

<b>U.S. Army Corps of Engineers (USACE)</b> <b>APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT</b> For use of this form, see 33 CFR 325. The proponent agency is CECW-CO-R.	<b>Form Approved -</b> <b>OMB No. 0710-0003</b> <b>Expires: 08-31-2023</b>
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The public reporting burden for this collection of information, OMB Control Number 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at [whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil](mailto:whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR APPLICATION TO THE ABOVE EMAIL.

**PRIVACY ACT STATEMENT**

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: <http://dpcl.dod.mil/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx>

**(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)**

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE
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**(ITEMS BELOW TO BE FILLED BY APPLICANT)**

5. APPLICANT'S NAME First - Buffy                      Middle - A                      Last - Summers Company - Sunnydale Homeowners Association E-mail Address - buffy@dingoes.com	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required) First - Rose                      Middle -                      Last - Tyler Company - Bad Wolf Associates Consulting E-mail Address - rose@bwac.com
6. APPLICANT'S ADDRESS: Address- 1630 Revello Drive City - Sunnydale                      State - CA                      Zip - 95555                      Country - USA	9. AGENT'S ADDRESS: Address- 48 Bucknall Street City - Powell                      State - CA                      Zip - 94555                      Country - USA
7. APPLICANT'S PHONE NOs. w/AREA CODE a. Residence                      b. Business                      c. Fax (415) 555-1212                      (415) 555-1212	10. AGENTS PHONE NOs. w/AREA CODE a. Residence                      b. Business                      c. Fax (415) 555-1212                      (415) 555-1212                      (415) 555-1212

**STATEMENT OF AUTHORIZATION**

11. I hereby authorize, Rose Tyler, BWCA Consulting to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

\_\_\_\_\_  
 SIGNATURE OF APPLICANT                      DATE

**NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY**

12. PROJECT NAME OR TITLE (see instructions) Summers Property Streambank Stabilization	
13. NAME OF WATERBODY, IF KNOWN (if applicable) Sunnydale Creek	14. PROJECT STREET ADDRESS (if applicable) Address <b>1630 Revello Drive</b> City - <b>Sunnydale</b> State- <b>CA</b> Zip- <b>94555</b>
15. LOCATION OF PROJECT Latitude: °N <small>38.14160</small> Longitude: °W <small>-122.51025</small>	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID <small>123-456-789</small> Municipality <small>City of Sunnydale</small> Section -                      Township -                      Range -	

17. DIRECTIONS TO THE SITE

Take Highway 101 North to Hwy 37 towards Napa/Nallejo turn left at Hwy 121 /Arnold Dr. After approximately 7 miles turn left onto Hwy 12/Broadway to Sonoma. After 3.5 miles turn left onto Revello Drive

18. Nature of Activity (Description of project, include all features)

This project will use 50 cubic yards of earth along 60 linear feet of bank and 60 linear feet of willow mattress to repair 60 linear feet of eroded streambank along Sunnydale Creek. The area of work is approximately 60 feet long by 5 feet high and is approximately 300 square feet in area. Toe bank will be graded to a sustainable slope using small bobcat/dozer equipment before the earth and willows are placed. Toe willow mattress will be planted using hand tools.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The purpose of this project is to stop streambank erosion and to stabilize the bank with sustainable bioengineering methods.

**USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED**

20. Reason(s) for Discharge

Bioengineered stabilization for eroding streambank.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
Soil (earth) 50 cubic yards		

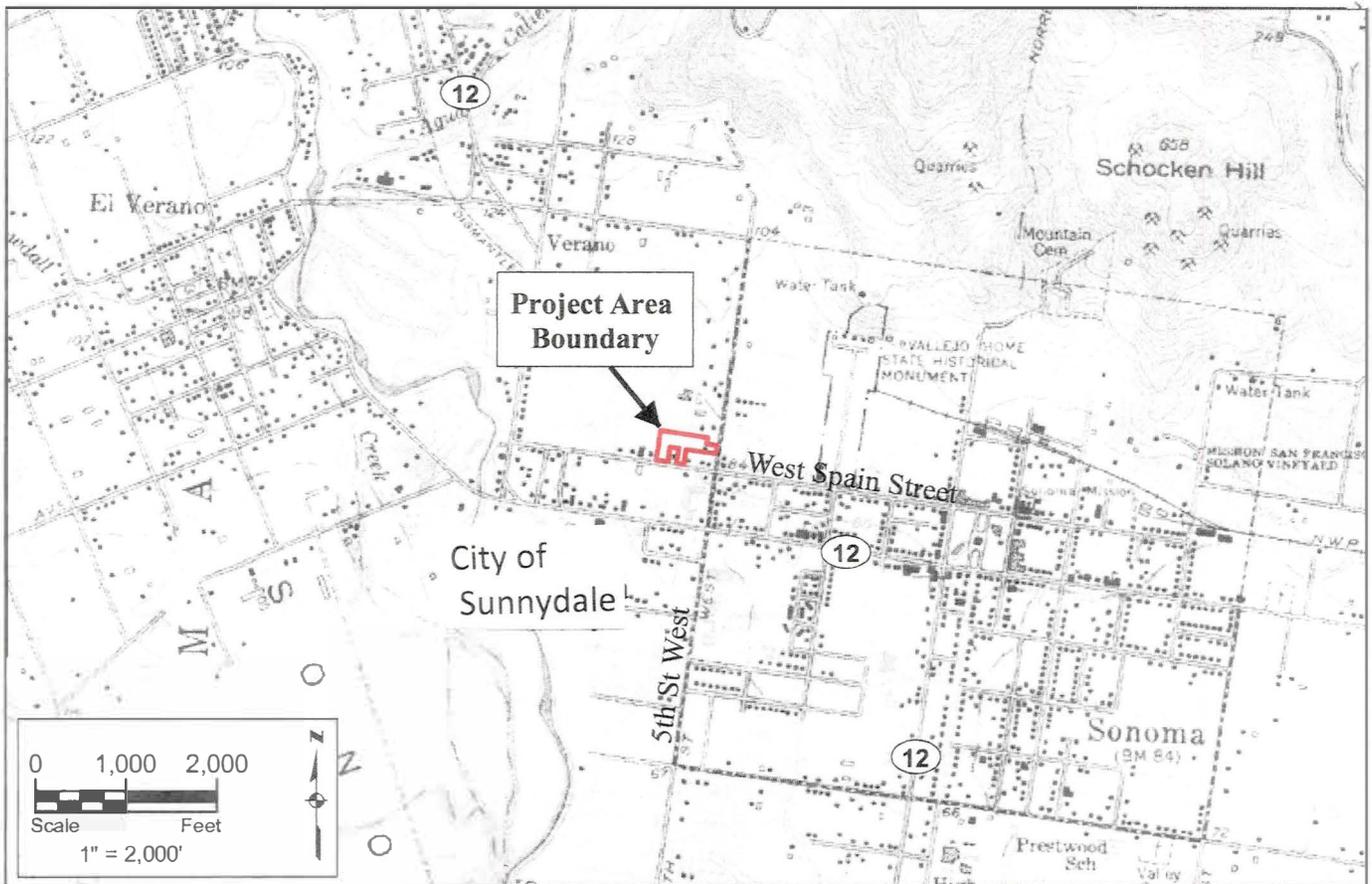
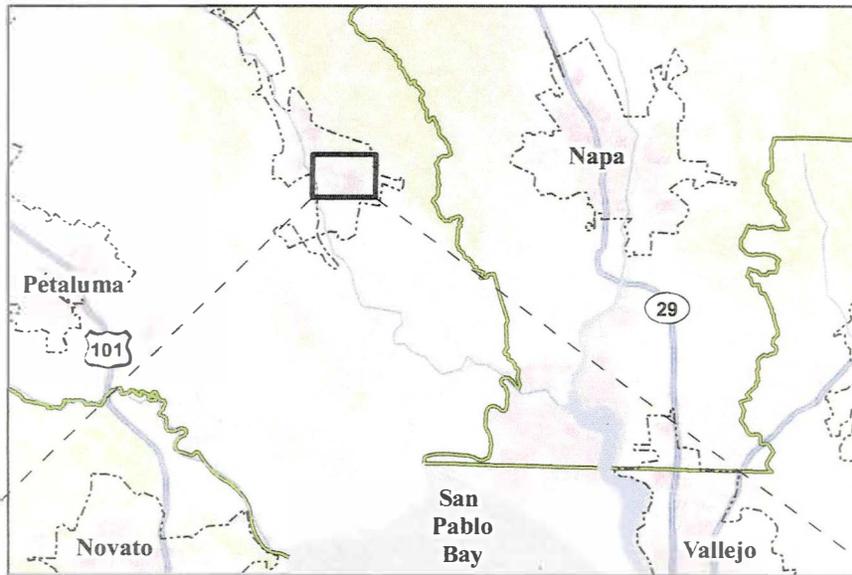
22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres  
or  
Linear Feet 60 linear feet of other waters

23. Description of Avoidance, Minimization, and Compensation (see instructions)

- All work will be performed during the dry season July 15 through October 15 to minimize potential impacts fish and other aquatic species.
- Best Management Practices (BMPs) will be followed to ensure that no fuel, oil or other petroleum products will runoff into Sunnydale Creek. BMPs for erosion, including silt fences, will be used during construction.



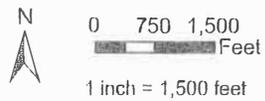
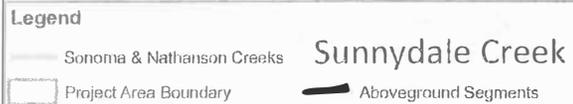
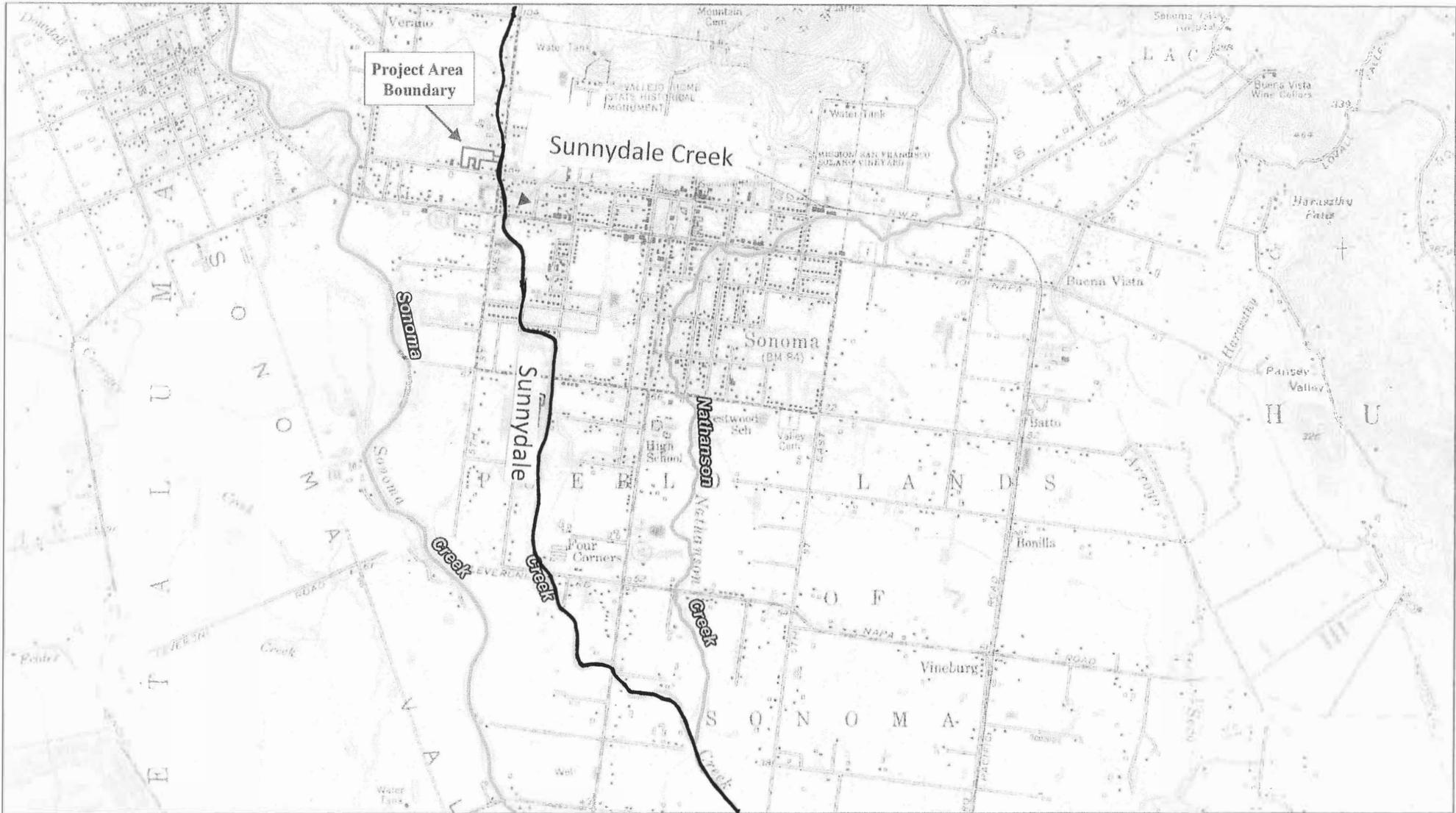


**Legend**

 Project Area Boundary

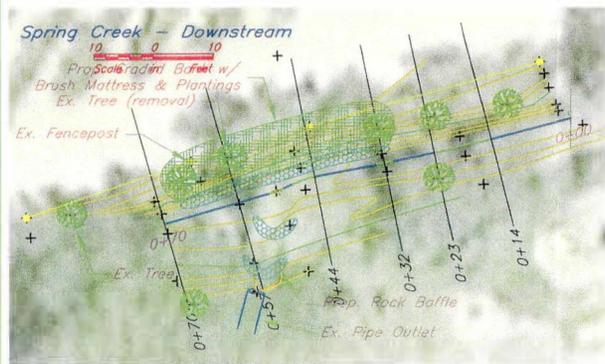
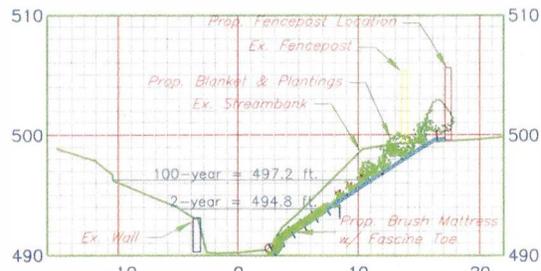
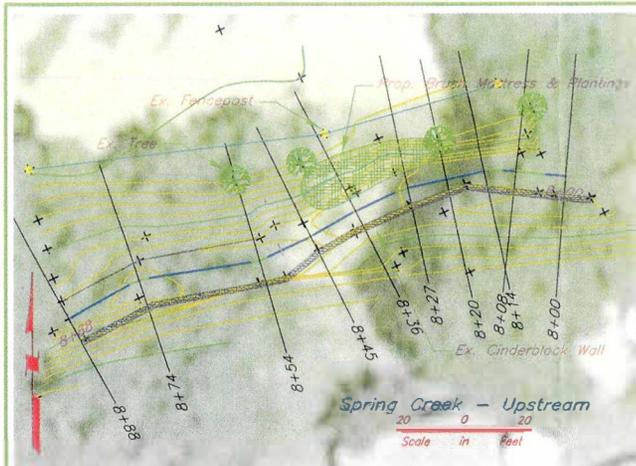
**Regional Map**

Summers Property  
 Streambank Stabilization  
 1630 Revello Drive  
 Sunnydale, CA



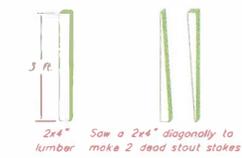
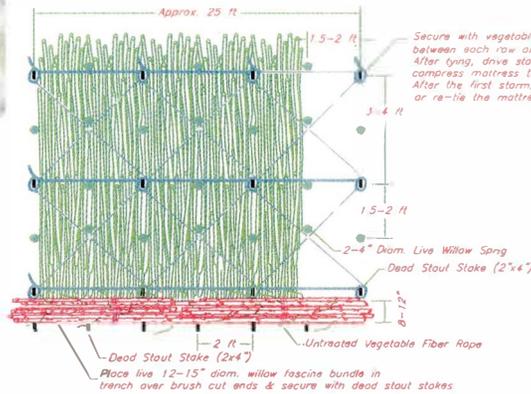
Jurisdictional Determination  
Site Analysis Map

Summers Property  
Streambank Stabilization  
1630 Revello Drive  
Sunnydale, CA



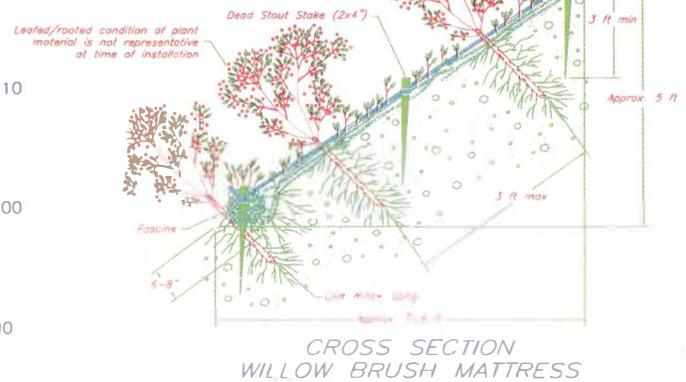
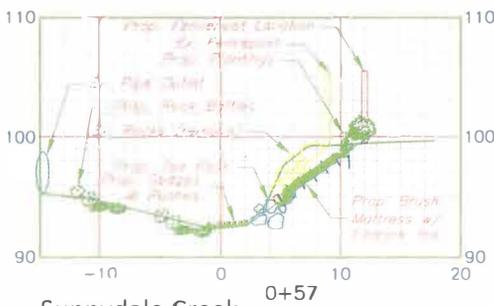
- GENERAL NOTES**
1. All Construction shall be in accordance with these drawings and attached specifications.
  2. Landowner shall be responsible for obtaining any needed permits, easements and/or right-of-way.
  3. Landowner will be responsible for locating and protecting all utilities. Special safety precautions to be taken when working in the vicinity of gas, oil, and electrical lines.
  4. Cal-OSHA safety requirements shall be in effect during all construction.
  5. All lines and grades shown on these drawings are approximate. The proposed structure locations, excavation limits, and fill limits may be staked in the field by the NRCS Engineer.
  6. Contact the USDA Natural Resources Conservation Service at least 7 days prior to construction at (707) 252-4189x114.

- CONSTRUCTION NOTES**
1. Willow harvest must comply with the Napa NRCS Harvest Guidelines.
  2. Erosion control fabric shall be North American Green C125 or C125BN in a double layer or equivalent.



PLAN VIEW  
WILLOW BRUSH MATTRESS

PREPARATION OF  
DEAD STOUT STAKE



Date: \_\_\_\_\_  
 Designed: \_\_\_\_\_  
 Streambank Protection (SRP)  
 Plan & Details  
 Summers Property Streambank Stabilization  
 File No. \_\_\_\_\_  
 Drawing No. \_\_\_\_\_  
 Sheet of \_\_\_\_\_  
 NRCS

# Supplemental Material

Summers Property Streambank Stabilization  
1630 Revello Drive, Sunnydale, CA 94555

1. Best Management Practices from Box 23
2. U.S. Fish and Wildlife Service list of Federal Endangered and Threatened Species
3. California Natural Diversity Database State and Federal Endangered Species, Threatened Species and Species of Concern within 3 miles of the project site.

## Sample Best Management Practices (BMPs)



### **Guidelines For Harvesting Live Willow Materials In Riparian Areas**

#### **Background:**

This information sheet is intended for guidance in reducing the risk of environmental damage when harvesting live willow plant materials for use in restoration projects. It does not supersede or override guidance or special requirements issued by the California Department of Fish and Game (DFG) or other permitting agencies. It is assumed that harvest areas and timing of harvest have been reviewed by the NRCS and that concurrence has been provided by DFG.

The NRCS shall not be held responsible or liable for any trespass or injuries that may be incurred during transit, harvest, or transport of plant materials. It is assumed that parties harvesting willow materials have made contact with landowners where the harvest is undertaken and that entry or special requirements for treatment and use of the land have been agreed on between harvesters and land owners/ managers.

#### **Harvesting Guidelines:**

- 1) Unless otherwise marked or noted, no willows greater than 4 inches in diameter at breast height will be taken.
- 2) Plant materials will be cut cleanly and all harvested material will be removed from the stream channel.
- 3) No motorized equipment will be allowed on creek banks or in the stream.
- 4) Care will be taken to ensure that fuels, oils, and solvents from chainsaws or other approved cutting devices do not spill in the creek environs. All refueling and oiling will take place outside of the creek channel.
- 5) Unless specified, no more than  $\frac{1}{3}$  to  $\frac{1}{2}$  of willow plant materials should be taken. Plant material should be taken from thickets where shading of the stream will not be reduced to any significant degree.
- 6) Where possible, harvest willows from the stream channel area first and then from banks. Where willow thickets in the channel have deflected flows against the bank, spot willow removal may be used to remove a snag condition, as directed by NRCS personnel.
- 7) Harvest crews will tread lightly on the channel bed and banks and care will be taken to avoid disturbing other plants and animals.
- 8) Harvesting should not be undertaken in areas with standing water or pools unless specific guidance has been granted by DFG.
- 9) Harvest activities should cease by October 15, unless continuance of work is approved by DFG.

**Choosing Plant Materials - Guidelines:**

- Avoid using harvested sandbar willow (*Salix sessilifolia*) for restoration projects.
- Willows species recommended for use in restoration work include red willow (*Salix laevigata*) and Arroyo willow (*Salix lasiolepis*).
- For willow post revetments, posts should ideally be straight material 3 to 4 inches in diameter and at least 5 to 6 feet in length.
- Willow cuttings used as live stakes should be 1 to 2 inches in diameter, relatively straight, and at least 18 inches long.
- Willow materials for fascine bundles, revetment weavings, and brush mattress weavings should be left as long as possible. Small diameter stems are acceptable and should range from ½ to 1 ½ inches in diameter for main stems.
- Don't leave freshly-harvested material in the sun for more than 2 hours. Have a cool, shady, and preferably moist place to store cuttings.
- Harvested plant materials need to be planted right-side-up! To make sure mistakes aren't made, make an angular cut at the bottom of the cutting to identify proper orientation. This angular cut will also aid in post installation.
- If wood will be planted in dry summer conditions, consider stripping the leaves off and always store freshly-harvested material in cool, shady conditions. Keep plant materials moist until planting. Water newly-planted wood generously until cool, moist fall conditions commence.

**Statement:**

*I have read the background information and willow harvesting guidelines and agree to comply with the stated conditions. I will contact the landowner/land manager of the harvest site and will closely coordinate with NRCS.*

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Landowner contact name and phone: \_\_\_\_\_

Harvester contact name and phone: \_\_\_\_\_

Harvest Property Location: \_\_\_\_\_

NRCS Contact: \_\_\_\_\_



NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE SPECIFICATION

**580 - STREAMBANK AND SHORELINE PROTECTION**

**I. SCOPE**

The work shall consist of furnishing of materials and constructing streambank protection measures to the lines, grades, elevations and dimensions as shown on the drawings or as staked in the field.

**II. SITE PREPARATION**

Trees and brush on the banks as marked in the field or shown on the drawings shall be removed and disposed of in designated areas. Removal of any trees and brush shall be done in such a manner as to avoid damage to other trees and property. Disposal of trees, brush, and other materials shall be performed to have the least detrimental effect on the environment.

Fallen trees, stumps, debris, minor ledge outcroppings and sand and gravel bars as shown on the drawings shall be removed and disposed of in designated areas.

Clearing and disposal methods shall be in accordance with state and county laws with due regard to the safety of persons and property.

**III. BANK PROTECTION MEASURES**

The type and extent of bank protection measures shall conform to the structural requirements of the specifications listed on the Practice Requirements sheet.

**IV. FENCING**

Fencing shall be installed at locations and of the materials shown on the drawings.

**V. VEGETATIVE COVER**

Unless otherwise specified, a protective cover of vegetation shall be established on the disturbed area. The planting of vegetative materials shall conform to the requirements of Practice Specification 342, Critical Area Planting.

**VI. SPECIAL MEASURES**

Measures and construction methods shall be incorporated as needed and practical that enhance fish and wildlife values. Special attention shall be given to

protecting visual resources and maintaining key shade, food and den trees.

**VII. CONSTRUCTION OPERATIONS**

Construction operations shall be done in such a manner that erosion and air and water pollution are minimized and held within legal limits. The owner, operator, Contractor or other persons will conduct all work and operations in accordance with proper safety codes for the type of construction being performed with due regards to the safety of all persons and property.

The completed job shall be workmanlike and present a good appearance.

**OPERATION AND MAINTENANCE ITEMS**

A properly operated and maintained streambank or shoreline protection is an asset to your farm. The streambank or shoreline protection was designed and installed to stabilize an eroding area. The estimated life span of this installation is at least 10 years. The life of this installation can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic maintenance and may also require operational items to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

Check all rock riprap sections for accelerated weathering and displacement. Replace to original grades if necessary.

Maintain vigorous growth of vegetative coverings. This includes reseeding, fertilization and application of herbicides when necessary. Periodic mowing may also be needed to control height.

All settlement or cracks in the soil should be investigated to determine the cause and immediately repaired.

If fences are installed, they shall be maintained to prevent unauthorized or livestock entry.

Remove debris that may accumulate at this section, and immediately upstream or downstream from this installation.

Control livestock access on unfenced areas.

Eradicate or otherwise remove all rodents or burrowing animals. Immediately repair any damage caused by their activity.

Immediately repair any vandalism, vehicular, or livestock damage.

Other items specific to your project are listed on the "Practice Requirement" sheet.

NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE SPECIFICATION

**391 – RIPARIAN FOREST BUFFER**

**I. SCOPE**

The work shall consist of furnishing and planting trees and/or shrubs at the locations as shown on the drawings or as staked in the field.

Planting will be done to establish or increase the numbers of plants to intercept sediment, nutrients, pesticides, and other materials in surface runoff and to reduce nutrients and other pollutants in shallow subsurface water flow.

The woody vegetation in the buffer provides food and cover for wildlife, helps lower water temperatures by shading the waterbody, and slows out-of-bank flood flows. Additionally the vegetation nearest to the waterbody provides litter fall and large wood important to fish and other aquatic organisms as nutrient and structural components.

**II. MATERIALS**

Plants and numbers shall be as stated on the Practice Requirements Sheet.

Plants found to be root or pot bound will not be acceptable. Plants shall be vigorous and free of disease, insect pests, eggs, or larvae. Plant materials shall be grown in nurseries which have been inspected by the State Department of Agriculture.

Water shall be free of injurious amounts of oil, salt, acid, alkali, or any other toxic substance.

**III. TIME OF PLANTING**

The time period for planting shall be as stated on the Practice Requirement Sheet.

Surface soil should be moist, not saturated or dry. Care should be taken to ensure proper spacing.

Plantings will be made after the danger of heavy freezing has passed and soil moisture conditions are proper. Soil moisture conditions may be waived if plants are watered at the time of planting.

**IV. TEMPORARY STORAGE OF PLANTING STOCK**

Only viable planting stock grown from locally adapted seed shall be planted. Planting stock should be maintained in good condition from the time received until planted. This will include, but is not limited to, unpacking, storage, heeling in, transport to the planting site, and keeping plants protected and moist until and during planting.

- Care for stock before planting shall include:

Bareroot stock:

If seedlings are planted within a few days after they are received, they may be left in the shipping container and stored in a cool, moist environment (preferred temperature of 34-40 degrees F.). Open the container (stock may be tied in bundles and should remain so) and check root moisture and lightly water as needed. Do not stack bundles.

When planting is delayed more than 1 week:

- Store plants in enclosed areas from 34 to 40 degrees F. off the floor.
- If ice is utilized, do not allow contact with the roots.
- Bales of plants should not be stored higher than 3 feet.
- Roots will be facing one way for periodic watering and fungicide treatment. Seedling roots will be kept moist.

Or

- Heel-in beds. Make a trench with one 30 to 45-degree backslope. Remove seedlings from the shipping bundles, line out planting stock against sloped side and backfill. Pack soil firmly around the roots. Keep roots 1 to 2 inches below the ground line. Water as needed. A moderately course-textured soil is preferred.

2. Container Stock: Place in the shade or protected area (preferred temperature of 34-40 degrees F.) and water as needed.
3. Care for seedlings during planting shall include:
  - a. Bareroot: Keep seedlings covered and moist while planting. Ample water, or a water-saturated material (burlap, sawdust moss, etc.) must be kept in all planting containers to insure the seedlings remain moist.
  - b. Containerized Stock: Leave seedlings in the planting container until time to be planted. Then take them out of the container just prior to placing them in the planting hole.

## V. PLANTING PROCEDURES

The plants shall be planted according to the arrangement as shown on the plans.

Plant seedlings in a vertical position with the root collar approximately one-half inch below the soil surface. Plant seedling roots straight down, not twisted, balled or J-shaped. Lateral roots will be spread to the sides.

Plant in adequately sized, sod-free holes or furrows for proper root development. The planting hole must be deep and wide enough to permit the roots to be spread out as naturally as possible.

After planting, pack the soil firmly around each seedling to eliminate air pockets.

On certain site, all species will be subject to unacceptable damage while on other sites no species may be subject to damage and plant protection may not be necessary.

Protect the plants by controlling rodents, and excluding livestock from original planting. Protect until planting has reached a height where it will not be browsed.

Potential mortality, weed competition, and pest populations may require additional seedlings initially or replanting later.

Replant, as necessary and practicable, to maintain a fully productive stand. Replacement seedlings should preferably be of the same age as the planting seedlings.

## VI. SEEDLING PROTECTION

### 1. COMPETING VEGETATION CONTROL

Physical Removal - Use planting hoe, shovel, brush cutting tool, chemicals, or chain saw to clear competing vegetation in the immediate area (a minimum of 3 feet in all directions) of the seedling.

NOTE: Restricted use chemicals can only be recommended or applied by licensed applicators, and are subject to Federal and State regulations.

Mulch - Spread mulch material (paper, plastic, geotextile, etc.) around base of seedlings at least 1.5 feet in all directions from the seedling. Mulch must have good contact with the soil to allow rainfall to percolate through rather than run off. (See Mulching Specification 484 for additional specifications.)

### 2. BROWSING OR FORAGING ANIMAL CONTROL

Physical Barriers - Erect physical barriers where animals are causing damage to seedlings. Physical barriers include: fences, nets, tubes, sleeves, and budcaps.

#### a. Material Specifications

- Fencing - (See Fencing #382 for specifications).
- Whole tree nets shall be of 6-15 mil photodegradable polypropylene fine mesh.

- Whole tree protectors shall be:

- Photodegradable polypropylene mesh tubes of 30 - 50 mil, or of spun polyester (Reemay) sleeves, 5 inches in diameter, 2-3 feet in length. The tubes will be fastened to a 24 inch 1x2 stake with 18 inches extending above the ground by one staple or a tie wire. The tubes will be flush with the ground.

- Chicken wire tree protection: Chicken wire with a mesh that does not exceed 1 inch will be shaped to form a cylinder a minimum of 5 inches in diameter and 18 inches high. A minimum of one 24 inch 1x2 stake with 18 inches extending above the ground will be used to support the stake by 2 evenly spaced staples or tie wires. The chicken wire will be flush with the ground. The barrier must be removed when the trunk diameter is within one-half inch of the chicken wire diameter.

Terminal leader protectors shall be of 15 - 50 mil photodegradable polypropylene mesh tubes, or of spun polyester (Reemay) sleeves, 1-3 inches in diameter, cut to length to enclose the leader and

leave 4-8 inches above the end of the leader to allow for growth.

- Budcaps shall be of spun polyester (Reemay) sheets or weatherproof paper cut into 4 by 5 inch rectangular pieces.

#### b. Method and Placement

- Apply tubes, nets, budcaps, and sleeves directly to seedlings to prevent browse damage.
- Fold budcaps lengthwise and staple around the terminal leader and bud, forming a protective cylinder.
- Staple leader tubes to small branchlets along the leader to prevent loss from wind.
- Secure net tubes with pins of 9 gauge wire, 14 inches long, hooked through the mesh and pressed into the ground.
- Support sleeves and tubes, on small seedlings (plugs and 2-0's), with a 3-4 foot stake (wood or bamboo) driven into soil next to the seedling to keep the seedling upright.

Repellents - Apply chemical repellents to control damage from browsing or foraging animals.

#### a. Materials

- Use commercially available repellents.

#### b. Application

- Follow label instructions. Repellents must be applied correctly, or damage to seedlings or injury to the applicator may occur.

NOTE: Restricted use chemicals can only be recommended or applied by licensed applicators, and are subject to Federal and State regulations.

#### Physical Removal -

Animal Pests - Physically remove animal pests causing damage to seedlings (foraging or browsing animals, or rodents) by trapping or hunting. Follow State and local hunting and trapping regulations.

Insect and Disease Pests - Physically remove insect or disease pests by:

- removing the affected branches, leaves or needles by pruning or (See Tree/Shrub Pruning #660 for specifications) by removing the affected individual trees or groups of trees.

Chemical Control - Apply chemical toxicants to control insect or disease pests.

#### a. Materials

- Use commercially available pesticides.

#### b. Application

- Properly identifying the pest.
- Apply chemical according to label instructions. - Follow proper container disposal procedures.

NOTE: Restricted use chemicals can only be recommended or applied by licensed applicators, and are subject to Federal and State regulations.

Biological Control - Use biological control to achieve protection from pests and to decrease the need for chemical use. Integrate biological control with other pest management practices.

#### a. Methods

- Introduce disease-causing organisms (i.e., *Bacillus thuringiensis*).
- Encourage increase of natural enemies through habitat enhancement.
- Introduce natural enemies from other areas.

#### b. Application

- Identify the causal agent and consult with a pest management specialist to identify disease causing organisms, natural enemies, or habitat requirements of natural enemies, and for treatment specifications.

Habitat Manipulation - Modify site conditions that are favorable to the destructive pests. Use habitat manipulation if the specific treatments do not contradict site limitations or landowner objectives.

#### a. Methods

- Plant forage species preferred by browsers to reduce browsing of seedlings.
- Plant species not browsed by the pest species
- Eliminate preferred habitat of pest species.

#### b. Application

- Identify the pest.
- Determine its habitat needs.
- Alter the affected site to discourage continued residence by the pest or to alter the feeding patterns of the pest.

#### EXCESS HEAT

Artificial Shade - Apply shade cards or collars where moisture is limiting and planting occurs on a south facing slope and if natural shade (debris or stumps) is not available.

#### a. Material Specifications

- Shade cards and collars shall be made of heavy weatherproof cardboard, wood, Styrofoam or other

suitable material.

- Minimum dimensions of cards shall be 8 inches by 12 inches, collars shall be 3 inches in diameter and 4 inches in height.
- Cards will be held in place by stake (wire or wood) attached to the card or inserted into the card.

#### b. Application

- Shade cards shall be placed 3 inches from seedling.
- Shade cards shall be placed to the south of seedlings with an east-west orientation.
- The bottom edge of the shade card shall be placed as close to the ground as possible.
- Shade collars shall be placed around the base of the seedling.

### DROUGHT

If irrigation water is available irrigate at a rate of 1 gallon per tree soon after planting. (See Irrigation System #441/442/443 and Irrigation Water Management #449 for specifications). Apply supplemental water at the following rates when more than 2 months of the growing season are droughty.

Recommended irrigation rates:

- Establishment year:  
1 gallon per seedling per week.
- Second growing season:  
2 gallons per seedling per week.
- Third growing season:  
4 gallons per seedling per week.

Discontinue watering in the late summer to allow trees and shrubs to harden off. In the late fall, if soil moisture is depleted, a deep watering is beneficial in preventing winter desiccation damage.

### VII. BASIS OF ACCEPTANCE

After the trees and/or shrubs have been planted, and after an establishment period of 12 months, an on-site inspection will be conducted to determine if 80% of the plants have survived, and are healthy with signs of good growth.

### VIII. OPERATION AND MAINTENANCE

Plants shall be protected from fire, insects, disease, and animals until established.

Replanting will be required when survival is inadequate. Replant, as necessary and practicable, to maintain a fully productive stand. Replacement

seedlings should preferably be of the same age as the plantation seedlings.

Control of noxious weeds must be conducted.

Damaging pests will be monitored and controlled.

Competing vegetation will be controlled until the woody plants are established.

Supplemental watering may be desirable to ensure adequate survival.

Periodic applications of nutrients may be needed to maintain plant vigor.

### Maintenance

**Weed Control:** Cultivation, cutting, scalping, placement of geotextile, herbicides or mowing may be used to control competing vegetation adjacent to and in between plants to a diameter of 3 feet for wildland plants. When cultivation is used, the tillage depth must not exceed four inches. The planted area may need to be marked with flagged stakes or lathe to avoid accidental tillage. Continue weed and grass control until unwanted vegetation no longer interferes with seedling growth. Follow specific herbicide instructions on the label and/or recommendations provided by your local Agricultural Commissioner.

**Pest Control:** Control harmful animals, diseases and insects by using rodent guards, trapping, fencing, removal of habitat or proper use of approved chemicals as appropriate to the identified pest. Pests include cattle, deer, rabbits, grasshoppers, squirrels, mice, gophers, and porcupines, etc.

**Physical Barrier Maintenance:**

**Budcaps and sleeves:**

- Inspect the treated area annually to assess need to repair, replace, remove, or adjust physical barriers.
- Budcaps and sleeves may need annual replacement or adjustment until trees grow beyond the reach of grazing or browsing animals.
- Nets and net tubing may require physical removal in areas of heavy shade (generally north slopes greater than 20% slope) to prevent girdling.

**Repellants:**

- Inspect the treated area annually to assess need to reapply.

**Chemical control:**

- Inspect the treated area annually to assess need to reapply or adjust treatment.

**Biological control:**

- Evaluate biological control measures annually for effectiveness and adjust practices as necessary to achieve desired results.

**Habitat manipulation:**

- Evaluate habitat manipulation measures annually for effectiveness and adjust as necessary to achieve desired results.

**Excess Heat:**

- Inspect the treated area annually, until seedling establishment is assured, to assess need to repair, replace, remove, or adjust shade cards.

**Mortality:** Assess mortality 1 year after planting. Consider 80 percent survival after two years to be adequate.

**Fire Hazard:** Maintain firebreaks, and/or fuelbreaks adjacent to and surrounding the planted area.

NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE SPECIFICATION

**612C - TREE / SHRUB ESTABLISHMENT  
POLE PLANTINGS/CUTTINGS**

**I. SCOPE**

The work shall consist of furnishing and planting trees and/or shrubs at the locations as shown on the drawings or as staked in the field.

Planting will be done to establish or increase the numbers of plants, to conserve soil and moisture, beautify an area, protect a watershed, or produce wood crops.

Planting is applicable in open or understocked areas, beneath less desirable trees, where erosion control or watershed protection is needed, where greater natural beauty is wanted, or where a combination of these is desired.

**II. MATERIALS**

Plants and numbers shall be as stated on the Practice Requirements Sheet.

Collect cuttings during the dormant season from a healthy stand. Do not remove more than 2/3ds of the total plant. Select cuttings with leaf buds near the top of each cut.

Larger diameter cuttings have a greater supply of stored energy for rooting than smaller diameter cuttings. The bigger diameter and longer lengths are better suited for severely eroded areas and fluctuating water tables.

Pole planting materials should have a butt diameter of 1 to 4 inches in diameter. Their minimum length should be the depth to the water table plus 3 feet where they will be planted.

Slips should be from ¼ to ¾ inches in diameter at the butt end and 10 to 24 inches long.

Trim off all side and terminal branches.

Remove all of the flower buds and the terminal bud.

Cuttings can be tied in bundles for ease of movement to the planting site and if necessary, storage facilities.

Plants shall be vigorous and free of disease, insect pests, eggs or larvae. When plant materials are purchased, they shall be grown in nurseries which have been inspected by the State Department of Agriculture.

*Mulch:* see Practice Specification 484 - Mulching

Water shall be free of injurious amounts of oil, salt, acid, alkali, or any other toxic substance.

**III. TIME OF PLANTING**

The time period for planting shall be as stated on the Practice Requirement Sheet.

Control noxious weeds prior to planting.

Surface soil should be moist, not saturated or dry.

Plantings will be made after the danger of heavy freezing has passed and soil moisture conditions are proper. Soil moisture conditions may be waived if plants are watered at the time of planting.

**IV. TEMPORARY STORAGE OF PLANTING STOCK**

A. Care for stock before planting shall include:

1. If planted within 7 days of collection:

Place the materials in water or refrigerate.

2. If planted after 7 days of collection:

Store the materials in a cool, moist environment (preferred temperature of 34-40 degrees F. and 50 to 70 percent humidity).

Monitor conditions regularly to detect problems such as drying, sprouting, or mold.

B. Care during planting shall include:

1. Only the materials required to be planted each day should be removed from storage.

2. On the site the cuttings should be stored out of direct sunlight and protected from the wind. Keep covered and moist while planting. Ample water or a water-saturated material (burlap, sawdust moss, etc.) may be used to insure the cuttings remain moist.

## V. PLANTING PROCEDURES

The plants shall be planted according to the arrangement as shown on the plans and/or drawings.

Planting locations will be staked or otherwise marked to assure proper alignment of rows and spacing.

### *Pole plantings:*

Plant in adequately sized, sod-free holes. Auger a hole to the water table. Place materials in the augured hole one-half foot above the growing season water table.

After planting, pack the soil firmly around each pole to eliminate air pockets. "Mudding" by filling the hole with water and then adding more soil to make a slurry can remove air pockets.

### *Cuttings:*

Plant cuttings upright as vertically as possible. Place at least 2/3ds of the cutting in the ground.

Leave no more than 2 leaf buds above the ground. If more than two leaf buds, more than ¼ of the cutting, or 6 inches of the cutting is above ground, remove the excess buds and/or trim the cutting.

## VI. PROTECTION

On certain sites, all species will be subject to unacceptable damage, while on other sites no species may be subject to damage and plant protection may not be necessary.

Protect the plants by controlling rodents, such as beaver, and excluding livestock from the planting. Protect until planting has reached a height where it will not be browsed.

Replant, as necessary and practicable, to maintain a fully productive stand. Replacements should preferably be of the same age as the originally planted materials.

*Chicken wire tree protection:* Chicken wire with a mesh that does not exceed 1 inch will be shaped to form a cylinder a minimum of 5 inches in diameter and 18 inches high. A minimum of one 24 inch 1x2 stake with 18 inches extending above the ground will be used to support the stake by 2 evenly spaced staples or tie wires. The chicken wire will be flush with the ground. The barrier must be removed when the trunk diameter is within one-half inch of the chicken wire diameter.

*Rigid polypropylene - mesh tubes tree protection:* Tubes will be of a diamond pattern with a minimum 30 mil. strand diameter. The tubes will be a minimum of a 5 inch diameter and 18 inches high. The tubes will be fastened to a 24 inch 1x2 stake with 18 inches extending above the ground by one staple or a tie wire. The tubes will be flush with the ground.

## VII. BASIS OF ACCEPTANCE

After the trees and/or shrubs have been planted, and after an establishment period of 12 months, an on-site inspection will be conducted to determine if 80% of the plants have survived, and are healthy with signs of good growth.

## VIII. OPERATION AND MAINTENANCE

Plants shall be protected from fire, insects, disease, and animals until established.

Replanting will be required when survival is inadequate. Replant, as necessary and practicable, to maintain a fully productive stand. Replacement seedlings should preferably be of the same age as the plantation seedlings.

Control of noxious weeds must be conducted.

Damaging pests will be monitored and controlled.

Competing vegetation will be controlled until the woody plants are established.

Supplemental watering may be desirable to ensure adequate survival.

Periodic applications of nutrients may be needed to maintain plant vigor.

Flood debris lodged around cuttings and pole plantings should be removed to allow for growth and prevent excessive shading.

**Maintenance**

*Weed Control:* Cultivation, cutting, scalping, placement of geotextile, herbicides or mowing may be used to control competing vegetation adjacent to and in between plants to a diameter of 3 feet for wildland plants. When cultivation is used, the tillage depth must not exceed four inches. The planted area may need to be marked with flagged stakes or lathe to avoid accidental tillage. Continue weed and grass control until unwanted vegetation no longer interferes with seedling growth. Follow specific herbicide instructions on the label and/or recommendations provided by your local Agricultural Commissioner.

*Pest Control:* Control harmful animals, diseases and insects by using rodent guards, trapping, fencing, removal of habitat or proper use of approved chemicals as appropriate to the identified pest. Pests include cattle, deer, rabbits, grasshoppers, squirrels, mice, gophers, and porcupines, etc.

*Mortality:* Assess mortality 1 year after planting. Consider 80 percent survival after two years to be adequate.

NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE SPECIFICATION

**441 - IRRIGATION SYSTEM, MICROIRRIGATION**

**I. SCOPE**

The work will consist of furnishing and installing materials as required to provide for a complete microirrigation system for the tract of land as shown on the drawings.

**II. SOURCE OF WATER**

The source of water shall be as shown on the drawings, and as previously determined by the landowner. Water rights for the use of the water are the responsibility of the landowner. The source shall provide the full capacity as may be needed for the system being installed.

**III. INSTALLATION**

The materials shall be fabricated in accordance with the manufacturer's instructions. The system shall be tested to determine if the system is in proper working order, and will deliver the required capacity to meet the crop consumptive use, and the specified uniformity distribution rate.

**IV. BASIS OF ACCEPTANCE**

The basis of acceptance shall be the ability of the system to deliver the required amount of water to meet the peak consumptive use of the crop, with a distribution uniformity rate of 80 percent or greater.

**OPERATION AND MAINTENANCE ITEMS**

A properly operated and maintained microirrigation system is an asset to your farm. This irrigation system was designed and installed to apply irrigation water to meet the needs of the crops without causing excessive erosion or runoff. The estimated life span of this installation is at least 10 years. The life of this system can be assured and usually increased by developing and carrying out a good operation and maintenance program.

This practice will require you to perform periodic maintenance and may also require operational items to maintain satisfactory performance. Here are some recommendations to help you develop a good operation and maintenance program.

Only operate system when needed to furnish water for plant growth, the soil may also be used to store moisture within the rooting depth of the plant.

Operate the system according to the parameters for the area.

Check to make sure that all connections are watertight and all valves are working properly.

Make sure that the filter system is working, even if it is automatic it needs constant monitoring, make adjustments if needed.

Periodically examine each emitter for proper operation and replace if defective.

Exclude all livestock from the equipment or irrigated areas.

Monitor the crop noting areas of moisture stress and repair or adjust system operation.

During non-seasonal use place the system in an area where it will not be damaged but secure, if necessary.

Maintain all pumps, agitators, piping, valves and other electrical and mechanical equipment in good condition following the manufacturers' recommendations.

Eradicate or otherwise remove all rodents or burrowing animals. Immediately repair any damage caused by their activity.

Immediately repair any vandalism, vehicular or livestock damage.

Other items specific to your project are listed on the "Practice Requirements" sheet.

**U.S. Fish & Wildlife Service**

**Sacramento Fish & Wildlife Office**

**Federal Endangered and Threatened Species that Occur in  
or may be Affected by Projects in the Counties and/or  
U.S.G.S. 7 1/2 Minute Quads you requested**

**Document Number: 100427034902**

**Database Last Updated: December 1, 2009**

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**RUTHERFORD (500B)**

**Listed Species**

**Invertebrates**

- *Syncaris pacifica*
  - California freshwater shrimp (E)

**Fish**

- *Hypomesus transpacificus*
  - delta smelt (T)
- *Oncorhynchus mykiss*
  - Central California Coastal steelhead (T) (NMFS)
  - Central Valley steelhead (T) (NMFS)
  - Critical habitat, Central California coastal steelhead (X) (NMFS)
- *Oncorhynchus tshawytscha*
  - Central Valley spring-run chinook salmon (T) (NMFS)
  - winter-run chinook salmon, Sacramento River (E) (NMFS)

**Amphibians**

- *Rana aurora draytonii*
  - California red-legged frog (T)

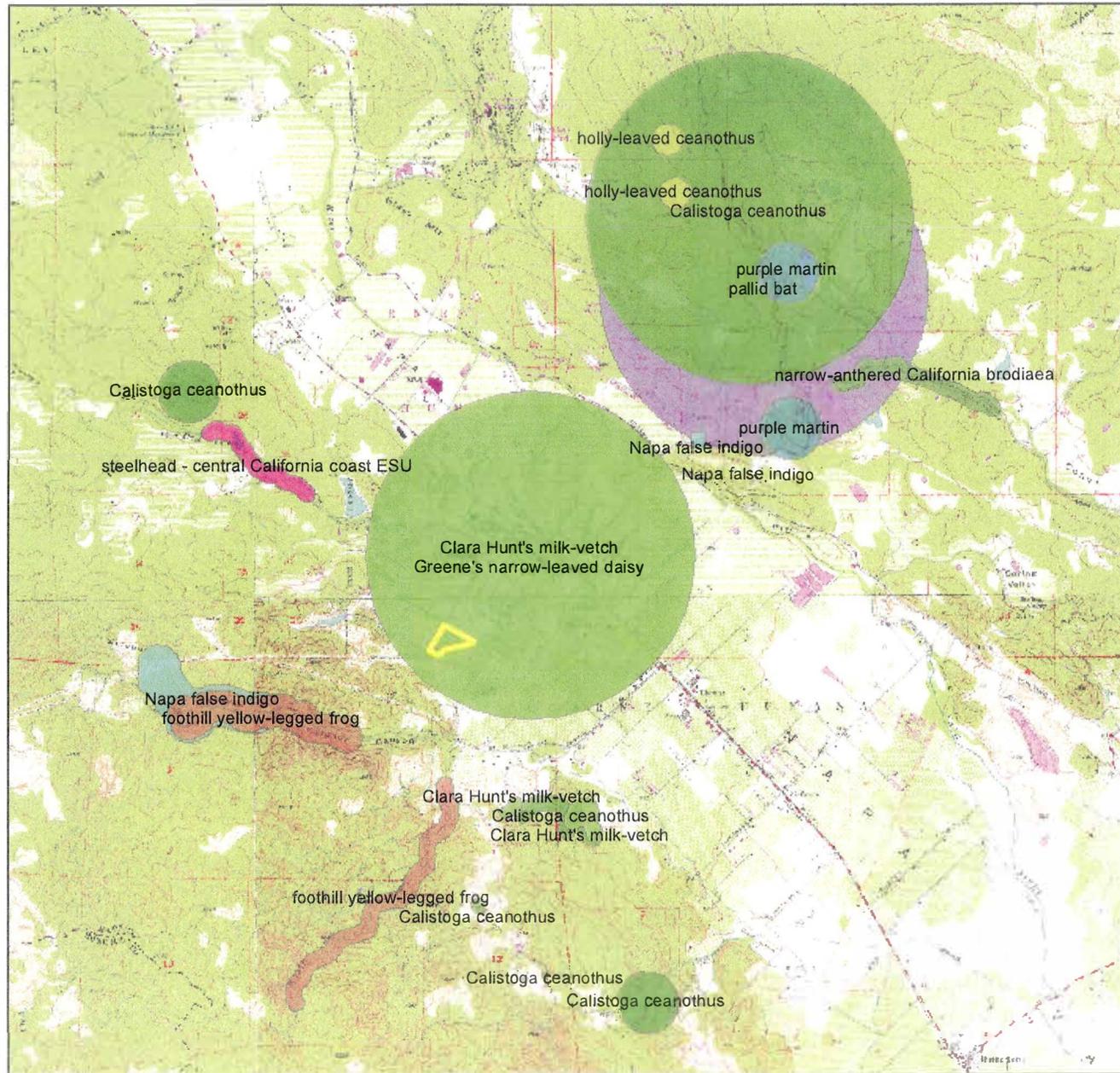
**Birds**

- *Strix occidentalis caurina*
  - northern spotted owl (T)

# Summers Property Streambank Stabilization

## CNDDDB 3-Mile Radius Listings

Field Office: NAPA SERVICE CENTER  
 Agency: USDA-Natural Resources Cons. Service  
 State and County: CA, NAPA



### Legend

2010EQIP

### CNDDDB Listed Species

#### Common name

- Calistoga ceanothus
- Clara Hunt's milk-vetch
- Greene's narrow-leaved daisy
- Napa false indigo
- foothill yellow-legged frog
- holly-leaved ceanothus
- narrow-anthered California brodiaea
- pallid bat
- purple martin
- steelhead - central California coast ESU



Source: California Natural Diversity Database, March 2010.  
 Produced and updated by the California Department of Fish and Game



California Department of Fish and Game  
 Natural Diversity Database  
 CNDDDB Wide Tabular Report

Name (Scientific/Common)	CNDDDB Ranks	Other Lists	Listing Status	Total EO's	Element Occ Ranks						Population Status		Presence		
					A	B	C	D	X	U	Historic >20 yr	Recent <=20 yr	Pres. Extant	Poss. Extirp.	Extirp.
<i>Amorpha californica</i> var. <i>napensis</i> Napa false indigo	G4T2 S2.2	CNPS: 1B.2	Fed: None Cal: None	45 S:3	0	1	0	0	0	2	1	2	3	0	0
<i>Antrozous pallidus</i> pallid bat	G5 S3	CDFG: SC	Fed: None Cal: None	398 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Astragalus claranus</i> Clara Hunt's milk-vetch	G1 S1.1	CNPS: 1B.1	Fed: Endangered Cal: Threatened	6 S:2	1	0	0	0	1	0	1	1	1	1	0
<i>Brodiaea californica</i> var. <i>leptandra</i> narrow-anthered California brodiaea	G4?T2T3 S2S3.2	CNPS: 1B.2	Fed: None Cal: None	29 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Ceanothus divergens</i> Calistoga ceanothus	G2 S2.2	CNPS: 1B.2	Fed: None Cal: None	26 S:6	2	0	1	0	0	3	3	3	6	0	0
<i>Ceanothus purpureus</i> holly-leaved ceanothus	G2 S2.2	CNPS: 1B.2	Fed: None Cal: None	39 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Erigeron greenei</i> Greene's narrow-leaved daisy	G2 S2	CNPS: 1B.2	Fed: None Cal: None	12 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Oncorhynchus mykiss irideus</i> steelhead - central California coast ESU	G5T2Q S2	CDFG:	Fed: Threatened Cal: None	29 S:1	0	1	0	0	0	0	0	1	1	0	0
<i>Progne subis</i> purple martin	G5 S3	CDFG: SC	Fed: None Cal: None	45 S:2	0	0	0	0	0	2	0	2	2	0	0
<i>Rana boylei</i> foothill yellow-legged frog	G3 S2S3	CDFG: SC	Fed: None Cal: None	783 S:2	0	1	0	0	0	1	1	1	2	0	0