern Goshawk (*Accipiter gentiles*)

\*Red-tailed Hawk (*Buteo jamaicensis*)

\*Red-shouldered Hawk (*Buteo lineatus*)

Golden Eagle (*Aquila chrysaetos*)

\*Osprey (*Pandion haliaetus*)

**FAMILY: FALCONIDAE (Caracaras and Falcons)**

American Kestrel (*Falco sparverius*)

Merlin (*Falco columbarius*)

**ORDER: GALLIFORMES**

**FAMILY: PHASIANIDAE**

\*California Quail (*Callipepla californica*)

\*Mountain Quail (*Oreortyx pictus*)

**ORDER: GRUIFORMES (Cranes, Rails, and Relatives)**

**FAMILY: RALLIDAE (Rails, Gallinules, and Coots)**

American Coot (*Fulica Americana*)

**ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and relatives)**

**FAMILY: CHARADRIIDAE (Plovers and relatives)**

\*Killdeer (*Charadrius vociferus*)

**FAMILY: RECURVIROSTRIDAE (Avocets and Stilts)**

Black-necked Stilt (*Himantopus mexicanus*)

March 9, 2015

American Avocet (*Recurvirostra americana*)

**FAMILY: SCOLOPACIDAE (Sandpipers and relatives)**

Spotted Sandpiper (*Actitis macularia*)

Common Snipe (*Gallinago gallinago*)

California Gull (*Larus californicus*)

**ORDER: COLUMBIFORMES (Pigeons and Doves)**

**FAMILY: COLUMBIDAE (Pigeons and Doves)**

\*Mourning Dove (*Zenaida macroura*)

Band-tailed Pigeon (*Columba fasciata*)

**ORDER: STRIGIFORMES (Owls)**

**FAMILY: TYTONIDAE (Barn Owls)**

Barn Owl (*Tyto alba*)

**FAMILY: STRIGIDAE (Typical Owls)**

Western Screech Owl (*Otus kennicottii*)

\*Great Horned Owl (*Bubo virginianus*)

Northern Pygmy Owl (*Glaucidium gnoma*)

California Spotted Owl (*Strix occidentalis occidentalis*)

Great Gray Owl (*Strix nebulosa*)

Long-eared Owl (*Asio otus*)

Northern Saw-whet owl (*Aegolius acadicus*)

**ORDER: CAPRIMULGIFORMES (Goatsuckers and relatives)**

**FAMILY: CAPRIMULGIDAE (Goatsuckers)**

Common Poorwill (*Phalaenoptilus nuttallii*)

Common Nighthawk (*Chordeiles minor*)

**ORDER: APODIFORMES (Swifts and Hummingbirds)**

**FAMILY: APODIFORMES (Swifts)**

Black Swift (*Cypseloides niger*)

Vaux's Swift (*Chaetura vauxi*)

White-throated Swift (*Aeronautes saxatalis*)

**FAMILY: TROCHILIDAE (Hummingbirds)**

\*Anna's Hummingbird (*Calypte anna*)

Calliope Hummingbird (*Stellula calliope*)

Rufous Hummingbird (*Selasphorus rufus*)

**ORDER: CORACIIFORMES**

**FAMILY: ALCEDINIDAE (Kingfishers)**

Belted Kingfisher (*Ceryle alcyon*)

**ORDER: PICIFORMES (Woodpeckers and Relatives)**

**FAMILY: PICIDAE (Woodpeckers and Wrynecks)**

Lewis's Woodpecker (*Melanerpes lewis*)

\*Acorn Woodpecker (*Melanerpes formicivorus*)

Red-breasted Sapsucker (*Sphyrapicus ruber*)

Downy Woodpecker (*Picoides pubescens*)

Hairy Woodpecker (*Picoides villosus*)

\*Northern Flicker (*Colaptes auratus*)

**ORDER: PASSERIFORMES (Perching Birds)**

**FAMILY: TYRANNIDAE (Tyrant Flycatchers)**

\*Olive-sided Flycatcher (*Contopus borealis*)

\*Western Wood-pewee (*Contopus sordidulus*)

Hammond's Flycatcher (*Empidonax hammondii*)

Dusky Flycatcher (*Empidonax oberholseri*)

Pacific-slope Flycatcher (*Empidonax difficilis*)

\*Black Phoebe (*Sayornis nigricans*)

Ash-throated Flycatcher (*Myiarchus cinerascens*)

\*Western Kingbird (*Tyrannis verticalis*)

March 9, 2015

**FAMILY: VIREONIDAE (Vireos)**

- \*Hutton's Vireo (*Vireo huttoni*)
- Cassin's Vireo (*Vireo cassinii*)
- Warbling Vireo (*Vireo gilvus*)

**FAMILY: HIRUNDINIDAE (Swallows)**

- Tree Swallow (*Tachycineta bicolor*)
- \*Violet-green Swallow (*Tachycineta thalassina*)
- \*Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)
- \*Cliff Swallow (*Hirundo pyrrhonota*)
- \*Barn Swallow (*Hirundo rustica*)

**FAMILY: CORVIDAE (Jays, Magpies, and Crows)**

- \*Steller's Jay (*Cyanocitta stelleri*)
- \*Western Scrub Jay (*Aphelocoma coerulescens*)
- American Crow (*Corvus brachyrhynchos*)
- \*Common Raven (*Corvus corax*)

**FAMILY: PARIDAE (Titmice)**

- Mountain Chickadee (*Parus gambeli*)
- \*Oak Titmouse (*Parus inornatus*)

**FAMILY: AEGITHALIDAE (Aegithalidae)**

- \*Bushtit (*Psaltriparus minimus*)

**FAMILY: SITTIDAE (Nuthatches)**

- \*Red-breasted Nuthatch (*Sitta canadensis*)
- \*White-breasted Nuthatch (*Sitta carolinensis*)

**FAMILY: CERTHIIDAE (Creepers)**

- Brown Creeper (*Certhia americana*)

**FAMILY: TROGLODYTIDAE (Wrens)**

- \*House Wren (*Troglodytes aedon*)
- Winter Wren (*Troglodytes troglodytes*)
- \*Bewick's Wren (*Thryomanes bewickii*)

**FAMILY: CINCLIDAE**

- American Dipper (*Cinclus mexicanus*)

**FAMILY: REGULIDAE (Kinglets)**

- Golden-crowned Kinglet (*Regulus satrapa*)
- Ruby-crowned Kinglet (*Regulus calendula*)

**FAMILY: TURDIDAE (Thrushes)**

- \*Western Bluebird (*Sialia mexicana*)
- Townsend's Solitaire (*Myadestes townsendi*)
- Hermit Thrush (*Catharus guttatus*)
- \*American Robin (*Turdus migratorius*)
- Varied Thrush (*Ixoreus naevius*)

**FAMILY: MIMIDAE (Mockingbirds and Thrashers)**

- California Thrasher (*Toxostoma redivivum*)

**FAMILY: MOTACILLIDAE (Wagtails and Pipits)**

- American Pipit (*Anthus rubescens*)

**FAMILY: STURNIDAE (Starlings)**

- \*European Starling (*Sturnus vulgaris*)

**FAMILY: PARULIDAE (Wood Warblers)**

- Orange-crowned Warbler (*Vermivora celata*)
- Nashville Warbler (*Vermivora reficapilla*)
- Yellow Warbler (*Dendroica petechia*)
- Yellow-rumped Warbler (*Dendroica coronata*)
- \*Black-throated Gray Warbler (*Dendroica nigrescens*)
- \*Townsend's Warbler (*Dendroica townsendi*)
- \*Hermit Warbler (*Dendroica occidentalis*)
- MacGillivray's Warbler (*Oporornis tolmiei*)

March 9, 2015

Wilson's Warbler (*Wilsonia pusilla*)

**FAMILY: THRAUPIDAE (Tanagers)**

\*Western Tanager (*Piranga ludociana*)

**FAMILY: EMBERIZIDAE (Sparrows)**

\*Spotted Towhee (*Pipilo maculatus*)

\*California Towhee (*Pipilo crissalis*)

\*Chipping Sparrow (*Spizella passerina*)

\*Lark Sparrow (*Chondestes grammacus*)

Fox Sparrow (*Passerella iliaca*)

Song Sparrow (*Melospiza melodia*)

Lincoln's Sparrow (*Melospiza lincolni*)

Golden-crowned Sparrow (*Zonotrichia atricapilla*)

White-crowned Sparrow (*Zonotrichia leucophrys*)

\*Dark-eyed Junco (*Junco hyemalis*)

**FAMILY: CARDINALIDAE (Cardinals and Allies)**

\*Black-headed Grosbeak (*Pheucticus ludovicianus*)

\*Lazuli Bunting (*Passerina amoena*)

**FAMILY: ICTERIDAE (Blackbirds)**

\*Red-winged Blackbird (*Agelaius phoeniceus*)

\*Brewer's Blackbird (*Euphagus cyanocephalus*)

\*Brown-headed Cowbird (*Molothrus ater*)

\*Bullock's Oriole (*Icterus bullocki*)

**FAMILY: PASSERIDAE (Weaver Finches)**

House Sparrow (*Passer domesticus*)

**FAMILY: FRINGILLIDAE (Finches)**

\*Purple Finch (*Carpodacus purpureus*)

\*House Finch (*Carpodacus mexicanus*)

Pine Siskin (*Carduelis pinus*)

\*Lesser Goldfinch (*Carduelis psaltria*)

Lawrence's Goldfinch (*Carduelis lawrencei*)

American Goldfinch (*Carduelis tristis*)

**FAMILY: POLIOPTILIDAE (Gnatcatchers)**

Blue-gray Gnatcatcher (*Polioptila caerulea*)

**FAMILY: SYLVIIDAE (Sylviid Warblers)**

Wrentit (*Chamaea fasciata*)

**CLASS: MAMMALIA**

**ORDER: INSECTIVORA (Shrews and Moles)**

**FAMILY: SORICIDAE (Shrews)**

Dusky (Montane) Shrew (*Sorex monticolus*)

Ornate Shrew (*Sorex ornatus*)

Water Shrew (*Sorex palustris*)

Trowbridge's Shrew (*Sorex trowbridgii*)

**FAMILY: TALPIDAE (Moles)**

Broad-footed Mole (*Scapanus latimanus*)

**ORDER: CHIROPTERA (Bats)**

**FAMILY: VESPERTILIONIDAE (Vespertilionid Bats)**

Little Brown Myotis (*Myotis lucifugus*)

Yuma Myotis (*Myotis yumanensis*)

Long-eared Myotis (*Myotis evotis*)

Fringed Myotis (*Myotis thysanodes*)

Long-legged Myotis (*Myotis volans*)

California Myotis (*Myotis californicus*)

Small-footed Myotis (*Myotis leibii*)

Silver-haired Bat (*Lasionycteris noctivagans*)

March 9, 2015

Western Pipistrelle (*Pipistrellus hesperus*)  
Big Brown Bat (*Eptesicus fuscus*)  
Spotted Bat (*Euderma maculatum*)  
Red Bat (*Lasiurus borealis*)  
Hoary Bat (*Lasiurus cinereus*)  
Townsend's Big-eared Bat (*Plecotus townsendii*)  
Pallid Bat (*Antrozous pallidus*)

**FAMILY: MOLOSSIDAE (Free-tailed Bat)**

Brazilian Free-tailed Bat (*Tadarida brasiliensis*)

**ORDER: RODENTIA (Squirrels, Rats, Mice, and Relatives)**

**FAMILY: APLODONTIDAE**

Mountain Beaver (*Aplodontia rufa*)

**FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)**

Allen's Chipmunk (*Tamias senex*)  
Merriam's Chipmunk (*Tamias merriami*)  
Long-eared Chipmunk (*Tamias quadrimaculatus*)  
California Ground Squirrel (*Spermophilus beecheyi*)  
Golden-mantled Ground Squirrel (*Spermophilus lateralis*)  
Western Gray Squirrel (*Sciurus griseus*)  
Douglas' Squirrel (*Tamiasciurus douglasii*)  
Northern Flying Squirrel (*Glaucomys sabrinus*)

**FAMILY: GEOMYIDAE (Pocket Gophers)**

Botta's Pocket Gopher (*Thomomys bottae*)

**FAMILY: HETEROMYIDAE (Pocket Mice and Kangaroo Rats)**

California Pocket Mouse (*Chaetodipus californicus*)

**FAMILY: CRICETIDAE (Deer Mice, Voles, and Relatives)**

Western Harvest Mouse (*Reithrodontomys megalotis*)  
California Mouse (*Peromyscus californicus*)  
Deer Mouse (*Peromyscus maniculatus*)  
Brush Mouse (*Peromyscus boylii*)  
Pinyon Mouse (*Peromyscus truei*)  
Dusky-footed Woodrat (*Neotoma fuscipes*)  
Montane Vole (*Microtus montanus*)  
California Vole (*Microtus californicus*)  
Long-tailed Vole (*Microtus longicaudus*)

**FAMILY: MURIDAE (Old World Rats and Mice)**

House Mouse (*Mus musculus*)

**FAMILY: ZAPODIDAE**

Western Jumping Mouse (*Zapus princeps*)

**FAMILY: ERETHIZONTIDAE**

Porcupine (*Erethizon dorstum*)

**ORDER: CARNIVORA (Carnivores)**

**FAMILY: CANIDAE (Foxes, Wolves, and Relatives)**

Coyote (*Canis latrans*)  
Gray Fox (*Urocyon cinereoargenteus*)

**FAMILY: URSIDAE**

Black Bear (*Ursus americanus*)

**FAMILY: PROCYONIDAE (Raccoons and relatives)**

Raccoon (*Procyon lotor*)  
Ringtail (*Bassariscus astutus*)

**FAMILY: MUSTELIDAE (Weasels, Badgers, and Relatives)**

Ermine (*Mustela erminea*)

March 9, 2015

Long-tailed Weasel (*Mustela frenata*)

Mink (*Mustela vison*)

Western Spotted Skunk (*Spilogale gracilis*)

Striped Skunk (*Mephitis mephitis*)

Badger (*Taxidea taxus*)

**FAMILY: FELIDAE**

Mountain Lion (*Felis concolor*)

Bobcat (*Felis rufus*)

**ORDER: ARTIODACTYLA (Even-toed Ungulates)**

**FAMILY: CERVIDAE (Deer, Elk, and Relatives)**

Mule Deer (*Odocoileus hemionus*)

March 9, 2015

## **APPENDIX C: Selected site photographs**

March 9, 2015



**Photo 1: Montane meadow within the project site.**



**Photo 2: Montane meadow with Bean Creek channel-cut in upper right.**

March 9, 2015



**Photo 3: Erosion along incised channel of Bean Creek.**



**Photo 4: Area of Bean Creek channel supporting sparse riparian vegetation.**

March 9, 2015



**Photo 5: Riparian vegetation along Bean Creek.**



**Photo 6: Stretch of Bean Creek with little to no riparian vegetation.**