COUNTY OF SANTA CRUZ INTEGRATED VEGETATION MANAGEMENT PLAN FOR ROADS NEAR PERENNIAL WATERS

Prepared for
County of Santa Cruz
Department of Public Works

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The County of Santa Cruz Department of Public Works (CSCDPW) requested preparation of an Integrated Vegetation Management Plan (IVMP) for Roads Near Perennial Waters to address new County policies adopted to comply with recent local and state directives. The plan applies to county-maintained roads within 150 feet of perennial waters, including streams, ponds, lakes, or inundated wetlands (**Figure 1**). This plan addresses integrated vegetation management recommendations for approximately 60 miles of the most sensitive roadside management areas among the approximately 600 miles of CSCDPW maintained roadways in Santa Cruz County. Though general management approaches would be similar to those presented here, specific management for an additional approximately 30 miles of county maintained roads meeting the selection criteria is anticipated for a future project.

1.1 GOALS AND OBJECTIVES

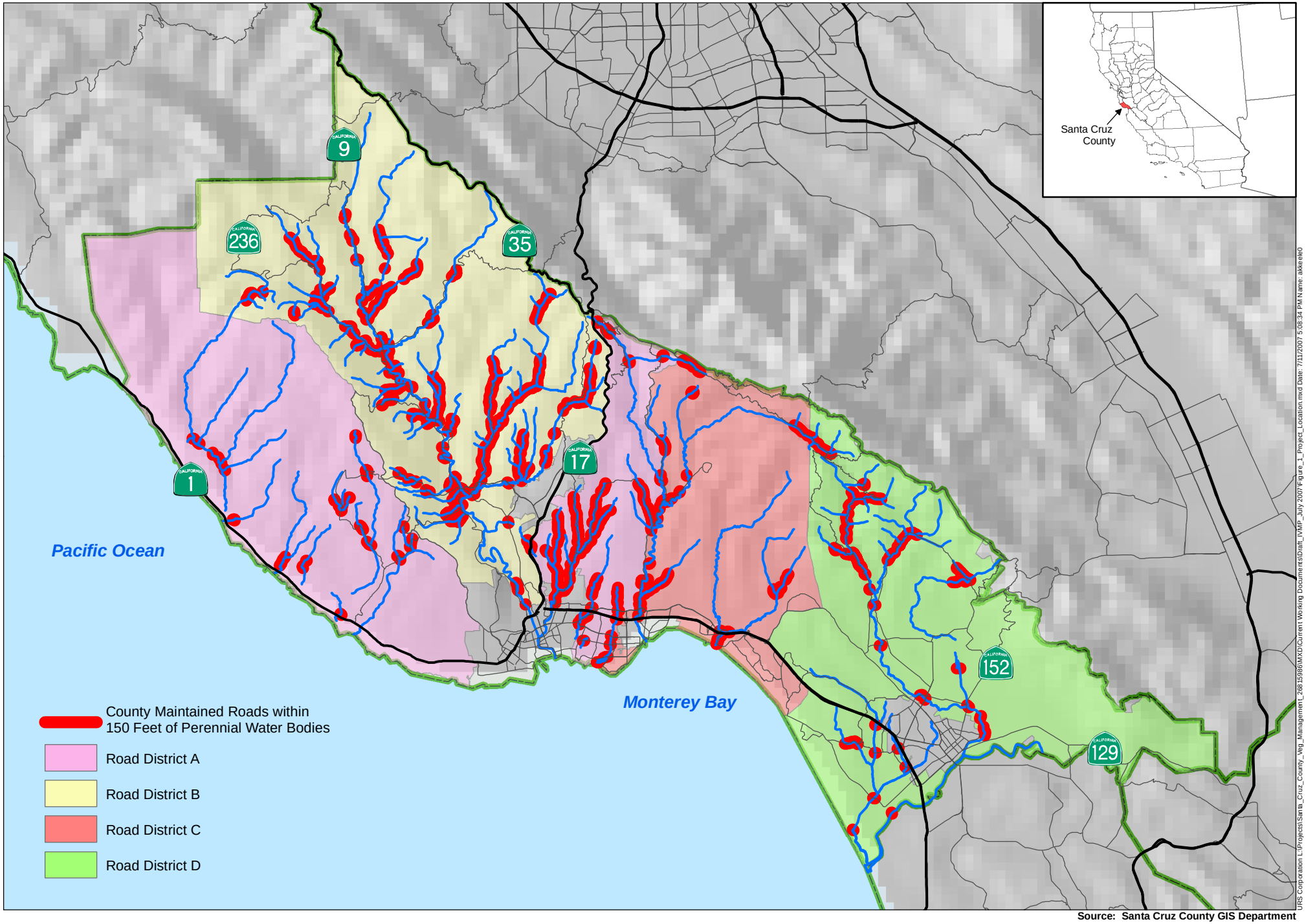
The basic premise of Integrated Vegetation Management is to plan and implement roadside maintenance activities to discourage or eliminate unwanted vegetation and promote desirable vegetation. The IVMP supports CSCDPW's long-range goals for the management of roadsides to:

- Create naturally stable, sustainable plant communities
- Improve effectiveness and efficiency in the control of target pest plant species, including trees and brush
- Reduce maintenance costs and herbicide use over time

The IVMP describes management synergies possible through coordinated roadside maintenance and vegetation management practices for two categories of roads and/ or easements: those within 150 feet of sensitive habitats (i.e., sensitive habitats are riparian, wetland and fisheries habitat) and a secondary management area located within 60 feet of perennial waters receives special consideration. Herbicide use within 60 feet of perennial waters requires review and approval from the County's Integrated Pest Management Department Advisory Group (IPM DAG).

Two primary objectives of the IVMP are to significantly reduce herbicide use and runoff while simultaneously reducing erosion and sediment discharge to creeks from county-maintained roadsides located adjacent to perennial waters. Sensitive habitats associated with perennial waters include riparian, wetland and fisheries habitats. Other objectives relate to highway user safety and control of legally designated noxious and nuisance weeds in the right of way, efficient and effective use of CSCDPW resources, and being a good neighbor to the many adjoining property owners. Conserving, restoring, or enhancing the natural scenic quality of the roadside is also an important objective. Minimizing visual impacts of maintenance such as wide spread "brown-out" from herbicides or shattered limbs from side trimming are examples of ways to maintain appropriate roadside visual standards.

This document and associated information management tools serve as the primary reference for maintenance of roadside vegetation on roadways near perennial waters. Included is detailed information on reoccurring routine maintenance practices, target pest plant infestations, ecologically sensitive areas, and other areas with special management considerations.



Source: Santa Cruz County GIS Department

0 2.5 5 Miles

URS	Santa Cruz County IVMP	Project Location	Figure 1
	26815986		July 2007

Also included are guidelines and prescriptions for roadside vegetation best management practices (BMPs). In effect, this plan supports CSCDPW compliance with state law by implementing the principles of Integrated Pest Management (IPM) on roadside vegetation, with a particular focus on the county's roadways where management activities have the greatest potential to affect sensitive biological resources.

By incorporating a combination of techniques and approaches based on species specific and site specific measures, integrated vegetation and pest management practices can successfully provide long-term control and management of pest plant populations while increasing native vegetative cover and reducing sediment discharge to adjacent creeks and perennial waters.

The management of roadside vegetation is a dynamic process, therefore it is important to continuously review and modify practices over time based on observations, monitoring and input from a variety of sources. Regular monitoring and follow-up within the IVMP area by CSCDPW personnel is considered an essential component for successful implementation of this program. A database should be created to record: a) IVM treatments by target vegetation and location and b) results, treatment success and observations. This data can be used to refine treatment processes and procedures over time. As new maintenance practices and procedures are implemented they should be evaluated and adjusted, as necessary, to maximize efficiency and effectiveness.

1.2 ROADSIDE MANAGEMENT STRATEGY

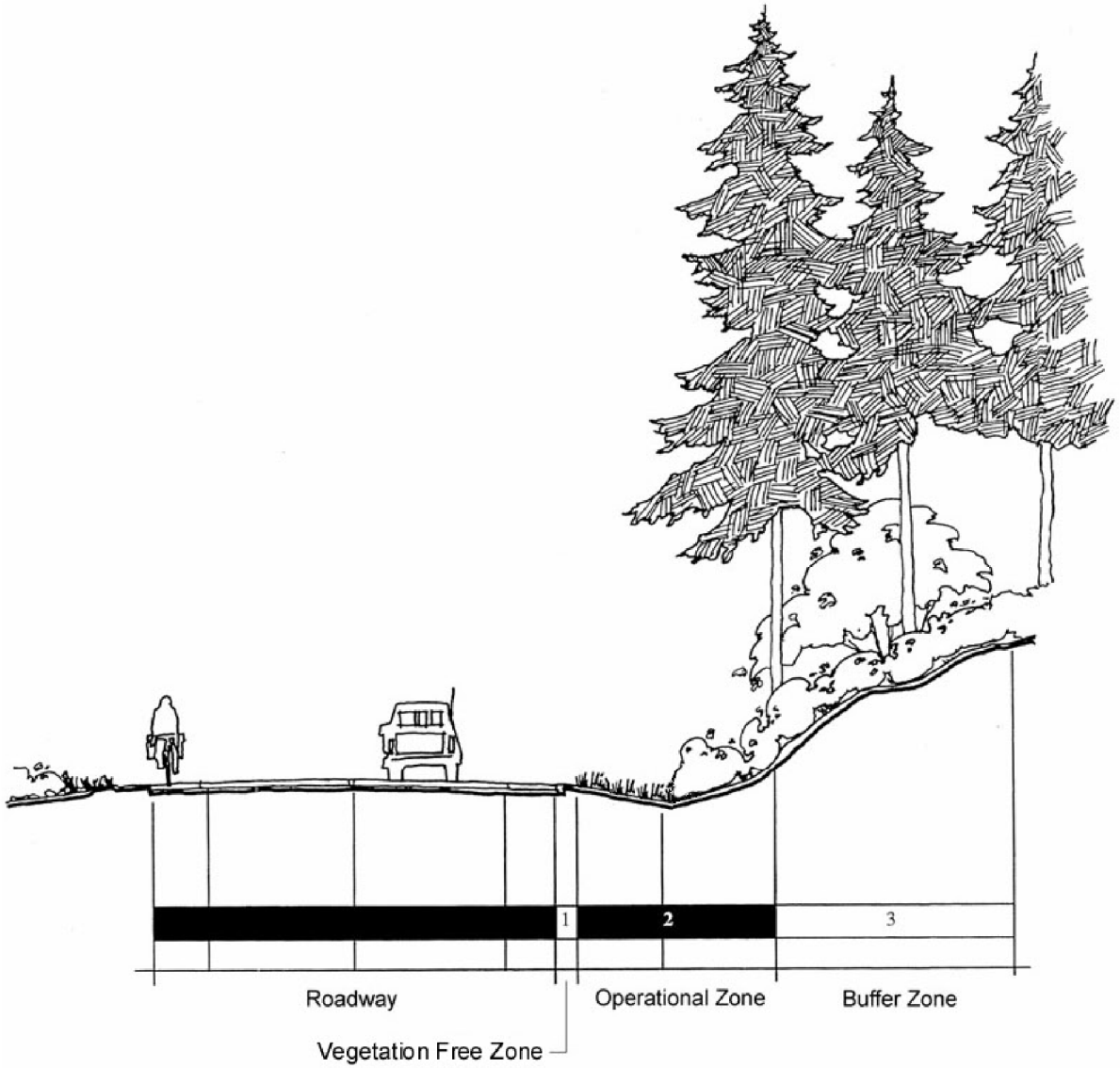
The 60 miles of IVMP roadside considered in this plan are shown in detail in a set of 112 maps, **Appendix A** Field Maps of Program Area by Road Maintenance District, at a scale of one inch equals 200 feet. The maps depict sensitive habitat, vegetation type (i.e., redwood forest), noxious weed infestation, and management feature locations associated with the 60 miles of targeted roadside. A table describing both the location and type of roadside management feature by road maintenance district is contained in **Appendix B (**Integrated Vegetation Management Activities and Database). Other road maintenance features within the IVMP area, such as target roadside sediment sources adjacent perennial waters or road failures are mapped and described in these appendices.

County roadsides are comprised of up to three cross sectional management and operation zones (**Figure 2**) for assigning management objectives, maintenance needs, and thresholds for triggering vegetation maintenance actions. Roadside vegetation management zones are defined as follows:

Zone 1 – A vegetation-free gravel shoulder, where needed, is maintained as a one to three-foot wide strip to provide for key maintenance, operational, safety, and pavement and guardrail preservation needs.

Zone 2 – The operational zone extends from the edge of Zone 1 or the pavement edge to a width necessary to provide for safe errant vehicular recovery, maintain sight distance at corners and intersections, and provide for other operational, safety, and environmental functions.

Zone 3 – In areas with sufficient right-of-way width, a buffer or transition zone extends from Zone 2 to the right-of-way line to provide a buffer or transitional area between the highway facility and adjacent land uses. This area is maintained selectively, and to the greatest degree possible as a self-sustaining plant community, to minimize erosion, and to minimize the growth of weeds and undesirable trees and brush.



Vegetation Free Zone
Gravel Shoulder
Maintained using mechanical and chemical methods to improve drainage and protect pavement.

Operational Zone
Low Vegetation
Maintained by mowing and IVM for sight distance, safety, and weed control.

Buffer Zone
Native/ Natural Vegetation
Maintained using IVM to encourage native self-sustaining plant communities.

Source: Washington State Department of Transportation

URS	Santa Cruz County IVMP	Typical Roadside Vegetation Management Zones	Figure 2
	26815986		**July 2007**

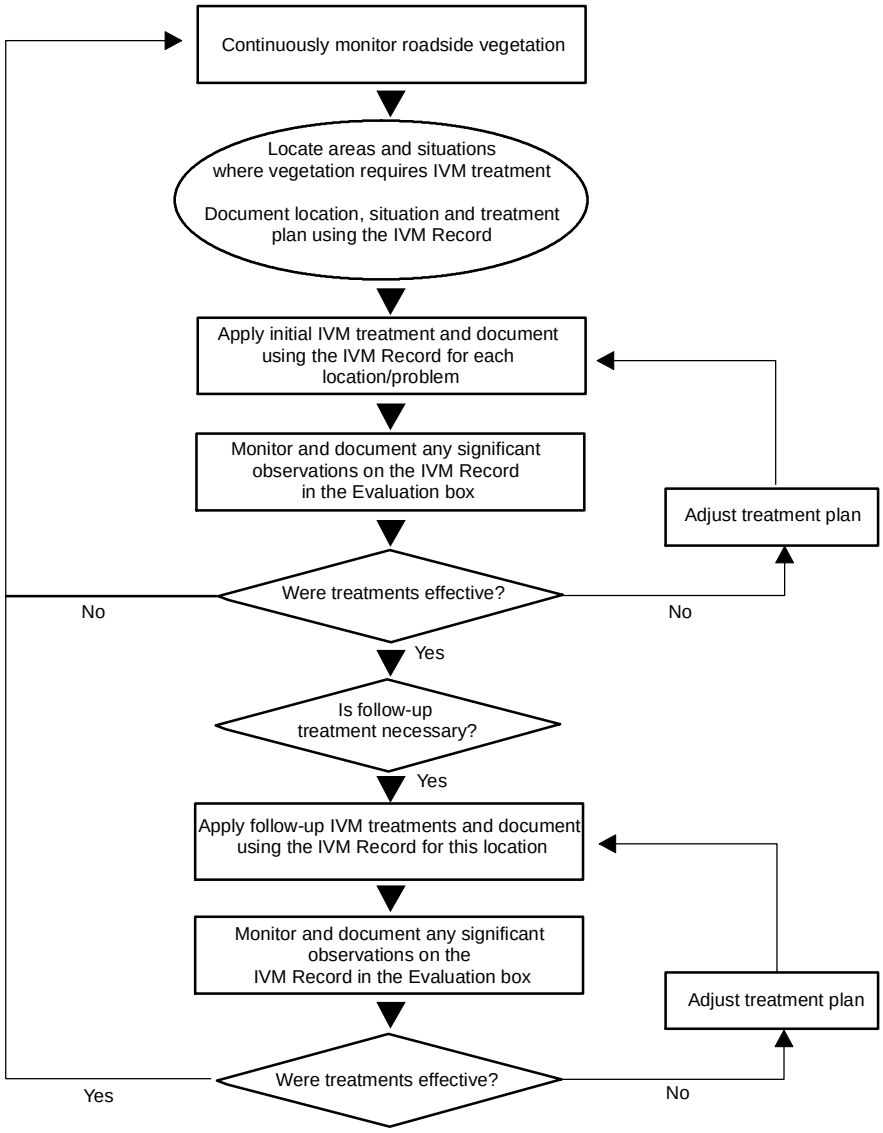
Not all management zones occur along all county-maintained roads. In some cases the narrow width of the right-of-way or adjoining land-use, limits the operational zones to Zone 1 and/or a narrow Zone 2 only. However, in some cases maintenance activities are conducted more consistently on an annual basis, such as maintenance of Zone 1 and routine mowing where specified. Noxious weed (i.e., target pest plants) species should be controlled throughout all zones.

The roadsides addressed in this plan can all be categorized as special or sensitive maintenance areas. However, road easements that are within 60 feet of perennial waters require special consideration to determine appropriate vegetation maintenance including: areas near creeks with fisheries, riparian or wetland habitats. Other areas of special consideration include those adjacent to landowners with special concerns (i.e., organic farms), areas where a higher level of maintenance is expected such as gateway interchanges or formally landscaped areas, or along highways that cross state, county open space, private or watershed lands.

The plan describes two types of maintenance activities: Routine Maintenance and Integrated Vegetation Management Activities. Detailed descriptions of the policy and practice, methods and locations for some activities are presented in the next section.

Routine Maintenance Activities – When vegetation maintenance activities are intended to accomplish routine maintenance for motorist safety, visibility or other maintenance activity, they will be categorized as routine maintenance. This is more critical for areas of vegetated roadside near busy roads, edge of pavement, and around guardrails. This plan provides prescriptions for routine maintenance activities including maintenance of Zone 1 and annual mowing.

Integrated Vegetation Management Activities – Although all activities are to be planned and conducted in accordance with the principles of IVM, many vegetation maintenance activities are intended to target a specific species of pest plants. By carefully planning and carrying out these management activities, it is possible over time to establish desirable native vegetation, which will assist in the prevention of re-infestation of pest plants. The process for determining and carrying out IVM actions is illustrated in **Figure 3** below. This plan provides information, locations, and gives prescriptions for selective control of target pest plants known from Santa Cruz County and specifically the IVMP project area and the promotion and establishment of desirable native vegetation.



Source: Washington State Department of Transportation

URS	Santa Cruz County IVMP 26815986	General IVMP Process	Figure 3 July 2007

Routine Maintenance Activities

Roadside maintenance activities are considered routine when regular periodic treatment is required to keep vegetative growth from interfering with highway operation and maintenance objectives. Typical routine maintenance activities are maintenance of Zone 1 and certain types of mowing and trimming. Routine maintenance activities for Zones 1 and 2 are described below.

Routine Shoulder Maintenance in Zone 1 of vegetation at the edge of pavement will be managed as follows on roadsides in the IVMP Area.

Policy and Practice

- Zone 1 is maintained on the majority of shoulders throughout the area, except in designated locations.
- Roadsides with guardrail will receive Zone 1 maintenance under guardrail, even if no other Zone 1 maintenance is prescribed. .

The width of Zone 1, where it is maintained, varies but is typically 2 ft. in width.

Methods

- Mowing will be implemented at least annually to maintain unobstructed visibility, and provide motorists clearance for safe vehicle operations.

Locations

- Zone 1 maintenance is should be implemented on an as needed basis throughout the IVMP Area.

Routine Mowing/Trimming in Zone 2 of vegetation at the edge of pavement will be managed as follows on roadsides in the IVMP Area.

Policy and Practice

- Annual mowing is conducted on all shoulders where Zone 1 is not maintained.
- Annual mowing or trimming is also conducted as needed for locations on all highways to preserve site distance at curves, intersections and any other highway entry points.

In all other areas mowing is only used occasionally as part of IVM treatments for weed and brush control as described below in Section 2.

Methods

- In areas where Zone 1 is not maintained, annual mowing will consist of up to two passes, 4 ft. to 8 ft. in width, depending on the equipment used.

Locations

Locations routinely needing trimming for distance and sign visibility exist in the IVMP area and are depicted as roadside management features in **Appendix A** and detailed in **Appendix B.**

1.2.1.1 Tree and Brush Control

Policy and Practice

- Trees and brush are controlled for safety reasons including preservation of sight distance at curves and intersections, and for visibility of signs, and preventing trees with large trunk diameter from growing too close to traffic lanes.
- Native large shrub and small tree species should be allowed to grow and mature in Zone 3 and side trimmed if they begin to encroach on site distance or other traffic operational requirements.
- Large coniferous or hardwood deciduous tree species such as Douglas fir, big-leaf maple, alder, or cottonwood left to grow in Zone 2 and in some cases parts of Zone 3, can reach substantial size over a relatively short period of time and should be removed when young.
- Tree removal is considered a routine maintenance activity. CSCDPW maintenance staff should identify encroaching trees that pose an imminent threat to the roadway or traffic and remove them as soon as possible.
- Encroaching trees may be dead, leaning, or structurally unsound. Best horticultural judgment will determine the best course of action for trees that appear diseased or structurally unsound or may pose a long-term threat.
- Tree removal should minimize damage and impact to the highway structure, adjacent healthy trees and under-story vegetation.

Methods

- Removal of undesirable tree and shrub species is typically accomplished by hand cutting, hand pulling, properly timed selective mowing, properly timed herbicide applications, or combinations thereof.
- In some locations it is most effective to mow back the majority of the existing vegetation and then selectively treat undesirable re-growth with herbicides in succeeding years, allowing desirable vegetation to grow up around and form a competitive cover.
- In some cases when native tree and brush species are cut by hand, the debris can be fed through a chipper and placed back on the roadside in the form of mulch.
- CSCDPW standard tree removal methods will be implemented or a professional arborist will be consulted to achieve the policies stated above.

Methods
Locations

- Location of encroaching trees in the IVMP area are depicted in **Appendix A** and described in **Appendix B.**

For all vegetation management needs not addressed through routine maintenance as described above, activities are planned and carried out using the principles of Integrated Vegetation Management (IVM) and the decision making process diagrammed on Page 1-6 in **Figure 3**. IVM is a coordinated decision making process that uses the most appropriate vegetation management methods and strategies, along with a monitoring and evaluation system, to achieve long term

roadside maintenance goals and objectives in an environmentally and economically sound manner. The goal of the IVM approach is effective control of unwanted vegetation and the establishment of stable, low maintenance native or naturalized plant communities on the roadside that are compatible with:

- Highway maintenance and safety objectives
- Preservation of environmental quality
- Weed control requirements
- The concerns of CSCDPW's customers and neighbors.

In the long term, the use of the IVM approach can reduce the intensity and cost of maintenance, as well as minimizing the need to use herbicides, which is ultimately one of the primary goals of this program. The IVM approach includes policies and practices and methods and locations for noxious and nuisance weed identification and control and hazard tree removal.

1.2.1.2 Integrated Vegetation Management Planning and Tracking Database

Policy and Practice

- An Integrated Vegetation Management Records database is necessary for use. This database should be accessed and maintained through the same network as the Pesticide Application Records database.
- Any activities focused on treatment of a specific location and species infestation, or focused on treatment of any types of unwanted vegetation throughout the area will be documented with an initial IVM record outlining the long-term treatment plan. The records will be updated over time whenever planned treatments are carried out, or when observations are made as to the success or failure of past treatments.

1.2.1.3 Noxious Weed Control

Policy and Practice

- Noxious weed control is a high priority for CSCDPW because of fire hazard, obstruction of visibility and maintenance of the recovery zone for motorists. Transportation rights of way are high priority locations for control of noxious weed species within the state because they cross and link so many adjacent properties and land uses and may act as conduits for the spread of weeds.
- Whenever possible, designated noxious weed species and infestations locations will be documented and treated following plans as defined by IVM records in the database.
- Noxious weed control, while not required by state law, provides many positive benefits to the overall condition of the roadside, enhances ecological function by maintaining and enhancing native plant communities, reduces the potential for continuing spread of weed infestations, improves neighbor relations, and enhances visual quality and safety.
- Target weed species will be controlled as time and budget allows.

Methods

- Priority will be given to locations with the highest chance for success including relatively new infestations and where there is potential for infestations to spread to un-infested areas of the right of way or to un-infested neighboring properties.
- If infestations are limited to a few plants, hand pulling is also effective when the entire root system is also removed. Maintenance employees are encouraged to be aware of and look for new noxious weed occurrences, and to stop and pull these plants whenever possible.
- Control measures for nuisance weed are dependent on the specific type of plant.
- Woody species such as French broom and Himalayan blackberry are most effectively treated with a combination of cutting, mowing, and encouragement of native vegetation. Measures that promote natural vegetative competition are seeding, planting, and soil enhancement. The IVM Record and database should be used to track the execution and success of these control measures.
- Annual or biennial species such as Italian thistle and bull thistle may also be effectively controlled with mowing when plants are in the rosette (or leafy vegetative stage) or bolting stage in spring prior to seed set.
- For recommended treatments specific to noxious weed species, See Section 6, IVM Prescriptions for target pest plant control (Noxious Weed Control).

Locations

- **Appendix A** contains maps showing locations where reoccurring infestations of noxious species are known to exist in IVMP Area.

For the purposes of this plan, “noxious weeds” are defined as:

- non-native pest plants identified by the U. S. Department of Agriculture (USDA) and California Department of Food and Agriculture (CDFA) that are considered “troublesome, aggressive, intrusive, detrimental, or destructive to agriculture, silviculture, or important native species, and difficult to control or eradicate”. The CDFA compiled and ranked a list of noxious weeds based on the statewide importance of the pest, likelihood of successful eradication or control, and present distribution within the state. The rating ranks A, B, C, D, and Q are defined below (CDFA 2007):
- “A” An organism of known economic importance subject to state (or commissioner when acting as a state agent) enforced action involving: eradication, quarantine, containment, rejection, or other holding action.
- “B” An organism of known economic importance subject to: eradication, containment, control or other holding action at the discretion of the individual county agricultural commissioner, or, an organism of known economic importance subject to state endorsed holding action and eradication only when found in a nursery.
- “C” An organism subject to no state enforced action outside of nurseries except to retard spread. At the discretion of the commissioner, or, an organism subject to no state enforced action except to provide for pest cleanliness in nurseries.

- "Q" An organism or disorder requiring temporary "A" action pending determination of a permanent rating. The organism is suspected to be of economic importance but its status is uncertain because of incomplete identification or inadequate information. In the case of an established infestation, at the discretion of the Assistant Director for Plant Industry, the Department will conduct surveys and will convene the Division Pest Study Team to determine a permanent rating.
- "D" No action. (Parasites, predators, and organisms of little or no economic importance).

The California Invasive Plant Council (Cal-IPC) has developed an invasive non-native plant list and ranking scheme because the CDFA noxious weed list does not focus on species that damage wildland ecosystems. Cal-IPC defines invasive non-native plants as species which are not native to, yet can spread into wildland ecosystems and that threaten wildland ecosystems in any of the following ways: displace native species, hybridize with native species, alter biological communities, or alter ecosystem processes (Cal-IPC 2003).

Cal-IPC provides several rankings for weed species. An overall rating of High, Moderate or Limited is given to each species based on independent ratings of the ecological impact, invasive potential, and distribution. Separate ratings for the ecological impact, invasive potential, and distribution are ranked A (severe) to D (no impact) for each criterion, with U indicating unknown (Cal-IPC 2003). Criteria investigated under each category are summarized below according to Cal-IPC 2003:

Ecological Impact

- Impact on abiotic ecosystem processes (e.g., hydrology, fire, nutrient cycling)
- Impact on native plant community composition, structure, and interactions
- Impact on higher trophic levels, including vertebrates and invertebrates
- Impact on genetic integrity of native species (i.e., potential for hybridization)

Invasive Potential

- Ability to establish without anthropogenic or natural disturbance
- Local rate of spread with no management
- Recent trend in total area infested within state
- Innate reproductive potential (based on multiple characteristics)
- Potential for human-caused dispersal
- Potential for natural long-distance (>1 km) dispersal. This is also based on knowledge from other regions that have been invaded worldwide, which may be similar to California.

Distribution

- Ecological amplitude (ecological types invaded in California)
- Ecological intensity (highest extent of infestation in any one ecological type)
- A table of the ranking and category of the target weed species for each of these ranking systems is provided below in Table 1-1. This list indicates that the CDFA has not identified

many of the target species in Santa Cruz County as noxious weeds. Cal-IPC ranks all the species except poison oak (a native species) and silver wattle (provides an overall rank). Therefore, it is recommended that CSCDPW crews use the CAL-IPC ranking when prioritizing control of pest plants in the IVMP Area.

- Timing of these activities has a significant effect on how the vegetation grows back. Herbicide applications made by hand, directly to the cut surfaces of undesirable plants may be used to reduce or eliminate grow back.
- See Section 6, IVM Prescriptions for Target Pest Tree and Shrub Control.

Table 1-1 CDFA and Cal-IPC Ratings for the Target Species in the IVMP

Common Name	Scientific Name	CDFA Rating	Cal-IPC Rating			
			Overall Rating	Impacts	Invasiveness	Distribution
Silver wattle	*Acacia dealbata*	Not-rated	Moderate	N/A	N/A	N/A
Black wattle	*Acacia melanoxylon*	Not-rated	Limited	C	C	B
Giant reed	*Arundo donax*	Not-rated	High	A	B	A
Italian thistle	*Carduus pycnocephalus*	C	Moderate	B	B	A
Sea fig, Iceplant	*Carpobrotus chilensis*	Not-rated	Moderate	B	B	A
Hottentot-fig, Iceplant	*Carpobrotus edulis*	Not-rated	High	A	B	A
Bull thistle	*Cirsium vulgare*	Not-rated	Moderate	B	B	B
Poison hemlock	*Conium maculatum*	Not-rated	Moderate	B	B	B
Jubata grass	*Cortaderia jubata*	Not-rated	High	A	A	A
Pampas grass	*Cortaderia selloana*	Not-rated	High	A	A	B
Silverleaf cotoneaster	*Cotoneaster pannosa*	Not-rated	Moderate	B	A	B
Scotch broom	*Cytisus scoparius*	C	High	A	B	A
Cape ivy	*Delairea odorata*	Not-rated	High	A	A	B
Red gum	*Eucalyptus camaldulensis*	Not-rated	Limited	C	C	C
Blue gum	*Eucalyptus globulus*	Not-rated	Moderate	B	B	B
Fennel	*Foeniculum vulgare*	Not-rated	High	A	B	A
French broom	*Genista monspessulana*	C	High	A	A	B
English ivy	*Hedera helix*	Not-rated	High	A	A	A
Himalayan berry	*Rubus discolor*	Not-rated	High	A	A	A
Spanish broom	*Spartium junceum*	Not-rated	High	A	B	B
Poison oak	*Toxicodendron diversilobum*	Not-rated	Not-rated	Not-rated	Not-rated	Not-rated
Periwinkle	*Vinca major*	Not-rated	Moderate	B	B	B

2.1 TARGET IVMP PROJECT AREA

The target IVMP Project Area is ultimately intended to address vegetation management and roadside maintenance for all county-maintained roadsides within 150 ft of perennial waters. Streamside roadways occur throughout many different floristic regions and all of the road maintenance districts in Santa Cruz County (**Figure 4**). The current IVMP Project Area includes a total of approximately 60 miles of county-maintained roads and the associated, approximately 15 ft wide, county maintained easement along either side of the roadway.

2.2 VEGETATION COMMUNITIES

Plant communities are assemblages of plant species that occur together in the same area. They are classified by species composition and relative abundance. The plant community descriptions and nomenclature used in this section were based on *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995 and updated list from CDFG, 2003). Although redwood forest is by far the dominant vegetation type within the IVMP Area, the project area includes 36 primary upland, riparian and wetland communities, called vegetation series or alliances. Areas where residential neighborhoods are associated with natural vegetation communities are shown in Appendix A with "Residential" proceeding the name of the vegetation type in order to assist in prioritizing the different types and levels of roadside management used in urban versus rural or wildland settings.

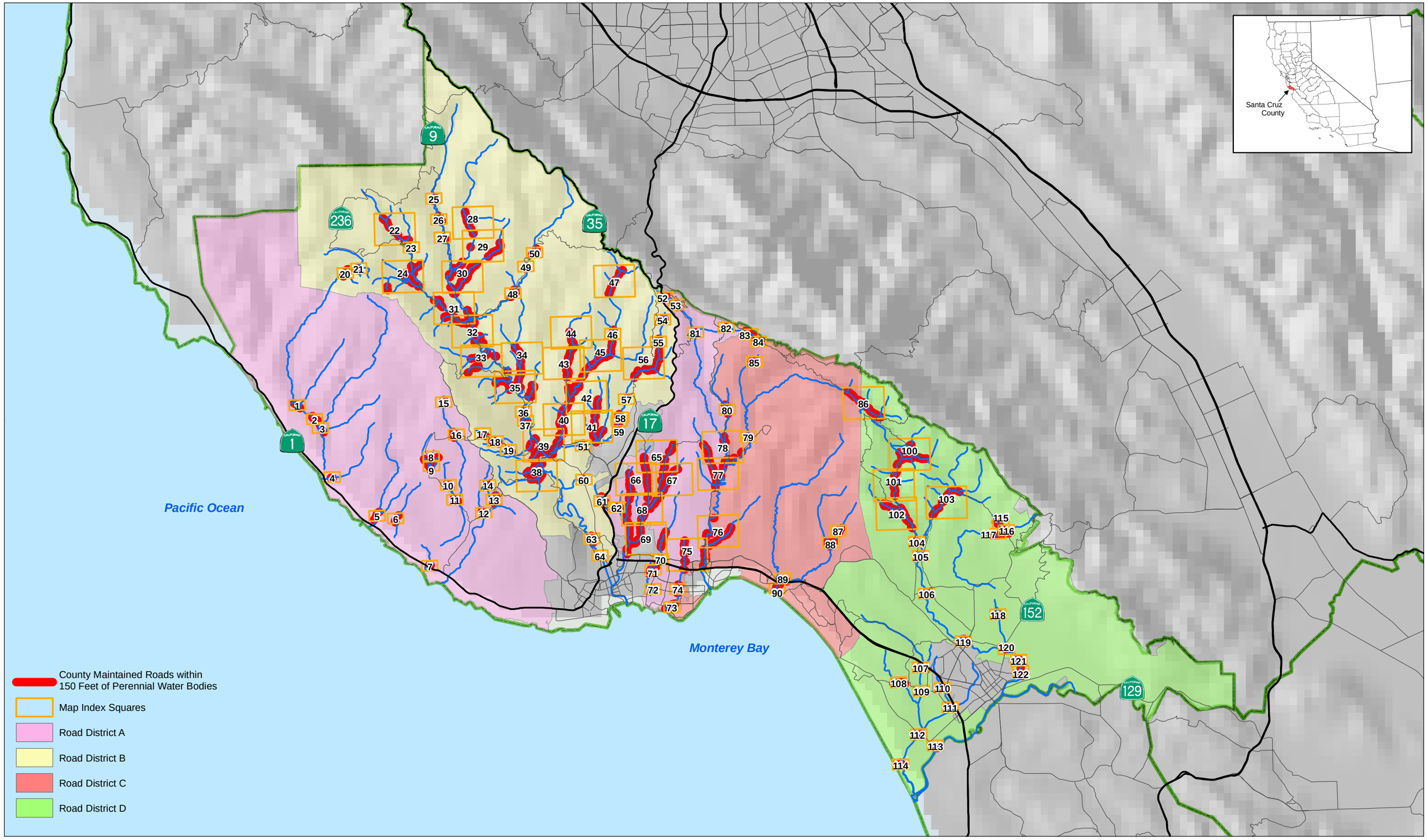
2.2.1 Uplands

The upland vegetation communities mapped in the IVMP project areas include: grassland, scrub, woodland, and non-native forest communities.

2.2.1.1 Grassland Communities

California Annual Grassland Series

Open roadsides dominated by annual grasslands dominate considerable portions of the project area. The most prevalent non-native annual grass species along County roadsides include ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), rattlesnake grass (*Briza major*), wild oats (*Avena barbata*), Italian ryegrass (*Lolium multiflorum*) and dogstail grass (*Cynosurus echinatus*). Other species associated with these grasslands include a diverse assemblage of both native and non-native species including California broom (*Lotus scoparius*), purple owl's clover (*Castilleja exserta* ssp. *exserta*), smooth cat's ear (*Hypochaeris glabra*) and miniature lupine (*Lupinus bicolor*). Target weed species associated with this typically open sun vegetation type within the project area include: Italian thistle, French broom, Scotch broom, bull thistle, poison hemlock, Harding grass, and Himalayan berry.



Source: Santa Cruz County GIS Department; URS Corporation

URS	Santa Cruz County IVMP	Map Tiles	Figure 4
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2.2.1.2 Scrub Communities

California Sagebrush Scrub

This community is dominated by California sagebrush (*Artemisia californica*) and typically occurs in the IVMP Area as a coastal scrub type in Road Maintenance District A along the North Coast and western slopes of Bonny Doon (Ben Lomond Mountain). Associated species include sticky golden monkeyflower (*Mimulus aurantiacus*), seaside woolly sunflower (*Eriophyllum staechidifolium*), coffeeberry (*Rhamnus californica*), poison oak and coyote brush (*Baccharis pilularis*). Target weed species common to this vegetation type in the project area include poison hemlock, Italian thistle, and cape ivy.

Coyote Brush Scrub

This community is dominated by coyote brush and typically occurs in the IVMP Area as a coastal scrub type in Road Maintenance District A along the North Coast and western slopes of Bonny Doon (Ben Lomond Mountain). Associated species include sticky golden monkeyflower (*Mimulus aurantiacus*), seaside woolly sunflower (*Eriophyllum staechidifolium*), coffeeberry (*Rhamnus californica*), poison oak, and California sagebrush. Target weed species common to this vegetation type in the project area include poison hemlock, Italian thistle, and cape ivy.

2.2.1.3 Woodland Communities

California Black Oak Woodland

Roadside woodlands dominated by California black oak (*Quercus kellogii*), a deciduous species, are rare in the IVMP Area and are located only along upper elevation ridgeline roads within maintenance districts A and C (Sierra Azul and/or Mid-County). A diverse mixture of native and non-native grasses and herbs are typically present in the understory.

Coast Live Oak Woodland

Coast live oak (*Quercus agrifolia*) evergreen woodlands are common in the IVMP Area and are especially prevalent in maintenance districts A, C, and D (Mid-County, Nisene Marks and Pajaro Valley). The understory of these oak woodlands is often open with shade tolerant species such as poison-oak, sword fern, California blackberry and annual grasses. Target weed species commonly associated with this vegetation type include English ivy, cape ivy, silver acacia (*Acacia dealbata*) (or wattle), blackwood acacia (*A. melonoxylon*) and periwinkle.

Knobcone Pine Woodland (Sandhill)

Roadside woodlands dominated by knobcone pine (*Pinus attenuata*), a closed-cone evergreen species, are rare in the IVMP Area and are located only along upper elevation sandstone ridgeline within maintenance district A (Bonny Doon). A diverse and unique mixture of predominantly native and non-native grasses and herbs are typically present in the understory, including many rare and/or endemic Santa Cruz County species.

Maritime Ponderosa Pine Woodland (Sandhill)

Roadside woodlands dominated by ponderosa pine (*Pinus ponderosa*), an open cone evergreen species, are rare in the IVMP Area and are located only along sandstone ridgelines within maintenance district A and B (Bonny Doon and San Lorenzo Valley). These are unique and globally rare communities often termed a component of "Sandhill Habitat". A diverse and unique mixture of native and non-native grasses and herbs are typically present in the understory. Many rare and/or endemic Santa Cruz County plants and wildlife species, including the silverleaf manzanita (*Arctostaphylos silvicola*), Santa Cruz wallflower (*Erysimum teretifolium*), Ben Lomond buckwheat (*Eriogonum nudum* ssp. *decurrens*), and Zayante band-winged grasshopper among others are associated with this community.

Oregon White Oak Woodland

Roadside woodlands dominated by Oregon white oak (*Quercus garryana* var. *garryana*), a deciduous species, are rare in the IVMP Area and are located only along lower elevation streamside terraces within maintenance districts B (San Lorenzo Valley). Other trees associated with the canopy include coast live oak, Shreve oak (*Quercus parvula* var. *shrevei*), or valley oak.

Shreve Oak Woodland

Woodlands dominated by Shreve oak, an evergreen species that resembles coast live oak to the untrained observer are largely similar in nature to coast live oak woodlands in terms of associated shrub, tree, and pest plant species.

2.2.1.4 Forest Communities

Douglas-Fir Forest

These evergreen forests are characterized by a prominence of Douglas-fir (*Pseudotsuga menziesii*). Other trees associated with these stands may include tanoak (*Lithocarpus densiflorus*), pacific madrone (*Arbutus menziesii*), Shreve oak (*Quercus parvula* ssp. *shrevei*) and canyon live oak (*Quercus chrysolepis*). The majority of the forests in the project area contain shrub species common to mixed evergreen coastal forests of the area including wood rose (*Rosa gymnocarpa*), honeysuckle (*Lonicera hispidula*), poison oak (*Toxicodendron diversilobum*), and California blackberry (*Rubus ursinus*). Herbaceous species associated with this community include hawkweed (*Hieracium albiflorum*), bracken fern (*Pteridium aquilinum*), California brome (*Bromus carinatus*), and sword fern (*Polystichum munitum*).

Redwood – Douglas-Fir Forest

This evergreen community has a co-dominance of both Douglas-fir and redwood trees. In other respects, this community is similar to descriptions of both redwood and Douglas-fir forests.

Redwood forest

This is the most common vegetation type found along roadsides in the program area. These evergreen forests are characterized by a prominence of coast redwood (*Sequoia sempervirens*). Other trees associated with these stands may include Douglas-fir, Tanoak, Pacific madrone, Shreve oak, coast live oak, and canyon live oak (*Quercus chrysolepis*). The majority of the

forests in the project area contain shrub species common to mixed evergreen coastal forests of the area including wood rose (*Rosa gymnocarpa*), honeysuckle (*Lonicera hispidula*), poison oak (*Toxicodendron diversilobum*), thimbleberry, and California blackberry (*Rubus ursinus*). Herbaceous and ground cover species associated with this community are numerous, but include redwood sorrel (*Oxalis oregana*), which resembles a clover to the untrained eye, modesty (*Whipplea modesta*), bracken fern (*Pteridium aquilinum*), yerba buena (*Satureja douglasii*) and sword fern (*Polystichum munitum*). In shady environments, the most prevalent target pest plants include English ivy and periwinkle, while openings and meadows within this community have French broom, Himalayan berry, Pampas or Jubata grass, wattle, bull thistle and Italian thistle.

Tanoak forest

This broadleaf evergreen forest community has a dominant canopy of tanoak. Associated shrub, herb, and pest plant species within the IVMP Area are similar to those of the redwood or Douglas-fir forest.

2.2.1.5 Non-Native Forest Communities

Wattle (Acacia) Forest

Stands with a dominant canopy of silver wattle or black wattle (or blackwood acacia) trees are fairly uncommon in the IVMP Area. Silver wattle is by far the more widespread of the two in Santa Cruz County and the IVMP Area.

Gum (Eucalyptus) Forest

This evergreen forest type is often dominated by blue gum (*Eucalyptus globulus*) and is often associated with or escaped from landscaped areas where it has been planted as a windbreak. The understory is often open due to chemicals released into the soil from the leaves and plant that prevent the growth of other plant species, while the edges of these stands are often weedy and include species such as green or black wattle, English ivy, Periwinkle, Pampas or Jubata grass, poison hemlock, Italian thistle, cape ivy and French broom.

2.3 RESIDENTIAL OR DEVELOPED

2.3.1 Residential Landscaping

Areas mapped as this type are composed of a wide variety of commercially available, landscaped species associated with residential neighborhoods.

2.3.2 Agricultural

Active agricultural fields are most prevalent in the southern portion of the IVMP Area, including the Pajaro Valley (District D).

2.3.3 Developed

Areas cleared of vegetation, including paved cul de sacs, parking lots, and industrial yards are considered developed areas.

2.4 WETLANDS

Wetlands perform multiple ecological functions and are often important wildlife areas. Riparian vegetation provides prime nesting habitats to migratory songbirds such as warblers, vireos, grosbeaks, and flycatchers. Riparian areas provide foraging habitat for many species of birds, reptiles and amphibians and act as migration and movement corridors for many wildlife species. The canopy and sub-canopy layers provide shade and protection of the water features and their aquatic inhabitants.

2.4.1 Riparian Woodland Communities

Black Cottonwood Woodland

Riparian corridors dominated by black cottonwood (*Populus balsamifera* ssp. *trichocarpa*) within the IVMP Area are most prevalent along the floodplains and banks of the San Lorenzo River (District B). Associated canopy trees include California bay, box elder (*Acer negundo*), big-leaf maple, and western sycamore. Target pest plants prevalent in this community include shade tolerant species such as English Ivy, Himalayan berry, Green and Black Wattle (Acacia) and periwinkle. Other mapped vegetation types with similar species composition and pest plant infestations include Black cottonwood-California bay-box elder riparian forest.

Black Cottonwood-Western Sycamore Woodland

Riparian corridors co-dominated by black cottonwood and western sycamore (*Platanus racemosa*) within the IVMP Area are most prevalent along the floodplains and banks of the San Lorenzo River (District B). Associated canopy trees include California bay, box elder (*Acer negundo*), and big-leaf maple. Target pest plants prevalent in this community include shade tolerant species such as English Ivy, Himalayan berry, Green and Black Wattle (Acacia) and periwinkle.

2.4.2 Riparian Forest Communities

Arroyo Willow Forest

Riparian corridors dominated by arroyo willow (*Salix lasiolepis*) canopy are common in Santa Cruz County. Other canopy trees associated with these stands include red willow (*S. laevigata*), narrow-leaf willow (*Salix exigua*), and Sitka willow (*S. sitchensis*). Associated shrub and understory species in these stands include stinging nettle (*Urtica dioica* ssp. *holosericea*), common horsetail (*Equisetum arvense*), black cap raspberry (*Rubus leucodermis*), California blackberry (*Rubus ursinus*), and pest plants such as cape ivy, Himalayan berry (*Rubus discolor*), or poison hemlock (*Conium maculatum*). This vegetation type also qualifies as a wetland as defined by the U.S. Army Corps of Engineers.

Box Elder Forest

Riparian forests with a dominant canopy of box elder, a deciduous species closely related to big-leaf maple, occur within the IVMP Area along the San Lorenzo River and the lower portions of Zayante Creek (District B). Associated canopy species include white alder, willows, black cottonwood, and western sycamore. Pest plants are primarily shade tolerant species.

California Bay Forest

Evergreen riparian forests with a canopy dominated by California bay (*Umbellularia californica*) occur most prevalently in the San Lorenzo Valley and Mid-County (District B and A). The understory is often shady and natives present include poison oak (*Toxicodendron diversilobum*), California blackberry, and sword fern, while pest plants include English ivy, periwinkle and others along the edges of the canopy, such as French broom, Italian thistle and Himalayan berry.

Red Alder Forest

Riparian coast-side forests dominated by red alder occur in the IVMP Area along the North Coast (District A). Native understory species include giant chain fern (*Woodwardia fimbriata*), lady fern (*Athyrium filix-femina*), common horsetail, mugwort (*Artemisia douglasiana*), and stinging nettle. Along these coast side roads, the most prevalent weed species are cape ivy, poison hemlock, and fennel (*Foeniculum vulgare*). This vegetation type can also qualify as a wetland as defined by the U.S. Army Corps of Engineers.

Red Willow Forest

Portions of the project area have riparian forest dominated by a canopy of red willow. Associated canopy species include narrow-leaf willow, arroyo willow and shining willow (*Salix lasiandra* ssp. *lucida*) canopy. This community occurs adjacent to and intergrades in places with in the project area. Associated shrub and understory species in these stands include California blackberry (*Rubus ursinus*), common horsetail (*Equisetum arvense*), and stinging nettle (*Urtica dioica* ssp. *holosericea*). Target pest plants prevalent in this community within the program area include Himalayan berry, Cape Ivy, Poison hemlock, and silver wattle. This vegetation type qualifies as a wetland as defined by the U.S. Army Corps of Engineers.

White Alder Forest

White alder (*Alnus rhombifolia*) riparian woodlands and forests are often associated with the banks and channels of streams in the IVMP Area. Associated canopy species include western sycamore, black cottonwood, and big-leaf maple. The understory is often composed of ferns and other shade tolerant species such as thimbleberry (*Rubus parviflorus*) or California blackberry. Target weeds associated with this community in the IVMP Area include periwinkle, English ivy, French broom, and silver wattle (Acacia).

2.5 ROAD MAINTENANCE DISTRICTS

District A

Bonny Doon

Mid-County

North Coast

District B

San Lorenzo Valley & Big Basin

Scotts Valley

Zayante Sandhills

District C

Nisene Marks

District D

Pajaro Valley

2.6 FISHERIES

Fisheries resources within the project area are found in streams within 150 feet of County maintained roads. Several special status fish species occur in streams within the project area, including Coho salmon (*Oncorhynchus kisutch*), steelhead (*Oncorhynchus mykiss*), and tidewater goby (*Eucyclogobius newberryi*). A description of each species, their distribution within the project area, and their status is provided below.

Coho Salmon

Coho salmon within the project area belong to the Central California Coast Evolutionarily Significant Unit (ESU) and are federally and state listed as endangered. This ESU consists of all naturally spawning populations of coho between Punta Gorda in northern California, south to and including the San Lorenzo River as well as populations in tributaries to San Francisco Bay, excluding the Sacramento-San Joaquin River system, as well as four artificial propagation programs: the Don Clausen Fish Hatchery Captive Broodstock, and the Noyo River Fish Station egg-take Program coho hatchery programs (Good et al. 2005).

Within Santa Cruz County, coho salmon occur in Waddell, Scott, and Mill creeks. Though the San Lorenzo River has been included in the designated critical habitat, it currently does not support naturally spawning populations of coho salmon (Moyle 2002). Within the project area (county maintained roads within 150 feet of streams or perennial waters), coho bearing streams are present. However, several roads within Road District A are located upstream of known coho habitat and maintenance activities may affect these downstream populations due to sedimentation or other potential effects of maintenance activities. In particular, these roads are located within the Scott Creek and North Coast watersheds.

Coho salmon are typically associated with small to moderately sized coastal streams characterized by heavily forested watersheds; perennially flowing reaches of cool, high-quality

water; dense riparian canopy; deep pools with abundant overhead cover; instream cover consisting of large, stable woody debris and undercut banks; and gravel or cobble substrates.

In contrast to the life history patterns of other anadromous salmonids, coho salmon in California generally exhibit a relatively simple 3-year life cycle. Adult salmon typically begin the freshwater migration from the ocean to their natal streams after heavy late-fall or winter rains breach the sand bars at the mouths of coastal streams. Delays in river entry of over a month are not unusual. Migration continues to March, generally peaking in December and January, with spawning occurring shortly after returning to the spawning ground.

Female coho salmon choose spawning sites usually near the head of a riffle, just below a pool, where water changes from a laminar to a turbulent flow and there is abundant small to medium gravel substrate. The flow characteristics of the location of the redd usually ensure good aeration of eggs and embryos and flushing of waste products. The water circulation in these areas also facilitates fry emergence from the gravel. Each female builds a series of redds, moving upstream as she does so, and deposits a few hundred eggs in each. A dominant male typically accompanies a female during spawning, but one or more subordinate males also may engage in spawning. Coho salmon may spawn in more than one redd and with more than one partner. The female may guard a nest for up to two weeks.

The eggs generally hatch within four to eight weeks, depending on water temperature. Upon emergence, fry seek out shallow water, usually along stream margins. As they grow, they often occupy habitat at the heads of pools, which generally provide an optimum mix of high food availability and good cover with low energy expenditure from swimming.. As the fish continue to grow, they move into deeper water and expand their territories until, by July and August, they are in deep pools. Preferred rearing habitat has little or no turbidity and high, sustained invertebrate forage production. In the spring, as yearlings, juvenile coho salmon undergo a physiological process, or smoltification, which prepares them for living in the marine environment. They begin to migrate downstream to the ocean during late March and early April, and out-migration usually peaks in mid-May, if conditions are favorable. After entering the ocean, the immature salmon initially remain in nearshore waters close to their parent stream.

Steelhead

Steelhead within Santa Cruz County streams are divided into two Distinct Population Segments (DPSs), the Central California Coast DPS and the South-Central California Coast DPS. Both DPSs are federally listed as threatened. The Central California Coast DPS includes all naturally spawned anadromous steelhead populations below natural and manmade barriers in California streams from the Russian River (inclusive) to Aptos Creek (inclusive), and the drainages of San Francisco, San Pablo and Suisun Bays eastward to Chipps Island at the confluence of the Sacramento and San Joaquin Rivers. Tributary streams to Suisun Marsh including Suisun Creek, Green Valley Creek, and an unnamed tributary to Cordelia slough, excluding the Sacramento-San Joaquin River Basin, as well as two artificially propagation programs: the Don Clausen Fish hatchery, and the Kingfisher Hatchery/ Scott Creek steelhead hatchery programs. The South-Central California Coast DPS includes all naturally spawned anadromous steelhead populations below natural and manmade impassable barriers in streams from the Pajaro River (inclusive) to, but not including the Santa Maria River (NMFS 2006).

Within the project area, steelhead are found in streams within all four road districts. Each road district's major steelhead bearing streams are listed in **Table 2-1**. **Appendix C** summarizes the streams within each location map area that may provide steelhead habitat.

Steelhead are rainbow trout with an anadromous life history. Within the project area, steelhead return to spawn in coastal streams between November and April. Spawning activities take place from December to April with most spawning activity occurring between January and March. Although juvenile steelhead can spend up to 7 years in freshwater before moving downstream as smolt from March to May (Busby et al. 1996), generally steelhead remain in freshwater for 1 to 4 years before they out-migrate into the open ocean during spring and early summer (Goals Project 2000). Steelhead can spend up to 3 years in saltwater before returning to freshwater to spawn (Barnhardt 1986). Since juvenile steelhead remain in the creeks year-round, adequate flows, suitable water temperatures, and an abundant food supply are necessary throughout the year in order to sustain steelhead populations. The most critical period is in the summer and early fall when these conditions become limiting.

Potential spawning areas require gravels bottoms and specific water conditions. Spawning habitat condition is strongly affected by water flow and quality, especially temperature, dissolved oxygen, and silt load, all of which can greatly affect the survival of eggs and larvae (USFWS 2004).

Table 2-1 Steelhead Bearing Streams Within The IVMP Area by Road District

Road District A	Road District B	Road District C	Road District D
San Lorenzo River and tributaries	San Lorenzo River and tributaries	San Lorenzo River and tributaries	Pajaro River and tributaries
Waddell Creek	Boulder Creek	Soquel Creek	Corralitos Creek
Scott Creek	Hare Creek	Aptos Creek	Rattlesnake Gulch
Molino Creek	Kings Creek	Valencia Creek	Shingle Mill Gulch
Liddell Creek	Logan Creek	Hester Creek	Rider Creek
Yellow Bank Creek	Two Bar Creek	Moores Gulch	Browns Creek
Laguna Creek	Bear Creek	--	Green Valley (Casserly) Creek
Majors Creek	Foreman Creek	--	Salsipuedes Creek
Baldwin Creek	Pea Vine Creek	--	--
Wilder Creek	Clear Creek	--	--
Arana Gulch	Fritch Creek	--	--
Soquel Creek	Love Creek	--	--
Mill Creek	Newell Creek	--	--
Big Creek	Hubbard Gulch	--	--
Little Creek	Gold Gulch	--	--
Branciforte Creek	Shingle Mill Creek	--	--
Crystal Creek	Bean Creek	--	--

Table 2-1 Steelhead Bearing Streams Within The IVMP Area by Road District

Road District A	Road District B	Road District C	Road District D
Glen Canyon Creek	Bennett Creek	--	--
Granite Creek	Zayante Creek	--	--
Redwood Creek	Lockhart Gulch	--	--
Arana Gulch	Lompico Creek	--	--
Bates Creek	Mountain Charlie Gulch	--	--
Rodeo Gulch Creek	--	--	--
Soquel Creek	--	--	--
Moores Gulch	--	--	--
Burns Creek	--	--	--

Steelhead require cool, clean, well-oxygenated water and appropriate gravel for spawning. Steelhead spawn utilizing gravel about 0.25 to 5.0 inches in diameter. To some extent the size of gravel that can be used depends on the size of the spawning fish. While steelhead prefer mostly gravel-sized material for spawning, they would also use mixtures of sand and gravel, or gravel and cobble. Steelhead trout may spawn in intermittent streams, but juveniles move into perennial streams soon after hatching. Steelhead are generally located where water temperatures range from 50 to 59 degrees Fahrenheit (°F), and their upper sustainable temperature limit is 68°F. Steelhead may survive spawning, return to the ocean and ascend streams to spawn again. However, it is unusual for steelhead trout to spawn more than twice, and it is usually the females that survive to spawn again.

Juvenile steelhead hatch in 19 to 80 days depending on the water temperature. Gravel emergence occurs about 2 to 3 weeks after hatching. Fry often school and occupy quiet water along the banks of a stream. Back eddies, large woody debris, undercut banks, and undercut tree roots supply good fry habitat. Secondary channel pools with good cover are often used. As the fish grow they occupy individual territories and move to deeper and swifter water with coarser habitat. Most juvenile steelhead occupy riffles. Some of the larger fish may occupy runs or pools, particularly in the absence of coho salmon. Summer rearing habitat with cool water pools and extensive cover for older juvenile steelhead is often limiting in California streams. Juvenile steelhead are opportunistic drift feeders. While in freshwater steelhead subsist on aquatic invertebrates and terrestrial invertebrates that fall into the water. Larger steelhead are piscivorous (fish-eating).

Tidewater Goby

Tidewater goby is a federally listed endangered species. They occur in coastal lagoons created by inflowing streams. Within the project area, tidewater goby occur in Road District D. Specifically they can be found in Pajaro Lagoon and Watsonville Slough.

The tidewater goby prefers salinity levels less than 10 ppt and are usually found at the upstream portions of larger coastal lagoons (Moyle 2002). However, they can survive within salinities of

0-41 ppt and will breed at salinities of 2-27 ppt (Moyle 2002). While they can live in a variety of temperatures, they require well-oxygenated water.

For the most part, tidewater gobies are an annual species, with individuals occasionally living longer than a year (Moyle 2002). Reproduction takes place year round, dropping off between December and March. Females produce between 150 and 1,100 eggs during each spawning, and can spawn every 1-3 months for several months. Spawning takes place in the burrows where the eggs are placed along the walls in a single layer and then fertilized by the male. The male protects the embryos for 9-11 days until they hatch. At this point, the larval fish emerge from the burrow and swim to the surface to mix with plankton (Moyle 2002).

In addition to these special status fish species, Santa Cruz County streams are home to a plethora of aquatic species, including the federal listed threatened California red-legged frog (*Rana aurora draytonii*), Chinook salmon (*Oncorhynchus tshawytscha*), and many other native species. Care should be utilized when working near any stream to avoid impacting the aquatic resources with sediment or chemical pollutants or discharge.

3.1 OVERLAP OF ROADSIDE MANAGEMENT ACTIVITIES WITH RIPARIAN, WETLAND, AND FISHERIES HABITATS

The EPA and the State Water Resources Quality Control Board have listed many of the streams or stream segments that flow through or within the County road areas as impaired under Section 303d of the Clean Water Act. The Section 303d listed streams located in the IVMP Project Area are listed in **Table 3-1**. These streams have been found to have excessive concentrations of constituents harmful to aquatic and human contact. These constituents include excessive sedimentation, pesticides, nutrients, pathogens, fecal coliform, and boron. The causes of these impairments include agriculture, construction and land development, silviculture, urban runoff, septic disposal, non-point source pollution, channel erosion, and other erosion. County roads are one of the non-point source contributors of sediment and herbicides to streams. In addition, roadside ditches and drainages often convey pollutants to streams from other sources such as constructions sites, agricultural areas, and septic runoff.

In an effort to better regulate what enters streams and wetlands within the County's jurisdictional areas, a secondary management area within the 150-foot target IVMP Project Area has been established. The secondary management area addresses locations where sensitive resources overlap with roadside management. This zone includes areas within 60 feet of perennial waters known to support sensitive or listed fisheries, and riparian and/or wetland vegetation (**Figure 5**).

Within these 60-foot zones herbicide spraying will be prohibited except in very discrete applications where mechanical methods of removal have been proven ineffective or impracticable. Such exceptions may include a direct application of a systemic herbicide by means of direct injection or painting a stump. Any herbicide applications within the 60-foot zone must have review and approval through the County's IPM Department Advisory Group.

This 60-foot no-spray zone has been established in part as a result of a recent injunction and court order made by the U.S. District Court for the Northern District of California. The injunction and order stipulates a 60-foot no spray zone around California red-legged frog habitat (Department of Pesticide Regulation 2007).

Mechanical disturbance of the soil, unless part of an approved project, will also be avoided and minimized in these areas in an effort to reduce erosion and sedimentation of streams.

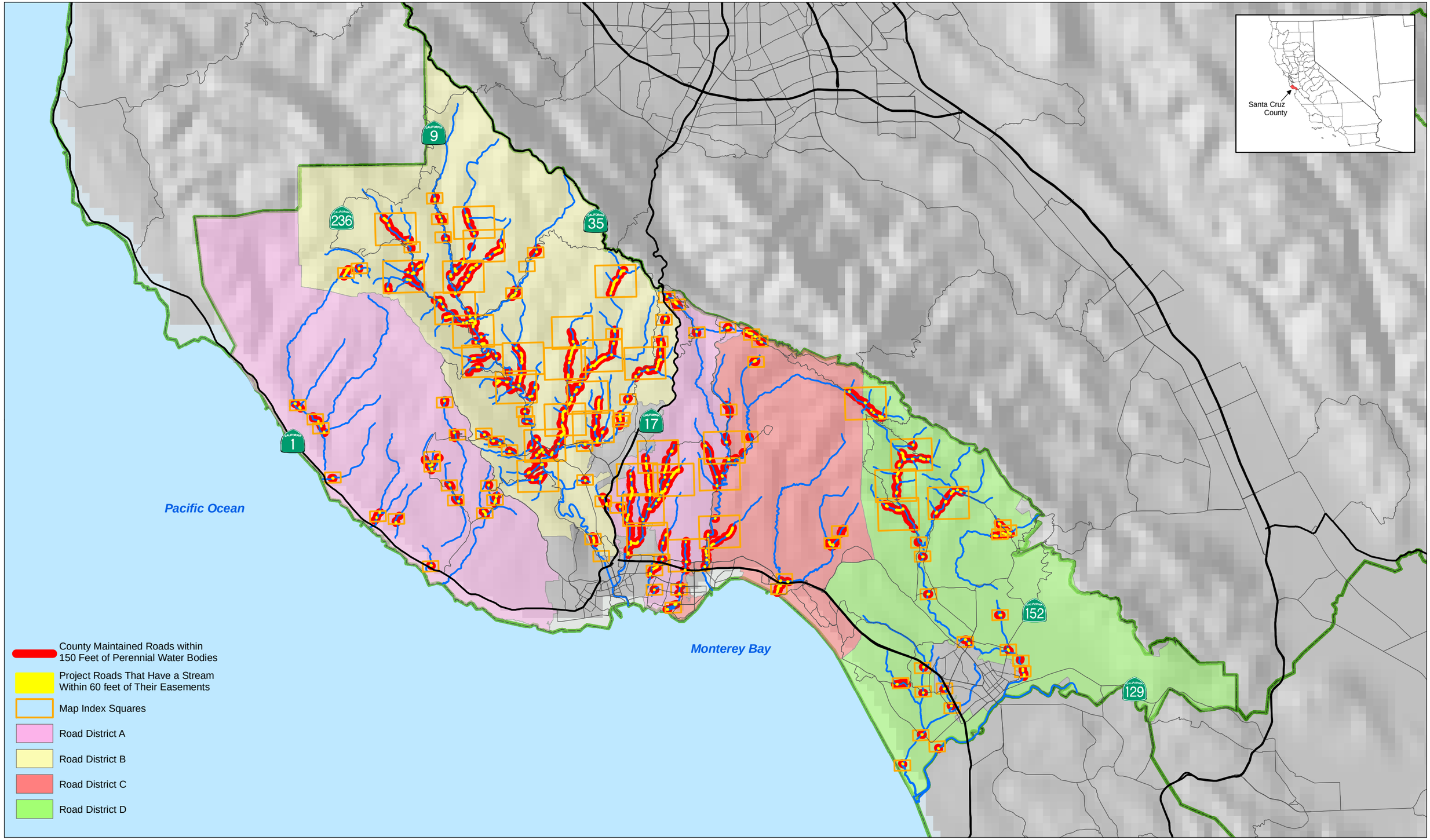
Many of the causes for stream water quality impairment can be reduced by maintaining a healthy riparian corridor along streams that serve as a filter strip for contaminants. By maintaining and enhancing the integrity of a 60-foot buffer on perennial streams along roadways, the County DPW will have a systematic approach to regulating non-point source pollution from road runoff and herbicide applications. The locations of all sections of IVMP roads and roadsides within this buffer, is presented in **Appendix D.**

Table 3-1 Clean Water Act Section 303(d) List of Water Quality Limited Stream Segments (Central Coast Regional Board 2006)

Stream Name	Pollutant/Stressor	Potential Sources	Estimated Size Affected
Aptos Creek	Pathogens	Urban Runoff/Storm Sewers	Impaired length is below Bridge Creek to the mouth (approximately 5 miles).
	Sedimentation/ Siltation	Disturbed Sites (Land Develop.), Channel Erosion	8.4 miles
Bean Creek	Sedimentation/ Siltation	Road Construction, Disturbed Sites (Land Develop.), Resource Extraction, Erosion/Siltation, Nonpoint Source	8.9 miles
Bear Creek	Sedimentation/ Siltation	Silviculture, Road Construction Disturbed Sites (Land Develop.), Erosion/Siltation Nonpoint Source	6.3 miles
Boulder Creek	Sedimentation/ Siltation	Specialty crop Production Silviculture, Road Construction, Disturbed Sites (Land Develop.), Erosion/Siltation, Nonpoint Source	7.6 miles
Branciforte Creek	Sedimentation/ Siltation	Silviculture, Road Construction, Nonpoint Source	5.8 miles
Corralitos Creek	Fecal Coliform	Source Unknown	13 miles
Kings Creek	Sedimentation/ Siltation	Silviculture, Road Construction, Disturbed Sites (Land Develop.), Erosion/Siltation, Nonpoint Source	4.4 miles
Lompico Creek	Pathogens	Septage Disposal, Natural Sources, Nonpoint Source	4.5 miles
Love Creek	Sedimentation/ Siltation	Agriculture, Silviculture Road Construction, Disturbed Sites (Land Develop.), Erosion/Siltation, Nonpoint Source	3.8 miles
Mountain Charlie Gulch	Sedimentation/ Siltation	Silviculture, Road Construction, Erosion/Siltation, Nonpoint Source	3.9 miles
Newell Creek (upper)	Sedimentation/ Siltation	Agriculture, Silviculture, Road Construction, Disturbed Sites (Land Develop.), Channel Erosion, Erosion/Siltation, Nonpoint Source	3.5 miles

Table 3-1 Clean Water Act Section 303(d) List of Water Quality Limited Stream Segments (Central Coast Regional Board 2006)

Stream Name	Pollutant/Stressor	Potential Sources	Estimated Size Affected
Pajaro River	Boron	Source Unknown	32 miles
	Fecal Coliform	Pasture Grazing-Riparian and/or Upland, Natural Sources, Nonpoint Source	Impaired length is above Llagas Creek (approximately 4.5 miles)
San Lorenzo River	Pathogens	Urban Runoff/Storm Sewers, Septage Disposal	27 miles
San Lorenzo River Lagoon	Pathogens	Urban Runoff/Storm Sewers, Natural Sources	66 acres
San Vicente Creek	Sedimentation/ Siltation	Silviculture	9.1 miles
Soquel Creek Lagoon	Nutrients	Septage Disposal, Nonpoint Source	1.2 acres
	Pathogens	Urban Runoff/Storm Sewers, Natural Sources, Nonpoint Source	1.2 acres
	Sedimentation/ Siltation	Construction/Land, Development	1.2 acres
Valencia Creek	Pathogens	Agriculture, Septage Disposal	6.2 miles
	Sedimentation/ Siltation	Agriculture, Construction/Land Development	6.2 miles
Watsonville Slough	Pesticides	Agriculture, Irrigated crop Production, Agriculture-storm runoff, Agriculture-irrigation tailwater, Nonpoint Source	6.2 miles
Zayante Creek	Sedimentation/ Siltation	Agriculture, Silviculture, Road Construction, Disturbed Sites (Land Develop.), Erosion/Siltation, Nonpoint Source	9.2 miles



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Source: Santa Cruz County GIS Department; URS Corporation

0 2.5 5 Miles

URS	Santa Cruz County IVMP	Project Roads That Have a Stream Within 60 feet of Their Easements	Figure 5
	26815986		July 2007

3.2 FISHERIES HABITAT

Fisheries habitat within the project area is considered to be fish-bearing streams within 150 feet of County maintained roads. The specific road segments within the IVMP Area and their respective fisheries are detailed in **Appendix C**. The habitat within these streams ranges from cold, steep, boulder strewn creeks under redwood forests, to larger channelized streambeds running through urban and agricultural areas, and coastal estuaries where fresh and saltwater mix. These aquatic areas provide important habitat for a variety of fish, amphibians, reptiles, invertebrates and other organisms. Impacts from road maintenance activities can cause harm to these organisms and negatively affect stream ecology. Pesticide/herbicide use and sedimentation are the primary causes of impacts to fisheries resources resulting from road maintenance activities. The results of these impacts are often widespread and can affect the entire aquatic community structure.

Many studies have shown that pesticide and herbicide usage can negatively affect fish and other aquatic organisms. Not only can pesticide/herbicide exposure lead to death, sublethal doses are known to cause changes in behavior, weight loss, impaired reproduction, inability to avoid predators, and lowered tolerance to extreme temperatures (Helfrich et al. 1996). Additionally, the use of herbicides and pesticides can reduce the availability of plants and invertebrates that serve as habitat and food supply for fish and other aquatic organisms. Pesticide usage can reduce the amount of aquatic invertebrates available for fish, causing them to range farther in search of food. This can lead to a greater risk of predation (Helfrich et al. 1996). The commonly used herbicide atrazine can affect aquatic organisms in several ways. Atrazine reduces the amount of phytoplankton available for filter feeding organisms, including insect larvae that make up the primary food source of stream dwelling salmonids (Weiner et al. 2007). It has also been shown to directly affect aquatic insect communities, causing declines in abundance and community diversity (Dewey 1986). In a study of the effects of atrazine on Atlantic salmon (*Salmo salar*) smolts, it was shown that exposure to atrazine in freshwater leads to difficulties and increased mortality during the transition to saltwater (Waring and Moore 2004).

Pesticide/ herbicide effects are not limited to the area of direct exposure. Residual effects are far reaching and can remain in the aquatic system long after application. Studies of major streams and rivers in the nation have shown that 96 percent of all fish, 100 percent of all surface water samples, and 33 percent of major aquifers contain one or more pesticides at detectable levels (Gilliom 1999). Although the use of organochlorine pesticides such as DDT and chlordane was discontinued in the 1970's, moderate concentrations of these chemicals are still found in samples of aquatic sediments and fish tissue (USGS 2006).

Sediment in streams can negatively affect fish and other aquatic organisms. Excess sediment within a stream has been shown to affect the productivity of salmon and trout streams (Cordone and Kelly 1961). Fine sediment clogs the interstitial spaces between gravels, cobbles, and boulders, reducing the available habitat for invertebrates as well as young fish that use these areas to avoid predation. The clogging of these spaces leads to armoring of the streambed reducing the survival of invertebrates, the primary food source of salmonids and many other fish species. Salmonid eggs when buried in the bed of streams in excavated nests are called redds. The viability of redds are particularly susceptible to fine sediment. Koski (1966) and Tappel and Bjornn (1983) found that increased fine sediment in redds decreased the survival and emergence of salmonid fry. When fines (< 6.4 mm) exceeded 30 percent, salmonid emergence and survival

was reduced by 50 percent (Kondolf 2000). Suspended sediment increases turbidity and has been shown to decrease the ability of fish to forage. Newcombe and MacDonald (1991) found that the longer the duration of high turbidity, the more damage is likely to fish and aquatic organisms. Turbidities as low as 25 nephlometric turbidity units (ntu) can cause a reduction in juvenile steelhead and coho salmon growth (Sigler et al. 1984).

Sedimentation can cause changes in the geomorphology of streams, affecting the available habitat for fish. Coho salmon and steelhead require deep pools for juvenile rearing. Juvenile steelhead over one year old need pools at least three feet deep for successful rearing (Reeves 1988). According to Brown et al. (1994), optimal coho habitat is comprised of pools at least one meter deep. As they do not have the leaping capacity that steelhead do, coho tend to be found in lower gradient reaches of streams. These low gradient reaches are most susceptible to bedload transport and filling of pools. A recent study of sediment transport in Zayante Creek following a 150-year storm event found that lower reaches were more affected by sedimentation and took longer to recover than upper reaches (Coats et al. 2005). Lisle (1981) found that high gradient streams recover much more rapidly following large flood events.

County maintenance staff should consider the potential for pesticide/herbicide and sediment runoff affects to the localized area as well as downstream aquatic habitats when conducting roadside maintenance. All roads that drain to streams should be considered sensitive habitats and maintained accordingly. The portions of County maintained roads within 60 feet of salmonid bearing streams (listed in Appendix C) are extremely sensitive and runoff of sediment and pesticide/herbicides should be minimized.

Some methods to minimize the input of fine sediment into the streams include keeping culverts and other water conveyance features clear of accumulated sediment. Bare ground should be kept to a minimum by cultivating native ground cover, emphasizing mowing and avoiding repetitive broad applications of herbicide. Minimizing bare ground is the single most effective method of reducing land use related surface erosion (FishNet 4C 2004).

Bare ground resulting from slides should be mulched or revegetated and runoff should be dispersed whenever possible to retain sediments onsite and upland instead of discharged to streams. When runoff must be discharged, it should be directed through a natural or constructed buffer such as hay bales or a swale to help minimize sediment concentrations.

There are many excellent resources to help maintenance staff reduce runoff that are outside the scope of this document. One such document is “Guidelines for Protecting Aquatic Habitat and Salmon Fisheries for County Road Maintenance” by FishNet 4C. It is available online at http://www.fishnet4c.org/projects_roads_manual.html.

All control techniques described by this program are verified as effective and repeatable in similar habitats with the same target pest species. However, specified techniques can be adjusted and revised based on monitored success rates within the IVMP Area. Levels of infestation by the dominant pest plants found along each roadside in the project area are presented in **Appendix E**. **Appendix E** also contains information on other associated pest plants along the target sections of roadway, whether the section of roadside is located in a dense residential area and other pertinent notes regarding pest plant locations in the area. Appendix E should be used in coordination with the maps provided in Appendix A to prioritize and manage pest plants in the IVMP Area. As noted in Section 1, priority should be placed on controlling newer or low level infestations of pest plants where the plants have not spread significantly out of the maintained road easement. Pest plant infestation levels were categorized using a visual estimate of the amount of pest plant cover along a target section of roadside. Low level infestations had 0 to 25% cover of pest plants, while medium infestations had 25 to 50% cover. High level infestations, often of large, well-established pest plants, had greater than 50% cover of target weed species.

Following IPM guidelines, four classes of control techniques are options in CSCDPW's integrated vegetation management plan for roads near perennial waters; including: no action, mechanical control, cultural control, and chemical control. In addition erosion control methods and monitoring are also discussed below. All proposed herbicide applications within the 60-foot zone must have review and approval through the County's IPM Department Advisory Group.

4.1 NO ACTION

This technique can be emphasized in portions of the IVMP program area where native, sustaining plant communities occur and no target pest plant infestations are present. Alternatively, if through prioritization of resources available for control, the threat of one species is found to be insignificant compared to other higher priority species or locations, or if no further action is needed to achieve or maintain control of any target pest species in the area, then an area can be designated as a No Action area.

4.2 MECHANICAL CONTROL

Plastic sheeting and weed barrier cloth: These materials can be used for noxious vines and ground covers or for the suppression of stump sprouting and regrowth of weed trees. Clear plastic is used atop moist ground to super heat and kill herbaceous weeds and seeds by means of solarization. Clear plastic should be installed for four to six week at a time in the summer when there is abundant sun. Black plastic or weed barrier cloth is used to block out sunlight inhibiting growth from perennials. These materials need to remain covering the stump or root crown until food stores in the roots have been depleted.

Mulches: Mulches include wood or bark chips which when spread deep enough on the ground can retard the regrowth of weeds by blocking light and keeping the soil too cool and moist for seeds to germinate. Seeds eventually will mold or rot and die. Mulches must be spread three to five inches deep to completely block light from reaching the soil surface. Straw mulch applied at a rate of more than three tons per acre (greater than four inches deep) is a less favorable alternative to wood mulches because it easily blows away. Mulches also help reduce soil erosion due to raindrop splash. Mulches are susceptible to being washed away by overland flow.

Heavy equipment: The type of machinery favored for roadside maintenance in the IVMP Area is a mechanized mower that can cut vegetation fairly low (i.e., 4 to 6 inches tall). Other equipment including bulldozers, backhoes, graders and loaders may be used in areas where exotic plant density is high, native species are absent, and impacts to sensitive or riparian stream habitats are avoided. In order to most effectively reduce weed regrowth and the seed bank, mowing should be conducted frequently and when weeds are flowering (bolting) and before seed has set. **Table 4-1** provides the bloom periods for target weed species to assist in timing control efforts, such as mowing. Early in the bloom period is an appropriate time for control efforts.

Table 4-1 Target Invasive Plant Species With Bloom Period

Trees	
Name	**Bloom Period**
Black Wattle (*Acacia melonoxylon*)	May - June
Eucalyptus or Gum (*Eucalyptus globulus*, etc.)	December - May
Green Wattle (*Acacia dealbata*)	February - March
Vines and Ground Covers	
Cape Ivy (*Delairea odorata*)	December – March
English Ivy (*Hedera helix*)	NA
Iceplant (*Carpobrotus edulis, Carpobrotus chilensis*)	April – October
Periwinkle (*Vinca major*)	March – July
Shrubs	
French Broom (*Genista monspessulana*)	March – May
Himalayan berry (*Rubus discolor*)	May – July
Scotch Broom (*Cytisus scoparius*)	April – June
Spanish Broom (*Spartium junceum*)	April – June
Grasses	
Giant Reed (*Arundo donax*)	March – September
Pampas Grass (*Cortaderia jubata*)	June – September
Thistles and Herbs	
Bull Thistle (*Cirsium vulgare*)	June – September
Fennel (*Foeniculum vulgare*)	May – September
Italian Thistle (*Carduus pycnocephalus*)	May – July
Poison hemlock (*Conium maculatum*)	April – July

Power tools: Chain saws, weed eaters. Weed eaters should be used frequently and during bloom periods indicated above in Table 4-1.

Weed Flaming: This technique uses a propane torch to kill weeds by superheating the internal plant cells until they rupture. Flaming should be carried out during the open burn season, when

fire hazard is minimal. Torches such as the Weed Dragon® have a 100,000 BTU (British thermal unit) flame which reaches 2,050 degrees Fahrenheit. The 27-½-inch long torch typically has a two-inch bell, which emits and directs the flame. A pressure valve at the handle allows the user to turn the fuel on or off and change the intensity of the flame [5-25 PSI (pounds per square inch)]. A five to ten foot long hose attaches to a 10 to 20-pound propane tank that can be attached to a dolly or backpack. Fuel consumption is typically 2.5 pounds per hour at 18 PSI. The torch is most effective on weeds 1-4 inches tall. Weeds do not need to be burnt. Most herbaceous weeds only need about $1/10^{th}$ of a second contact time with the flame to kill the plant. Larger or more robust plants may require longer time. Longer exposure time may be necessary on plants covered with dew or water, as water insulates the plant tissue. Recommendations suggest that the plant is sufficiently heated when squeezing a leaf between your thumb and index finger-leaves a noticeable thumbprint on the leaf. Plants will wilt shortly after flaming.

Hand tools: Hand tools used for mechanical control include shovels, pulaskis, loppers, weed wrenches, grip hoists, machetes.

Manual removal: Manual removal of herbaceous and shallowly rooted exotic species (i.e., small French broom) is cost effective and can control some species. This method is most effective when most or the entire root of the plant is removed simultaneously to prevent resprouting. Table 4-2 provides optimal timing for removal of weeds.

4.3 CULTURAL CONTROLS

Roadside maintenance activities will be planned, implemented, and supervised, insofar as possible and considering other needs, to minimize opportunities for colonization by target pest plants. Avoiding soil disturbance is often a key factor in helping to prevent reinfestations of pest plants. Cultural controls include providing pest plants competition for light, nutrients, water, and space through revegetation and encouragement of native plant communities.

Cleanliness: Vehicles and equipment have the potential to disperse exotic seeds great distances. There may be long lived seeds of species, such as Scotch broom, in mud, debris, or greenwaste from infested locations. If just one seed germinates and the plant matures to reproductive age, it can start a new population. Before working in a sensitive ecosystem, such as sandhill or Ponderosa pine woodland, earth moving equipment used for any purpose, including road construction, maintenance and watershed rehabilitation, should be thoroughly cleaned and inspected by CSCDPW staff to prevent seed dispersal.

Disposal of Plant Debris: Exotic plants that have been removed from the ground should either be left on site for consumption during a prescribed burn, or should be carefully moved to another area for pile burning at a later date. Efforts should be made to avoid adding a burden to the CSCDPW's solid waste management by burning or otherwise disposing of plant debris. Extra care should be taken in cases where the material is moved off-site to avoid contaminating additional areas with seed or rhizomatous materials.

Information: Information should be provided to the public and CSCDPW employees in the form of signs, interpretive displays, brochures, and programs on the threat of exotic species and the need to control them. This may help to limit the spread of exotics to and from other lands. These materials should include information on how to differentiate exotics from native species with the

same general appearance. Currently literature and brochures that accomplish this goal are available through the Santa Cruz Chapter of the California Native Plant Society and the Wildlands Restoration Group.

Seeding and Revegetation: Hydroseed, drill seed and/or plantings with plugs or potted native plants will be selected on a site specific basis given consideration of localized topography, soil type, proximity to aquatic habitats, and erosion control needs. Another goal of revegetation along county-maintained roads within the IVMP Area is to provide plant cover over bare ground to prevent and absorb the movement of sediment and pollutants from the target roadside into adjacent perennial waters.

Preference in species selection should be given to low-growing, low-maintenance native species common to each vegetation type that can provide ground cover, erosion control, and competition to target pest plants along road easements. Short stature (less than 3 ft tall)herbaceous species that can tolerate grazing or mowing, such as grasses, subshrubs and ground covers should be favored for planting in Zone 2, while all types of plants including vines, ferns, subshrubs, shrubs and herbs can be used for revegetation in Zone 3 (see **Figure 2**).

Locally grown seed, plants and revegetation services are available through Central Coast Wilds, a local native plant nursery and restoration company. Typical pricing for plants are given below (pricing as of July 2007):

Grasses (P128 flat): $24.99

Two-inch pots (rose pots)/LT6 pots: $0.99-1.29

Tree bands/LT6 pots/Four-inch pots: $1.99-2.49

Deep pots: $3.99

1-gallon tree pots: $4.99 or $5.99

5-gallon pots: $19.99 or $24.99

15-gallon pots: $49.99

Central Coast Wilds provides quantity discounts as follows:

100-500 plants = 5 percent off total purchase

500-1,000 plants = 8 percent off total purchase

1,000 or more = 10 percent off total purchase

While Central Coast Wilds could not provide a listing of grass seed and pricing, many varieties of seed can be obtained with enough lead-time for the seed to be collected. Lists of seed and representative pricing from Pacific Coast Seed INC. and Elkhorn Native Plant Nursery are provided in Appendix F. Companies like Central Coast Wilds can provide seed from sources within Santa Cruz County to prevent potential hybridization with localized varieties or subspecies from other regions.

Table 4-2 Potential Native Plant Species for Roadside Revegetation and Seeding in Zone 2 or 3 by Native Plant Community

Scientific Name	Common Name	Habit	Planting Preference Comments
Arroyo Willow Riparian Forest			
Artemisia douglasiana	mugwort	perennial herb	Prefers at least seasonally wet sites, partial sun to full sun
Rubus ursinus	California blackberry	perennial herb/subshrub	Upland sites from shade to full sun
Myrica californica	California waxmyrtle	Shrub-small tree	Ideal species for revegetation at road failures/sedimentation projects along creekside banks
Black Cottonwood Riparian Woodland			
Polystichum munitum	Western sword fern	Perennial herb	Upland to moist sites, partial sun to shade
Rubus ursinus	California blackberry	Perennial herb/subshrub	Upland sites from shade to full sun
Stachys ajugoides	Hedgenettle	Perennial herb	Open to shady sites in moist to dry locations
Black Cottonwood-Western Sycamore Riparian Woodland			
Rubus ursinus	California blackberry	Perennial herb/subshrub	Upland sites from shade to full sun
Polystichum munitum	Sword fern	Perennial herb	
Stachys ajugoides	Hedgenettle	Perennial herb	Open to shady sites in moist to dry locations
Black Oak Woodland			
Bromus carinatus	California brome	Perennial grass	Upland sites, full sun to partial sun
Festuca occidentalis	Western fescue	Perennial grass	Upland sites
Nassella pulchra	Purple needlegrass	Perennial grass	Does not establish well with competition, best with sparse to open ground, ridgelines, open slopes above roads.
Box Elder Riparian Forest			
Athyrium filix-femina	lady fern	Perennial herb	Plant from container
Dryopteris arguta	Wood fern	Perennial herb	Plant from container
Rubus ursinus	California blackberry	Perennial herb/subshrub	Upland sites from shade to full sun
Symphoricarpos albus var. *laevigatus*	snowberry	Shrub	Shady woods and streambanks
California Bay Forest			
Claytonia perfoliata ssp. *perfoliata*	Miner's lettuce	Annual herb	Partial sun to shade, upland or seasonally moist sites
Cyperus eragrostis	Umbrella sedge	Perennial herb	At least seasonally wet sites, ditches
Rubus ursinus	California blackberry	Perennial herb/subshrub	Upland sites from shade to full sun

Table 4-2 Potential Native Plant Species for Roadside Revegetation and Seeding in Zone 2 or 3 by Native Plant Community

Scientific Name	Common Name	Habit	Planting Preference Comments
California Annual Grassland			
Achillea millefolium	Common yarrow	Perennial herb	Many habitats
Bromus carinatus	California brome	Perennial grass	Upland sites, partial to full sun
Leymus triticoides	Creeping ryegrass	Perennial grass	Best in at least seasonally wet sites
Nassella pulchra	Purple needlegrass	Perennial grass	Does not establish well with competition, best with sparse to open ground, ridgetops, open slopes.
Coast Live Oak Woodland			
Claytonia perfoliata ssp. *perfoliata*	Miner's lettuce	Annual herb	Partial sun to shade, upland or seasonally moist sites
Juncus effusus var. *pacificus*	Pacific rush	Perennial herb	At least seasonally wet sites
Juncus patens	Common rush	Perennial herb	At least seasonally wet sites
Pteridium aquilinum	Bracken fern	Perennial rhizomatous herb	Partial sun to full sun
Rubus ursinus	California blackberry	Perennial herb/subshrub	Upland sites from shade to full sun
Symphoricarpos albus var. *laevigatus*	snowberry	Shrub	Shady woods and steambanks
Coyote Brush Scrub			
Lessingia filaginifolia var. *filaginifolia*	California aster	Perennial herb	Upland sites from partial to full sun
Leymus triticoides	Creeping ryegrass	Perennial grass	Best in at least seasonally wet sites
Nassella pulchra	Purple needlegrass	Perennial grass	Does not establish well with competition, best with sparse to open ground, ridgetops, open slopes.
Rubus ursinus	California blackberry	Perennial herb/subshrub	Upland sites from shade to full sun
Douglas-Fir Forest			
Festuca occidentalis	Western fescue	Perennial grass	Open to partial sun sites, forms dense clumps
Rubus parviflorus	Thimbleberry	Perennial shrub	Upland sites, full sun to shade
Symphoricarpos mollis	Creeping snowberry	Perennial shrub	Upland sites, partial sun to shade
Whipplea modesta	Modesty	Perennial subshrub	Upland sites, partial sun to shade

Table 4-2 Potential Native Plant Species for Roadside Revegetation and Seeding in Zone 2 or 3 by Native Plant Community

Scientific Name	Common Name	Habit	Planting Preference Comments
Knobcone Pine Woodland			
Claytonia perfoliata ssp. *perfoliata*	Miner's lettuce	Annual herb	Partial sun to shade, upland or seasonally moist sites
Lessingia filaginifolia var. *filaginifolia*	California aster	Perennial herb	Upland sites from partial to full sun
Lotus scoparius var. *scoparius*	Deerweed	Perennial herb	Prefers well-drained soils, partial to full sun
Oregon White Oak Woodland			
Bromus carinatus	California brome	Perennial grass	Upland sites, full sun to partial sun
Claytonia perfoliata ssp. *perfoliata*	Miner's lettuce	Annual herb	Partial sun to shade, upland or seasonally moist sites
Leymus triticoides	Creeping ryegrass	Perennial grass	Best in at least seasonally wet sites
Maritime Ponderosa Pine Woodland			
Claytonia perfoliata ssp. *perfoliata*	Miner's lettuce	Annual herb	Partial sun to shade, upland or seasonally moist sites
Lessingia filaginifolia var. *filaginifolia*	California aster	Perennial herb	Upland sites from partial to full sun
Lotus scoparius var. *scoparius*	Deerweed	Perennial herb	Prefers well-drained soils, partial to full sun
Red Alder Riparian Forest			
Polystichum munitum	Western sword fern	Perennial herb	Upland to moist sites, partial sun to shade
Woodwardia fimbriata	Giant chain fern	Perennial herb	Prefers moist to wet sites
Leymus triticoides	Creeping ryegrass	Perennial grass	Best in at least seasonally wet sites
Red Willow Riparian Forest			
Artemisia douglasiana	mugwort	perennial herb	Prefers at least seasonally wet sites, partial sun to full sun
Myrica californica	California waxmyrtle	Shrub-small tree	Ideal species for revegetation at road failures/sedimentation projects along creekside banks
Rubus ursinus	California blackberry	perennial herb/subshrub	Upland sites from shade to full sun
Redwood Forest			
Artemisia douglasiana	mugwort	perennial herb	Prefers at least seasonally wet sites, partial sun to full sun
Bromus carinatus var. *carinatus*	California brome	Perennial grass	Upland sites, full sun to partial sun
Juncus effusus var. *pacificus*	Pacific rush	Perennial herb	At least seasonally wet sites

Table 4-2 Potential Native Plant Species for Roadside Revegetation and Seeding in Zone 2 or 3 by Native Plant Community

Scientific Name	Common Name	Habit	Planting Preference Comments
Juncus patens	Common rush	Perennial herb	At least seasonally wet sites
Oxalis oregana	Redwood sorrel	Perennial herb	Upland sites, partial sun to shade
Polystichum munitum	Western sword fern	Perennial herb	Upland to moist sites, partial sun to shade
Prunella vulgaris var. *lanceolata*	Self-heal	Perennial herb	At least seasonally wet sites
Rubus parviflorus	Thimbleberry	Perennial shrub	Upland sites, full sun to shade
Rubus ursinus	California blackberry	perennial herb/subshrub	Upland sites from shade to full sun
Satureja douglasii	Yerba buena	Perennial subshrub	Upland sites, partial sun to shade
Whipplea modesta	Modesty	Perennial subshrub	Upland sites, partial sun to shade
Redwood-Douglas-Fir Forest			
Artemisia douglasiana	Mugwort	Perennial herb	Prefers at least seasonally wet sites, partial sun to full sun
Bromus carinatus	California brome	Perennial grass	Upland sites, full sun to partial sun
Festuca occidentalis	Western fescue	Perennial grass	Open to partial sun sites, forms dense clumps
Juncus effusus var. *pacificus*	Pacific rush	Perennial herb	At least seasonally wet sites
Juncus patens	Common rush	Perennial herb	At least seasonally wet sites
Rubus ursinus	California blackberry	Perennial herb/subshrub	Upland sites from shade to full sun
Satureja douglasii	Yerba buena	Perennial subshrub	Upland sites, partial sun to shade
Whipplea modesta	Modesty	Perennial subshrub	Upland sites, partial sun to shade
Shreve Oak Woodland			
Claytonia perfoliata ssp. *perfoliata*	Miner's lettuce	Annual herb	Partial sun to shade, upland or seasonally moist sites
Bromus carinatus	California brome	Perennial grass	Upland sites, full sun to partial sun
Dryopteris arguta	Wood fern	Perennial herb	Partial sun to shade
Rubus ursinus	California blackberry	Perennial herb/subshrub	Upland sites from shade to full sun
Symphoricarpos albus var. *laevigatus*	snowberry	Shrub	Shady woods and steambanks

Table 4-2 Potential Native Plant Species for Roadside Revegetation and Seeding in Zone 2 or 3 by Native Plant Community

Scientific Name	Common Name	Habit	Planting Preference Comments
Tanoak Forest			
Dryopteris arguta	Wood fern	Perennial herb	Partial sun to shade
Rubus ursinus	California blackberry	Perennial herb/subshrub	Upland sites from shade to full sun
Symphoricarpos mollis	Creeping snowberry	Perennial shrub	Upland sites, partial sun to shade
Valley Oak Riparian Woodland			
Bromus carinatus	California brome	Perennial grass	Upland sites, full sun to partial sun
Claytonia perfoliata ssp. *perfoliata*	Miner's lettuce	Annual herb	Partial sun to shade, upland or seasonally moist sites
Festuca occidentalis	Western fescue	Perennial grass	Open to partial sun sites, forms dense clumps
Rubus ursinus	California blackberry	perennial herb/subshrub	Upland sites from shade to full sun
Symphoricarpos albus var. *laevigatus*	Snowberry	Shrub	Shady woods and steambanks
White Alder Riparian Forest			
Athyrium filix-femina	Lady fern	Perennial herb	
Rubus ursinus	California blackberry	perennial herb/subshrub	Upland sites from shade to full sun

4.4 CHEMICAL CONTROL

Herbicides: Limited and targeted herbicide applications will be considered for control of certain target pest plants following evaluation of alternative mechanical, physical, and cultural means. If it is determined that these options are either not acceptable or not feasible, chemical herbicides can be used. Targeted use of herbicides can be an effective tool for spot treatments and follow-up of treatment sites in IVMP roadsides more than 60 feet from perennial waters (i.e., areas where roadside management does not overlap with fisheries, riparian and wetland habitats). Such targeted applications would be from a wand and backpack sprayer, brush or other localized, targeted application method.

Herbicides should not be considered for control of exotics on roadsides within 60 feet of perennial waters. However, it is recognized that herbicide applications may be necessary for effective control of certain target pest plant species (i.e., giant reed (*Arundo*) or silver acacia) within this zone. Any use of herbicides in these areas, would first require site by site review and approval from the County IPM Department Advisory Group (DAG).

4.5 EROSION CONTROL METHODS

Mulching: Straw mulch is a common, inexpensive, and effective method of erosion control on gentle slopes less than 2:1. Weed free straw such as rice straw should be applied following seeding at a rate of 1.5-2 tons/acre, 1-2 inches deep, covering 80 percent of the soil surface

(McCullah 1999). The straw should be crimped into the soil to prevent blowing away and to more effectively retard soil loss from overland flow. Crimping can be done by track rolling a slope with a dozer or crimping with a sheep-foot roller attachment on a backhoe or excavator. If the site is small and inaccessible a shovel can be used to crimp straw in loose or soft soil.

Hydromulching or hydroseeding: Hydromulching or hydroseeding is a method of reducing soil erosion on bare soils and providing a medium for seed to germinate. Hydromulches are a mixture of paper or wood cellulose fibers, seed, water, and sometimes fertilizers and tackifiers that are pumped from a machine and sprayed onto a slope. Tackifiers can aid in the adhesion of the mixture to the slope and help retard breakdown from initial rainstorms. Timing the hydromulching is perhaps the single most important step to successfully preventing erosion. Most hydromulches break down in the first few rainstorms, so to be most effective should be applied right before the first rains in fall or winter so seed can begin germinating and hold the slope once heavier rain comes later in the season.

There are a number of types of hydromulches for different applications and costs. Paper based mulches are the cheapest but applications should be limited to flat to very gentle slopes since they break down easily when rewetted. Wood cellulose and treated wood cellulose offer more protection from the first few rainstorms and are more effective on steeper slopes. There are more expensive products that do not require a day or more of cure time so they can be applied when it is beginning to rain and hold their structure though a season or two. Table 4-3 lists a range of products, the description, limitations, application rates, and costs.

Erosion control blankets: Erosion control blankets are typically used in stabilizing hillslopes greater than 2:1. These mats typically made of jute, straw, coconut fiber, and straw-coconut fiber combinations help prevent erosion from raindrop splash and overland flow while holding moisture in the soil to aid in native seed germination. Jute netting is generally the cheapest of the products, but offers slightly less coverage from raindrop splash erosion than straw, coconut, or coconut fiber blankets. Straw and coconut blankets are held together with either a photodegradable plastic wire netting or biodegradable jute netting. The biodegradable jute netting is a more appropriate choice where threatened and endangered species such as California red-legged frog and tiger salamanders are known to occur because the jute netting gives to allow these and other species to move through the blankets. Blankets bound together by plastic netting are not forgiving and have been known to harm or kill wildlife. Table 4-3 lists a variety of products and costs. An alternative to save money and achieve more cover is to blow weed free straw on a slope then lay down jute netting over the top securing it well to hold down the straw. Crimping the straw into the slope prior to laying down the jute netting would further increase the slope stability.

Wattles: Wattles are 9 to 12-inch diameter bundles of straw or coconut coir that are encased in netting and used to reduce the movement of sediment. Wattles should be placed along the contour of the slope and be spaced according to the slope as indicated below:

Maximum wattle spacing

10 ft on 1:1 slopes

20 ft on 2:1 slopes

30 ft on 3:1 slopes

40 ft on 4:1 slopes

Wattles should be staked down and 1/3rd of their diameter buried in a trench so water filters through the wattle. Wattles work well as a secondary line of defense when using straw mulching to protect the surface of a slope.

Table 4-3 Erosion Control Product Descriptions and Pricing

Product	Description	Dimensions	2007 Costs*
Erosion control blankets			
Jute	Woven jute fiber	4 ft wide x 225 ft	$0.58/sq. yard
Western Excelsior SS-2	This is a straw blanket stitch-bonded to two photodegradable nets. S-2 is ideal for short duration projects of low-flow channels or moderate slopes for up to one year.	7.5 ft wide x 120 ft	$0.45/sq. yard
Western Excelsior CS-3	70% straw, 30% coconut fiber blanket stitch-bonded between two photodegradable nets. The top net is UV stabilized to extend the life to two years. This product is ideal for very steep slopes.	7.5 ft wide x 120 ft	$0.67/sq. yard
Western Excelsior CC-4	This is a 100% coir fiber stitch-bonded between two UV stabilized nets. Ideal for moderate flow channels and steep slopes. A three-year life span can be expected.	7.5 ft wide x 120 ft	$0.805/sq. yard
Western Excelsior SS-2 All Natural	100% weed free straw bound between two jute net layers stitched with cotton treads on 2-inch centers. Fully biodegradable. A one-year life span can be expected. Recommended in sensitive habitats	7.5 ft wide x 120 ft	$0.97/sq. yard
Western Excelsior CS-3 All Natural	70% straw, 30% coconut fiber blanket bound between two jute net layers stitched with cotton treads on 2-inch centers. Fully biodegradable. A two-year life span can be expected. Recommended in sensitive habitats	7.5 ft wide x 120 ft	$1.08/sq. yard
Western Excelsior CC-4 All Natural	100% coconut matrix bound between two jute net layers stitched with cotton treads on 2-inch centers. Fully biodegradable. A two-year life span can be expected. Recommended in sensitive habitats	7.5 ft wide x 120 ft	$1.28/sq. yard
Wattles			
Straw wattle	Rice straw with photodegradable plastic mesh. A two-year life span can be expected.	9-inch diameter x 25 ft	~$1.00/ft
Bio-straw wattle	Rice straw encased in biodegradable jute mesh. A two-year life span can be expected.	9-inch diameter x 25 ft	$1.57/ft
Straw wattle	Rice straw with photodegradable plastic mesh. A two-year life span can be expected.	12-inch diameter x 25 ft	$2.50-3.00/ft
Coconut wattle	Fine coconut (coir) fiber. This log lasts three or more years. The product is frequently used for stream, pond or riverbank protection. Aquatic plants are normally planted in the log and the	12-inch diameter x 25 ft	$5.25/ft

Table 4-3 Erosion Control Product Descriptions and Pricing

Product	Description	Dimensions	2007 Costs*
	root structure takes over the erosion protection job as the log biodegrades.		
Hydro-mulch			
Recycled paper fiber	100% paper fiber. Use only on flat ground early in the rain season.	50 lb bag (apply approx. 1,500 – 2,000 lbs/acre)	$7.50-8.00/bag ($225-320/acre)
Western Excelsior	50% paper, 50% wood fiber. Use on slopes less than 4:1 early in the rain season.	50 lb bag (apply approx. 1,500-2,000 lbs/acre)	$8.50/bag ($255-340/acre)
Terra-Mulch®	100% wood cellulose fiber better bond strength than paper. Use on slopes less than 4:1 early in the rain season.	50 lb bag (apply approx. 1,500-2,000 lbs/acre)	$11.50/bag ($345-460/acre)
Terra-Matrix™ SM	Stabilized Fiber Matrix (SMF) a pre-blended combination of Thermally-Refined™ wood fibers, cross-linked tackifiers and activators anchor the fiber matrix to the soil surface. The SMF prevents polymer leaching and withstands a few rainfall events. Use on slopes less than 3:1 (2:1 max with higher application rate) applied early in the rain season.	50 lb bag (apply approx. 2,500-3,000 lbs/acre)	$20.50/bag ($1,025-1,230/acre)
Hydro-Blanket® BFM	Bonded Fiber Matrix (BFM) provides the best protection on slopes less than 1:1 at the lowest overall cost. It is less expensive and faster to install than blankets or sod and can be more effective than blankets and conventional hydraulic mulches as long as it is applied early in the season and not subjected to heavy rains.	50 lb bag (apply approx. 2,500-3,000 lbs/acre)	$34/bag ($1,700-2,040/acre)
Flexterra® FGM	The product is a flexible growth medium (FGM) made of Thermally Refined™ wood fibers, crimped interlocking fibers, and additives. It has no cure time allowing application later in the rainy season. Offers better protection on slopes up to 1:1 than rolled erosion control blankets (ECB) and bonded fiber matrix (BFM).	50 lb bag (apply approx. 3,500 lbs/acre)	$41/bag ($2,870/acre)
CocoFlex™ ET-FGM	Extended Term - Flexible Growth Medium (ET-FGM) is designed with blended coconut and wood fibers, crimped interlocking man-made fibers and additives that protect soils up to two years. It has no cure time allowing application later in the rainy season. Ideal consideration for semi-arid areas and sites where vegetation establishment may be delayed due to harsh conditions.	50 lb bag (apply approx. 3,500 lbs/acre)	$56/bag ($3,920 /acre)

*Costs provided by Reed & Graham, Inc., San Jose, CA. Phone: 888-381-0800

4.6 MONITORING

The effect of all control activities, including "no action," will be monitored to determine the need to modify control techniques (e.g., initiation, re-initiation, or refinement). Monitoring techniques, control objectives, and success criteria will be developed specific to each species being managed. Monitoring and adaptive management will be most effective if implemented by the maintenance staff that performed the initial maintenance.

Monitoring techniques may include any or all of the following:

- Evaluating the results of specific maintenance practices in the 60 ft. sensitive habitat zone.
- Surveys and photography. Permanent photo points will be established and photographs will be taken so that the physiological and morphological stage of the species of greatest concern is similar each time.
- Roadside surveys for target pest plants during routine operations.
- Mapping of the distribution and acreage of target pest plants. Mapping and tracking of high priority species will be performed within the IVMP Area near perennial waters to analyze and communicate the problem, and to determine funding and effort required to achieve target roadside control goals for control.

The re-establishment of native species will complement roadside management and control efforts by supporting control of the roadside cover to exclude exotics. Once control techniques are initiated or target pest plant species are under control, areas will be revegetated with native species, if necessary, to restore original ecological function and to impart resistance to re-invasion of target pest plant species.

5.1 TARGET INVASIVE PLANT SPECIES

This section discusses non-native trees, vines, ground covers, shrubs, grasses, thistles and herbs that are identified as target pest plants (see **Table 1-1**). The ecology of each plant is presented and integrated control methods for the IVMP Area are discussed.

5.1.1 Trees

5.1.1.1 Black Wattle (Acacia melonoxylon) & Silver Wattle (Acacia dealbata)

Black Wattle

Silver Wattle

Ecology
Silver wattle (*Acacia dealbata*) and black wattle (*Acacia melonoxylon*) are both trees that originate from Tasmania. These trees grow well along disturbed roadsides and in nutrient poor soils. Silver wattle is the most prevalent in Santa Cruz Couny forming dense stands that out compete other vegetation. The species produces allelopathic chemicals in the leaves and seed pods that cover the ground in a thick duff and inhibit native seed germination. The trees spread by seed or from stumb and root sprouts. The trees produce an abundace of seed which remains viable 15 to 20 years (Holloran et al., 2004).

Mechanical Control
Mechanical control can be achieved by felling trees and treating stumps and/or stump sprouts in different ways. In sensitive areas, such as near streams or wetlands, stumps should be cut as close to the ground as possible. An eight-inch deep trench should be dug around the stump. Be sure to dig the trench around any exposed surface roots. Cover the stump and any exposed roots with 1 or two layers of heavy gauge black plastic. Be sure no sticks or pointed pieces of wood are sticking up under the plastic that could puncture a hole. Secure the plastic by doubling over the ends and stacking it in the trench so it does not tear. Bury the plastic in the trench to ensure no light reaches the roots or trunk. The black plastic will block sunlight and heat up the stump and soil preventing stump sprouting. If possible remove leaf and seed litter to help improve revegetation efforts.

Black wattle will re-sprout from lateral roots so annual to biannual monitoring is necessary to remove these shoots and dig out the connecting roots (Moore et al. 2002). A weed wrench is an effective tool for removing smaller seedlings or trees in soft or moist soil.

Chemical Control
Chemical control outside riparian or wetland areas consist of cutting the stump and immediately painting the cut with an herbicide. A 50 percent strength solution of Roundup® is effective if painted on the stump within one or two minutes of cutting (Elkhorn Slough National Estuarine Research Reserve 2000). At least one followup visit per year should be conducted to remove any subsequent sprouting or seedlings.

Cultural Control
Due to effective ability of the weed tree to outcompete other species and then inhibit seed germination, cultural methods are relativly ineffective. Once an infected area has been cleared suitable native vegetation should be planted accoring to the surrounding or appropriate plant community for the particular location. See Table 4-2 for suggested species.

5.1.1.2 Eucalyptus or Blue Gum

Ecology
Eucalyptus or blue gum (*Eucalyptus globulus*) was introduced to California from Australia to be used as a lumber crop in the 1850s. Widely planted in varying ecosystems, the crop failed to produce quality lumber when grown in the northern hemisphere (Moore et al. 2002). The species is invasive, growing fast in moist areas and out-competing other species. The species contains allelopathic chemicals, which leach from the leaves and bark into the soil limiting plant growth and inhibiting seed germination. The trees are a hazard in that they often drop large limbs and the oils in the plant are highly flammable.

Mechanical Control
See description for Black Wattle, above

Chemical Control
Chemical control works best following mechanical felling of the tree. Stumps should be cut as low to the ground as possible. As soon as possible following cutting of the tree the stumps should be brushed clean of sawdust and glyphosate (Roundup, Rodeo® or AquaMaster®) should be applied at 100 percent strength. The most effective time for cutting and herbicide application for this species is the fall (Boyd 2007).

If stump sprouting occurs following chemical application to the stumps, an effective chemical retreatment is an application of 80 percent glyphosate in a 20 percent oil carrier to overlapping frill cuts made on vertical portions of the stumps in live cambium tissue.

Cultural Control
Once a forest of trees is established it is difficult and costly to control. Revegetating areas with natives may be difficult if a thick duff layer exists from the eucalyptus. The leaf litter may need to be scraped and disposed of before replanting can become effective. Once an infected area has been cleared suitable native vegetation should be planted accoring to the surrounding or appropriate plant community for the particular location. See Table 4-2 for suggested species.

The best method of control eucalyptus is to educate the public of its hazards and advocate the removal of trees. The best method for the public to eliminate the trees is to remove trees when they are small. Seedlings can be pulled out and small trees can be cut and have full strength Roundup painted on the stumps with a brush within 1 to 2 minutes of cutting (Moore et al. 2002). Alternatively covering stumps with black plastic is an effective herbicide alternative for the public.

5.1.2 VINES AND GROUND COVERS

5.1.2.1 Cape Ivy (Delairea odorata)

Ecology
Cape ivy (*Delairea odorata*) is a long-lived perennial vine native to South Africa. This species spreads by extensive underground roots, aboveground rooting stems (stolons) and by any small fragment of leafs, stems or roots. While this plant produces flower, fruits of this species are almost always sterile in California (Bossard et al. 2002). Cape ivy prefers shady sites with moist soils. If the vine occurs in areas without year round moisture, the vine will die back in the dry season (Bossard et al. 2000). Cape ivy can smother native vegetation, and has been observed decreasing native cover up to 95 percent where it has invaded (Alvarez 1995). The foliage is toxic to mammals, and the alkaloids in its leaves can decrease fish survival (Bossard et al. 1998). Due to its shallow root system, Cape ivy can lead to an increase in soil erosion.

Mechanical Control
Mechanical removal of Cape ivy is effective, although labor intensive. All parts of this plant must be removed to prevent regrowth. Removal of roots requires clearing away all other vegetation to gain access to Cape ivy roots. All Cape ivy must be removed from the site, since this plant can resprout from small fragments even when left in piles for several months in full sun. Removal sites must be revisited at 4 to 8 week intervals to remove fast growing resprouts (Bossard et al. 2000). An effective technique for Cape Ivy removal involves removal of almost all native and nonnative vegetation and duff from the infestation site, and ‘rolling’ away the mat of roots produced by Cape ivy in the upper reaches of the soil. This method requires replanting removal sites with native vegetation and following up to ensure the plant does not recolonize from small fragments left behind (Robertson, D. pers. observation).

Chemical control
Control of Cape ivy using herbicide can be effective with the right timing and type of chemical. A mixture of 1 percent glyphosate (as Roundup®), and 0.1 percent silicone surfactant (as Silwit®) in water, has proven effective when applied as a foliar spray at 6.4 liters/hectare. This chemical treatment should not be used within the 60-foot riparian areas.

AquaMaster (without a surfactant) can be effective for initial control of this species without endangering aquatic life (Frey 2007). However, extensive resprouting may occur from underground parts (Bossard and Benefield 1995).

Cultural Control
Any of the suggested removal techniques should be followed up with native plantings appropriate for the habitat where removal has occurred (Table 4-2). If Cape ivy removal occurs

on steep slopes, an erosion control matting/fabric should be used to stabilize soils until native plants or seeds are established (**Table 4-2**).

5.1.2.2 English Ivy (Hedera helix)

Ecology
English Ivy (*Hedera helix*) grows as both a non-flowering perennial woody vine (juvenile) and a flowering woody subshrub (adult). This plant roots at leaf nodes and has the ability to adhere to both artificial and natural surfaces. It can resprout from cut stems. The vine form of this plant can grow up into trees, often killing the tree by depriving it of sun as well as by weighting the tree down, weakening the tree making and it susceptible to topple. Roots of this plant are typically shallow. English ivy survives in shade but thrives in full to partial sun.

Mechanical Control
Aboveground growth of English ivy can be removed by hand or with loppers. However, the roots will also need to be removed to avoid resprouting. If vines are growing up trees, the vine can be cut below and left to die on the tree. A follow up treatment with herbicide will be needed to prevent resprouting. Pulling is best in winter and spring when the soil is moist. Cut plants can usually be left in piles and will typically not resprout once removed from the ground.

Chemical Control
Chemical control of this plant has limited success. The plant is tolerant of pre-emergent herbicide (Roundup®) and the thick waxy cuticle of leaves and stems render post-emergent herbicides such as 2, 4-D only partially effective (Bossard et al. 2000). Chemical control after brush cutting leaves and stems is more effective than applying to uncut plants. After mowing or brushcutting, Roundup® at a concentration of 1:1 with water must be applied within 1 minute of cutting (CDFG and NOAA 2002). For stems of English Ivy growing into trees, cut stem at ground level and treat with 0.5 percent Roundup®.

Cultural Control
English ivy was observed growing in many landscaped yards in Santa Cruz County. During initial surveys for exotics, there were several homeowners attempting removal of this plant due

to its aggressive growth. Teaming with local landowners to remove this plant from yards will be critical to control of this species along roadsides. Other cultural controls include revegetation of areas where English ivy is removed. Revegetation is critical to prevent re-infestation by exotic plants, and to reduce erosion on exposed soils.

5.1.2.3 Iceplant (Carpobrotus edulis,Carpobrotus chilensis)

Ecology
Highway iceplant (*Carpobrotus edulis*) is a low growing, succulent perennial found along the immediate coast of California and Mexico. This species roots at stem nodes and can create dense, monotypic stands over large areas. It also spreads and reproduces through seed. Salt exuded from this plant can inhibit the growth of native species in areas where iceplant has invaded (NPS 1994). In the roadside management areas in Santa Cruz County, iceplant appears to be spreading from landscaped areas of housing and business parks in sunny areas around and in city centers. It is not significant problem in the understory of forests in Santa Cruz County.

Mechanical Control
Mechanical removal has broadly recognized as the most successful method for controlling these species. Once removed from a site, the plant does not resprout from remaining roots as with many of the other low growing exotics outlined in this document. However, all plant material needs to be removed and disposed of offsite since fragments of vegetative materials, such as stems and leaves can resprout. Leaving pulled material in piles for long periods of time can be successful in drying out and killing the plants.

Chemical Control
A two percent concentration of Roundup® sprayed onto this plant is an effective control method with high success rates. It can take several weeks for the plant to die off after herbicide application, and resprouting can occur (Bossard et. al 2000). Since herbicide can be applied at any time to this species, application should be done at times that will have the least effect to native plants that co-occur with iceplant. These periods are typically during the late dry season in the fall, when native plants are typically dormant. Follow up will be needed for at least one year to control seedlings.

Cultural control
Iceplant's attractive flowers, low maintenance, and hardy growth make it a popular landscaping plant. Community education that discourages planting of this species will help reduce its spread. Replanting of removal sites with native species will help control reestablishment of iceplant. Table 4-2 lists appropriate plants to use for revegetation according to habitat type.

5.1.2.4 Periwinkle (Vinca major)

Ecology
Periwinkle (*Vinca major*) is a perennial vine native to southern Europe and Africa. In California, this plant reproduces vegetatively via aboveground rooting stems (stolons) rather than from seed. The plant forms dense mats that exclude native vegetation. This popular landscaping plant thrives in moist shady environments such as the understory of redwood forests. Broken stems can be transported by streams and resprout at new locations. This plant is particularly invasive along riparian corridors, where dense infestations can alter stream hydrology and vegetation diversity (McKnight 1993).

Mechanical Control
Manual removal of this plant is an effective method with multiple follow up site visits. Plants can be removed with hand tools, with careful removal of roots. Follow up site visits are recommended to remove any regrowth. A one time mowing or brush cutting without a follow up application of herbicide or removal of roots is not an effective removal technique because this plant will resprout.

Chemical Control
Roundup® can yield good results if applied within 10 minutes of brush cutting/scything periwinkle. Cutting the aboveground portions of the plants creates an opening through the waxy cuticle on the leaves and stems. High concentrations of Roundup® applied to cut plants (5 percent) can be very effective for eradication of this plant (Bossard et al. 2000). However, in order to avoid damage to native plants that co-occur with periwinkle, lower concentrations (3 percent) can be used. Herbicide application should be applied during optimal growing times during warm weather and high moisture (CDFG and NOAA 2000). Follow up treatments are recommended to eradicate resprouts.

Cultural Control
Periwinkle is a widespread ornamental plant used in gardens throughout Santa Cruz County. Several roadside infestations of periwinkle are located adjacent to landscaped yards where periwinkle was planted. Community education concerning this plant will be essential to controlling its spread. At sites where periwinkle has been removed, follow up plantings should

be used to avoid re-infestation of periwinkle and other exotic plants that thrive in disturbed areas. **Table 4-2** lists appropriate plants to use for revegetation according to habitat type.

5.1.3 Shrubs

5.1.3.1 French Broom (Genista monspessulana)

Ecology
French Broom (*Genista monspessulana*) is a perennial shrub that invades and thrives in sunny, disturbed areas of California. It is a strong competitor for sunlight and nutrients. French broom typically requires partial to full sun, and can thrive in low nutrient soils. This plant produces large amounts of seeds from June through July. Seeds can remain viable in the soil for 10-15 years.

Overall Approach to Control
Removal techniques of French broom should be considered carefully before an approach is selected. Removal techniques should be tailored to the size of the infestation, location (such as on a steep slope, in sensitive habitat, etc.) and age of plants. Plants should be removed from the leading edge toward the center of the infestation. Smaller infestation or plants located in sensitive habitats (such as riparian areas) should be removed with less invasive techniques such as removal with hand tools to avoid large amounts of soil disturbance. Larger infestations can be tackled using methods that can treat large areas with fewer man-hours. These include cutting, mowing, herbicide use or a combination of techniques. Many techniques with varying success have been studied and used to control French broom in California. Successful removal is highly dependent on timing of removal and follow up treatments, as discussed below.

Mechanical Control
Hand removal of smaller infestations of this species, such as sporadic plants occurring at low densities along roadsides can be very effective. A specialized tool called the Weed Wrench® enables easy removal of small to medium sized plants, including most roots. Hand removal should occur before the seed set of the plant (typically June-July) to avoid spreading seeds during removal efforts. Removal during the wet season makes pulling the plant much easier and

avoids breakage of the stem from the root. Roots remaining in the soil will often resprout, this is especially true of mature plants.

Another mechanical treatment involves mowing or cutting aboveground portions of the plant. Mowing broom is more effective on young plants less than 2 years old. Mowing more mature plants without a follow up treatment, such as an application of herbicide, will often result in resprouting of stems. In fact, the base of the mowed plant will become thicker and manual removal will be more difficult. Follow-up mowing should be implemented in late summer when soils are dry (Hoshovsky 1995). Flaming seedlings or resprouts with a torch is also an effective follow-up control technique.

Chemical Control

The best time to apply a foliar treatment of herbicide is when plants are actively growing, after flower formation. This is generally, but not always in late spring to early summer. Foliar spraying can result in resprouting of the plant.

Successful control of broom has also occurred by applying herbicides directly to the bark tissue of the plant (Bossard et al 1995). Glyphosate (RoundUp®) (50 percent) in Hasten or Penevator oil (50 percent) and a purple dye should be applied to the leaves and stem of mature dense stands of French broom. Plants will generally die within four to six weeks. Using a dye with the herbicide is a good way to avoid missing stems or redundant applications. Dead standing broom can then be cut or mowed and removed, making follow up control of seedlings easier.

An alternative to avoid having dead biomass would be to mechanically cut the stems and apply Glyphosate (RoundUp®) to the cut stem within 20 minutes. This method is most effective when implemented in late spring. If applied in early spring sap moving out of the stump may dilute or uplift the herbicide layer. The herbicide is less effective if applied in other times of the season when plant translocation rates are lower. While Garlon®3A has been shown to be perhaps the most effective chemical for French Broom control and is approved by the EPA for aquatic/riparian usage, it has not been approved by NOAA Fisheries near anadromous fish bearing streams due to concern for sub-lethal effects on fish (Huckins and Soll 2004).

For up to ten years after initial removal, seedlings that sprout from the seedbank should be cut and treated with a 2 percent solution of Roundup®. Other options are to cut the seedlings with a brushcutter, use a propane torch to flame them or hand pull them.

Cultural Control

Where appropriate in forest plant communities, plant trees in sunny areas of Zone 3 to enclose the forest canopy and shade out the species. Secondary thinning of trees and shrubs may be necessary to speed tree growth and canopy closure. See Table 4-2 for appropriate ground cover species to plant for the surrounding plant community.

5.1.3.2 *Himalayan blackberry* (*Rubus discolor*)

Ecology
Himalayan blackberry (*Rubus discolor*) is a sprawling viney shrub composed of thick canes with sharply hooked thorns. This shrub prefers wet or moist disturbed areas. Himalayan blackberry reproduces by seed, which are spread readily by birds and other wildlife, as well as by streams and rivers. It also spreads vegetatively by rooting canes. This hardy vine will resprout if aboveground portions are cut.

Mechanical Control
Mechanical control of this plant is best achieved by removing aboveground portions of this plant using hand tools or mowing to allow access to roots. Roots can then be dug up using a shovel, Pulaski, or mattock. All lateral roots must be removed to avoid resprouts. It is best to remove the plant before it is in seed to avoid spreading seeds around and outside of the worksite. If the plant is not is seed, the cut material can be piled and left to decompose. Another mechanical removal option for Himalayan blackberry is simply mowing the plant each year until the food reserves stored in roots are exhausted. Mowing should be done when the plant is in flower, when root reserves are at their lowest. However, this plant may resprout from root crowns in greater density if not treated with herbicide (CDFG and NOAA 2000).

Chemical Control
Chemical control of Himalayan blackberry in combination with mechanical methods is likely the most effective means of controlling this plant, especially with larger infestations. The plant initially should be mowed or cut down to the root stalk, followed up a few weeks later with an application of 50 percent Roundup® to the root base and new sprouts (CDFG and NOAA 2000). Foliar spraying of the entire plant suppresses regrowth, however, it can also stimulate the development of root growth.

Cultural Control
Following control of this species plant ground covers that can compete with this bramble forming species. California blackberry is a rapidly growing species that should be considered. See Table 4-2 for appropriate species to plant for the surrounding plant community.

5.1.3.3 *Scotch Broom (Cytisus scoparius)*

Scotch broom (*Cytisus scoparius*) is a perennial shrub similar in appearance and ecology to French and Spanish broom. Along the coast of California, this species flowers from April to June and develops matures seeds in June and July. As with French broom, the seeds can remain viable for at least 10-15 years.

Mechanical Control
As with Spanish broom, Scotch broom is not widespread in the roadside mangment areas in Santa Cruz County. Removal of plants using hand tools is the best way to control small infestations of this plant with minimal disturbance. Weed Wrenches® are an effective way to remove the plant and roots. Initial control can also be carried out by cutting and mowing within 4-6 inches of the ground in April-May. Follow up treatments will be needed to contol resprouting plants and the establishment of new seedlings for a minimum of ten years. Following initial control efforts, a follow up treatment, such as flaming, cutting or mowing, to control resprouts and seedlings and prevent seed set, should occur late in the dry season. If follow-up cutting or mowing is used for Spanish broom removal, it should be done at the end of the summer drought period, which will result in fewer stem sprouts (Bossard et. al 2000).

Chemical Control
Chemical control methods reccomended for smaller infestations of French broom are appropriate for treating Scotch broom (Please see French broom chemical control discussion).

Cultural Control
Recommended cultural control measures for French broom are also appropriate for Scotch broom.

5.1.3.4 Spanish Broom (*Spartium junceum*)

Ecology
Spanish broom is a perennial shrub that is similar in appearance and ecology to French broom. However, Spanish broom flowers earlier and produces seed from May through June, and young plants take two to three years to produce seed. The most rapid growth occurs in May. Research on the effectiveness of different treatments for controlling broom is very limited, but is generally the same as French broom with a few exceptions.

Mechanical Control
In Santa Cruz County, Spanish broom has a much more limited extent than French broom. It is likely that most infestations are small, and therefore removal by hand pulling or using a Weed Wrench® or similar tool is an efficient, low impact way to control its spread. The best time to hand pull plants is during the wet season when the soils are moist. Cutting or mowing large mature plants will often result in resprouting. Cutting or mowing stems in the spring can be effective if the infestation receives follow-up treatments in the same year to prevent seed set

from new seedlings or resprouts. Once larger plants are removed or cut at a site flaming seedlings or resprouts with a propane torch during the open burn season can be an effective follow-up measure. Follow-up cutting or mowing should be carried out between July and September when the plant is experiencing water stress (Bossard et al. 2000).

Chemical Control
Spanish broom is highly susceptible to herbicides (Bossard et al. 2000). As with French broom, a combination of cutting individual plants and applying Roundup® to the stump can be an effective means to kill individual plants. Follow up will be needed to remove seedlings as they germinate from the existing seedbank.

Cultural Control
Where appropriate in forest plant communities, plant trees in sunny areas to enclose the forest canopy and shade out the species. Secondary thinning of trees and shrubs may be necessary to speed tree growth and canopy closure. See Table 4-2 for appropriate species to plant for the surrounding plant community.

5.1.4 Grasses

5.1.4.1 Giant Reed (Arundo donax)

Ecology
Giant reed (*Arundo donax*) is a large many-stemmed perennial grass that grows nine to thirty feet tall resembling bamboo. The plant commonly grows below 1,000 feet in elevation in lower gradient riparian habitats of central and southern California but grows in a variety of soil types where a water source is prevalent. The plant spreads by sprouting from rootstocks or from fragments of the plant's stalks which often break off and float downstream to uncolonized areas (Bossard et al. 2000). Giant reed quickly destroys native habitat by displacing native vegetation and consuming waterways with a dense thicket of vegetation.

Mechanical Control
Mechanical control of giant reed is difficult and unreasonable in large older stands or areas with difficult equipment access. Hand pulling is possible in small plants generally less than six feet tall and in soft moist sandy soils, but extreme care must be taken to remove the entire rootstock to prevent resprouting. Mini-excavators with a pronged grapple attachment allow the machine to dig and rake through the soil to remove rootstalks. The small size of these machines makes them more maneuverable and causes less soil compaction. Vegetative parts should be removed or burned onsite to reduce the risk of resprouting. Chipping of the vegetation is not recommended because the long plant fibers often clog chippers (Bossard et al. 2000). Six monthly follow-up visits are recommended to remove any new sprouts. Often the new sprout, caught early, can be removed by hand without the use of equipment.

Chemical Control
Chemical control is probably the most effective method of control. The most common herbicide used is glyphosate (Roundup®, Rodeo®, or AquaMaster®). Rodeo® or AquaMaster® are more commonly used because they lack a surfactant which has been shown to be the most damaging

ingredient in herbicies applied in aquatic environments. The effectiveness of Rodeo® or AquaMaster® are reduced unless a surfactant is added.

Recommendations for foliar spraying outside riparian or wetland environments is to use 1.5 percent by volume Rodeo® or AquaMaster® with a 0.5 percent non-ionic surfactant (Bossard et al. 2000). Because these herbicides are nonselective, care must be taken to avoid herbicide drift to prevent killing other plant species. The most effective time of the year to spray is usually late August to early November after the plants have flowered and are storing energy in the root systems where hericides are most effective (Bossard et al. 2000).

Direct application of Rodeo® or AquaMaster® to cut stems is fairly effective if done in the fall when leaves are starting to turn from green to brown and the herbicide is applied in shaded locations. Rodeo® or AquaMaster® should be applied with a 50 to 75 percent strength solution. Stems should be cut approximately two to four inches from the ground and the herbicide must be immediately applied to the stalk (no later then five minutes maximum). Application of the herbicide can be accomplished using a spong or cloth tipped wand, painted on with a brush, or sprayed on with a wand or hand mister. To visually aid in application, a food dye can be added to the herbicide. Monthly follow up visits over a six month period should occur to reapply herbicide to new sprouts.

Cultural Control

Cultural control methods are limited to educating the public to not trim giant reed and leave the plant matter on the ground where it can spread downstream. Because the plant grows so vigurously it can outcompete dense riparian vegetation. Once an infected area has been cleared suitable native vegetation should be planted or allowed to establish according to the surrounding or appropriate plant community for the particular location. See **Table 4-2** for suggested species.

5.1.4.2 Pampas or Jubata Grass (Cortaderia jubata and C. selloana)

Ecology

Jubata grass (*Cortaderia jubata*) is a large 6 to 23-foot tall perennial grass that grows in disturbed coastal regions of California. The species is often confused with pampas grass (*Cortaderia selloana*) which is very similar in appearance but not as widespead. Both species reproduce asexually, spreading thousands of wind borne seed from large flower stalks. Jubata

grass and pampas grass originate from the coastal South American countries of Ecuador, Bolivia, Peru, and Chile. The species, which only tolerates lower elevations in coastal areas, was likely introduced from France as an ornamental plant (Bossard et al. 2000).

Mechanical Control
Carefully cut and remove any flower stalks and securely dispose of in a sealed trash bag to prevent airborn scattering of the seed.

In areas where soil erosion is not a major concern, such as flat ground or areas with sufficient ground vegetation, physical removal of the entire plant is effective. Plants can be pulled out with a tractor winch and choker cable wrapped around the base of the plant or removed with a backhoe or excavator. Make sure that the roots of the uprooted plants do not contact the ground or the plant may continue to grow. To avoid this plants should be inverted so the roots are facing up to the sun.

Mechanical removal of the species in inaccessible or sensitive areas must be done by hand. First remove the leaf mass to expose the root crown. Remove the entire root crown using a pulaski, shovel or other device making sure no parts of the crown are left that can resprout. Small plants can be removed whole by hand pulling or with a shovel. Make sure that the roots are turned upright to the sun and do not have contact with the soil.

Followup visits should be made twice a year to check for and remove new plants.

Chemical Control
Effective chemical control can result from using a 2 percent solution of glyphoshate (Roundup®, Rodeo®, or AquaMaster®) sprayed on the foliage until wet but not dripping. A low application volume of a 4 percent solution of the same herbicide can be as effective and cost less. The effecivness of the herbicide application is enhanced by spraying in the fall and adding a non-ionic or silicone-based surfactant to enhance penetration of the herbicide (Bossard et al. 2000). The most effective means of control would be to apply the herbicide directly to a freshly cut and exposed root crown.

Cultural Control
Where appropriate in forest plant communities, plant trees in sunny areas to enclose the forest canopy and shade out the species. Secondary thinning of trees and shrubs may be necessary to speed tree growth and canopy closure. See Table 4-2 for appropriate species to plant for the surrounding plant community.

5.1.5 Thistles And Herbs

5.1.5.1 Bull Thistle (Cirsium vulgare)

Ecology
This robust biennial non-native herb is a member of the sunflower family and can range from 1-6 ft tall when mature. The leaves are covered with large spines and the flowers are deep purple. This species originated from Europe, western Asia, and North Africa but was recorded in the San Francisco Bay Area Region as early as 1925 (Randall 2000). The species is widespread in California and is most common in more coastal grasslands below 7000 ft. It is more prevalent in recently or repeatedly disturbed areas such as pastures and roadsides. Most plants remain as a vegetative rosette of leaves for the first year, and then send up a flowering stalk to set seed in the second growing season. Flowering typically begins in June and continues through September. Seeds are released from the beginning of July through October. The key to controlling thistles, as with many pest plants, is to prevent seed production. Once seed is dispersed at a site additional plants may emerge for 5 or more years.

Mechanical Control
Mowing plants low just before the bolting plants flower is an excellent way to control bull thistle (Moore 2002). Care must be taken not to mow too early in the season, which can allow the plants to resprout, flower and set seed during the fall. Mowing infested areas repeatedly, once during the late spring and then again later in the summer, aids in control of the species by removing the ability of any resprouts to set seed. Research has shown that approximately 4 percent of the thistles that were cut two to four inches above the soil surface a month before flowering will resprout (Randall 2000). Additionally, keeping surviving plants low through mowing will prevent the distance of seed dispersal if any plants are able to reach maturity.

Chemical Control
The preferred method of bull thistle control in the IVMP program area is through mechanical means such as mowing. However, in areas of the IVMP roadsides more than 60 feet away from perennial waters, targeted applications of glyphosate (as Roundup or Roundup Pro) could be applied from a backpack unit with a wand onto the leaves of bull thistle immediately following or soon after roadside mowing has occurred.

Cultural Control
This species occurs in open sites and grasslands. Following intial control measures, such as mowing, native grass and herb seed can be hydroseeded or dispersed at the site to help provide competition for the plants if herbaceous cover is low in the area. Using a 100 percent weed-free mulch or staked mat in localized areas of dense roadside infestations may further suppress new growth and seedling establishment of the thistle following control. See **Table 4-2** for suggested species.

5.1.5.2 Fennel (*Foeniculum vulgare*)

Ecology
Fennel or anise is an erect perennial herb in the carrot family with finely dissected fragrant leaves. It reaches heights of 4-12 feet tall. The yellow flowers are typically present from April to July. Though the species is native to southern Europe and the Mediterranean region, it occurs along the California coastline, at elevations typically below 2000 feet. The species has been established for more than 120 years in California (Bossard et al. 2000). These plants especially prefer wetter or seasonally wet sites. Many types of wildlife feed on the plant and the seeds gain broader dispersal from birds and small mammals, such as rodents. The plants reproduce from both root crowns (crownsprouting) and seeds. Seeds are produced between May and November. Flowers (and fruits) are first produced 18 to 24 months into their lifecycle. Seeds can persist in the soil for many years before germinating.

Mechanical Control
Where fennel is well established, control will require a long term commitment of time and resources. Avoiding soil disturbance and other types of roadside management activities that would benefit re-establishment of the species is important. Research has shown that non-native species dominated all areas after fennel was removed, regardless of the technique used. Removal should only be considered a first step towards long-term restoration of infested areas (Dash and Gliessman 1994).

Repetitive short-interval low-level mowing has been shown to significantly reduce seed set and provide long-term control of the species by helping to exhaust the reserve energy of the taproot. Seedlings, young plants and the base of mature plants can also be killed and controlled through green flaming with a propane torch or prescribed fire during the fall months. Combining flaming efforts with a targeted application of glyphosate (Roundup® or Roundup® Pro) the following spring can contribute to successful control. Research has shown a 95 to 100 percent reduction in fennel cover with a combination of burning and herbicide methods (Klinger and Brenton 2001).

Chemical Control
Within the IVMP Area, including county-maintained roads within 150 feet of perennial waters, herbicide use should be only used in limited targeted ways for direct application to pest plants

with a backpack sprayer and wand or other manual method. Previous research has confirmed a 75 to 80 percent control and reduction of fennel populations following treatment with glyphosate (Roundup® or Roundup® Pro) alone (Dash and Gliessman 1994). In areas adjacent to or within 60 feet of riparian (stream-side), wetland or fisheries habitats as defined in Section 4 of this report, any use of herbicide is restricted without prior review and approval through the IPM Department Advisory Group,.

Cultural Control
Once an infested area has been cleared suitable native vegetation should be seeded or established to help keep soils stable and provide competition for light, space and water. Species planted should be site-specific and emphasize low-growing species that will readily provide ground cover, such as California blackberry or others according to the surrounding or appropriate plant community for the particular location. See **Table 4-2** for suggested species.

5.1.5.3 Italian Thistle (Carduus pycnocephalus)

Ecology
This annual thistle in the sunflower family ranges from less than a foot to more than 7 feet tall and has white-woolly undersides to its leaves with spines on the leaf lobes. The flowers are rose to pink or purple in groups of two to five and typically narrower than those of bull thistle. The plants originated in the Mediterranean, southern Europe, and North Africa and are recorded from Ft. Bragg as early as 1912. The plants typically bloom from June through September and set seed from the fall through the winter, though other research has established that the species can also flower from the fall into the wet season. Wind, vehicles, and animals, including ants, can disperse the seeds. This plant dominates sites and reduces native plant cover while preventing establishment of other species. Most animals avoid grazing in it. The plants establish best on bare or disturbed soil and cannot establish in areas with high vegetative cover. The plants are favored by drought and disturbance. Italian thistle is a deep-rooted species that can resprout when the top is cut or pulled. The seed remains viable for 10 or more years.

Mechanical Control

Mowing plants low just before the bolting plants flower can be an effective technique to control Italian thistle (Moore 2002). Plants can resprout and set seed again by the fall, so a follow-up visit in the late summer is recommended. Mowing infested area repeatedly, once during the late spring and then again later in the summer aides in control of the species by removing the ability of any resprouts to set seed. Research has shown that approximately 4 percent of the thistles that were cut two to four inches above the soil surface a month before flowering will resprout (Randall 2000). Additionally, keeping surviving plants low through mowing will reduce the distance of seed dispersal if plants are able to reach maturity.

Chemical Control

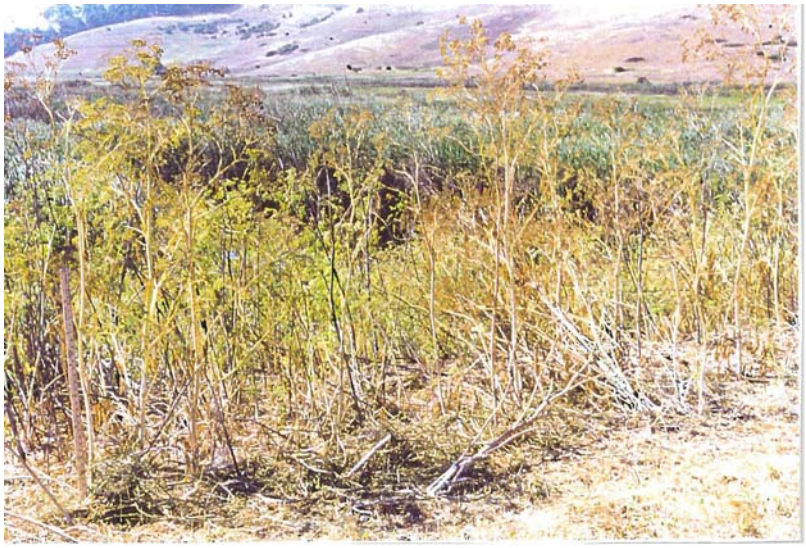
Within the IVMP Area, including county-maintained roads within 150 feet of perennial waters, herbicide use should be only used in limited targeted ways for direct application to pest plants with a backpack sprayer and wand or other manual method. No herbicide should be used adjacent to or within 60 feet of riparian (stream-side), wetland or fisheries habitats as defined in Section 4 of this report. Any proposed herbicide uses in these areas should be approved through a review process of the CSCDPW Integrated Pest Management Department Advisory Group (DAG).

Effective chemical control can result from using a 2 percent solution of glyphosate (Roundup®, or AquaMaster®) sprayed on the foliage until wet but not dripping. A low application volume of a 4 percent solution of the same herbicide can be as effective and cost less. The effectivness of the herbicide application is enhanced by spraying in the fall and adding a non-ionic or silicone-based surfactant to enhance penetration of the herbicide (Bossard et al. 2000).

Cultural Control

Italian thistle prefers grassy or bare soil roadsides with open sun conditions. Where appropriate in forest plant communities, plant trees in sunny areas to enclose the forest canopy and shade out the species. The use of mulches and ground covers such as staked fiber mats can help reduce vegetative growth and resprouting following control efforts. Secondary thinning of trees and shrubs may be necessary to speed tree growth and canopy closure. See **Table 4-2** for appropriate species to plant for the surrounding plant community.

5.1.5.4 Poison Hemlock (Conium maculatum)



Ecology
This member of the carrot family is typically a biennial, with first year plants producing a rosette of leaves. It is native to Europe, Asia, and North Africa, though it has been in North America for some time. Second year plants can grow from 2 to 12 feet and the hollow, ribbed stems have purple streaks or splotches. The white umbrella shaped flower clusters typically are produced between April and July. Seed is dispersed during the dry season from summer through the fall with most seed dispersed between September and December (Drewitz 2000). If ingested, the plants are toxic to both livestock and humans and causes death by respiratory paralysis. The plants do best in disturbed areas where the soils are moist and there is at least partial shade. However the species also forms dense stands in dry, open sites.

Mechanical Control
Spring mowing has proven an effective control method for this species, yet due to regrowth and new seedling establishment, a second mow in the late summer should be conducted to remove any regrowth and prevent seed set (GGNRA 1989).

Chemical Control
Within the IVMP Area, including county-maintained roads within 150 feet of perennial waters, herbicide use should be only used as a last resort or in limited targeted ways for direct application to pest plants with a backpack sprayer and wand or other manual method. No herbicide should be used adjacent to or within 60 feet of riparian (stream-side), wetland or fisheries habitats as defined in Section 4 of this report. Any proposed herbicide uses in these areas must be reviewed and approved by the CSCDPW Integrated Pest Management Department Advisory Group (DAG).

Limited targeted applications of glyphosate can be used effectively to control poison hemlock. Effective chemical control can result from using a 2 percent solution of glyphoshate (Roundup®, or AquaMaster®) sprayed on the foliage until wet but not dripping. A low application volume of a 4 percent solution of the same herbicide can be as effective and cost less. The effectivness of the herbicide application is enhanced by spraying in the fall and adding a non-ionic or silicone-based surfactant to enhance penetration of the herbicide (Bossard et al. 2000).

Cultural Control

Once an infested area has been cleared, suitable native vegetation or other ground cover, such as mulch or fiber mat used to shade out and prohibit regrowth established and stabilize soils. Species planted should be site-specific and emphasize low-growing species that will readily provide ground cover, such as California blackberry or others according to the surrounding or appropriate plant community for the particular location. See **Table 4-2** for suggested species.

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Appendix A

Project Location Field Maps

(Separated into Four Binders by Road Maintenance District)

Appendix B

Roadside Management Features by Road Maintenance District

Map Number	Road	Description	Recommendations/Comments	Stream within 150 feet
Road Maintenance District A				
1	Swanton Rd	Sediment source	Ponding water in roadside ditch, asphalt is deteriorating, potential sediment source. Regrade ditch so it drains, revegetate with rushes and sedges	Mill Cr
2	Swanton Rd	Sediment source-road is failing	Rebuild streambank/road, use bioengineering approach.	Scott Cr
4	Swanton Rd	Visibility/Hazard tree	Branch trimming, Eucalyptus trees are in poor health, loosing limbs due to rot.	Molino Cr
8	Martin Rd	Sediment source-culvert outlet erosion	Install new culvert/downdrain realign with stream, riprap outlet.	Trib of Mill Creek
8	Martin Rd	Sensitive resource	Santa Cruz Cypress	Trib of Mill Creek
10	Smith Grade Rd	Hazard Tree	Tree leaning on phone line over the road, other small trees upslope should be removed.	Reggiardo Cr
10	Smith Grade Rd	Sediment source-road fill-slope failure	Rebuild slope with welded wire wall or other retaining wall.	Reggiardo Cr
13	Smith Grade	Sediment source-muddy turnout	Regrade so drains away from road. Gravel turnout to reduce future erosion.	Trib of Majors Creek
16	Ice Cream Grade	Sediment source-culvert is eroding slope	Install downdrain, rock outlet, and replace crushed inlet.	Laguna Cr
16	Ice Cream Grade	Sediment source-eroded slope from a fallen tree	Restabilize fill slope with rock or retaining wall	Laguna Cr
16	Ice Cream Grade	Sediment source-culvert is eroding fillslope	Install downdrain, rock outlet.	Laguna Cr
52	Old Santa Cruz Hwy	Sediment source-roadside ditch	Install sediment catch basin along the ditch.	Burns Cr
52	Old Santa Cruz Hwy	Sedimentation source-failing unstable slope	Revegetate slopes with appropriate vegetation.	Burns Cr
53	Schulties Rd	Sediment source-unvegetated slope	Revegetate slope near the culvert (North and South of the creek).	Burns Cr
53	Schulties Rd	Sediment source-road failure	Install crib wall, welded wire wall or other retaining wall.	Burns Cr

Map Number	Road	Description	Recommendations/Comments	Stream within 150 feet
53	Schulties Rd	Sediment source-unvegetated	Revegetate bare areas.	Burns Cr
53	Schulties Rd	Sediment source-unvegetated	Revegetate bare areas.	Burns Cr
65	Mountain View Rd	Visibility	Trim branches.	Branciforte Cr
70	Brookwood Dr	Visibility/Sediment source	Trim overhanging willow branches. Gravel and replant turnout and any drainage outlets with rushes and sedges.	Arana Gulch
70	Brookwood Dr	Sediment source-turnout	Regrade (out-slope) and gravel turnout. Rock and replant the drainage outlet with rushes and sedges.	Arana Gulch
81	Redwood Lodge Rd	Sediment source-slope failure	Apply erosion control measures and revegetate slope.	West Branch Soquel Cr
82	Morrill Rd	Sediment source-road failure	Road washout requiring engineered solution.	Laurel Cr
17	Felton Empire Rd	Visibility/Hazard tree	Large redwood on inside turn is too close to road. Truck trailers have clipped the tree numerous times. Tree should be removed.	South Fall Cr
20	Little Basin Rd	Sediment source-unvegeted soil pile	Cover soil pile or seed with native grass mix.	Scott Cr
22	China Grade Rd	Sediment source-slope failure	Apply erosion control and revegetation practices.	Boulder Cr
29	Two Bar Rd	Sediment source-turnout	Regrade (out-slope) and gravel turnout. Rock and replant any drainage outlets with rushes and sedges.	Two Bar Cr
29	Two Bar Rd	Visibility	Remove or mow French broom to maintain road clearance.	Two Bar Cr
30	Two Bar Rd	Sediment source	Revegetate slope/washout.	Two Bar Cr
31	Boulder Brook Dr	Sediment source-road failure	Road ends – washout. Stabilize and revegetate.	Foreman Cr
31	Boulder Brook Dr	Sediment source-road failure	Road ends – washout. Stabilize and revegetate.	Foreman Cr
32	Irwin Wy	Visibility/Sediment source	Trim big-leaf maple on curve and turnout annually. Muddy pullout could be graveled.	Spring Creek Gulch
32	Irwin Wy	Sediment source-turnout	Regrade (out-slope) and gravel turnout. Rock and replant any drainage outlets with rushes and sedges.	Spring Creek Gulch

Map Number	Road	Description	Recommendations/Comments	Stream within 150 feet
32	Irwin Wy	Visibility	Remove and treat wattle tree blocking visibility within the turnout	San Lorenzo River
32	Lorenzo Av	Visibility	Trim vegetation for clearance.	San Lorenzo River
33	Clear Creek Rd	Sediment source-unvegetated roadside	Revegetate areas of recent clearing or cutting.	Clear Cr
33	Clear Creek Rd	Sediment source-unstable slope	Wet unstable seep needs focused revegetation to stabilize the slope	Clear Cr
34	Love Creek Rd	Sediment source-unvegetated roadside	Revegetate roadside turnout and soil piles.	Love Cr
35	Love Creek Rd	Sediment source/Visibility	Culvert needs sediment catch basin. Overhanging vegetation needs annual trimming.	Love Cr
35	Riverside Park Dr	Visibility	Trim overhanging box elder branches every 1-2 years or as needed.	Newell Cr
35	Glen Arbor Rd	Visibility	Trim riparian tree branches annually.	Newell Cr
35	Mill St	Sediment source-urban drain	Install sediment catch basin below street drain before it enters the river.	San Lorenzo River
35	Mill St	Sediment source-urban drain	Install sediment catch basin below street drain before it enters the river.	San Lorenzo River
35	Mill St	Sediment source-urban drain	Install sediment catch basin below street drain before it enters the river.	San Lorenzo River
35	Mill St	Sediment source-urban drain	Install sediment catch basin below street drain before it enters the river.	San Lorenzo River
35	Harmony Hill Rd	Sediment source-unvegetated roadside cutbanks	Apply erosion control and revegetation practices.	Trib of Marshall Creek
35	Hubbard Gulch Rd	Sediment source-roadside drain	Install sediment catchments in roadside drains.	Hubbard Gulch
35	Old County Rd	Sediment source-road failure	Install crib wall, welded wire wall or other retaining wall.	San Lorenzo River
36	Glen Arbor Rd	Visibility	Trim redwood tree branches away from road and powerline every 1-2 years on SE side of bridge.	San Lorenzo River

Map Number	Road	Description	Recommendations/Comments	Stream within 150 feet
37	Brackney Rd	Sediment source-urban drain	Plant herbaceous wetland vegetation below drain outlets or install sediment catch basin.	San Lorenzo River
38	Redwood Dr	Visibility	Trim overhanging redwood branches.	Shingle Mill Cr
38	Redwood Dr	Visibility/Sediment source	Trim bay and Douglas-fir branches on north side of road. Regularly prune/mow Himalayan berry thicket where the creek crosses under the bridge fence. Plant herbaceous wetland vegetation below drain outlets or install sediment catch basin.	Shingle Mill Cr
38	Redwood Dr	Visibility	Trim or remove plum tree in turnout. Remove French broom and Himalayan berry at the turn in the road. Trim box elder annually from growing into phone/powerlines	Shingle Mill Cr
38	Redwood Dr	Visibility	Trim branches.	Shingle Mill Cr
38	Redwood Dr	Visibility	Trim branches.	Shingle Mill Cr
38	Big Trees Park Rd	Visibility	Annually trim overhanging oak and bay branches near the entrance to Henry Cowell State Park.	San Lorenzo River
38	Big Trees Park Rd	Visibility	Trim branches.	San Lorenzo River
39	East Zayante Rd	Sediment source-runoff directly into creek	Install downdrain and rock the outlet.	Zayante Cr
40	West Zayante Rd	Sediment source-road failure	Rebuild slope with rock, install culvert downdrain.	Zayante Cr
40	West Zayante Rd	Sediment source-road shoulder failure.	Install retaining wall to rebuild slope.	Zayante Cr
40	West Zayante Rd	Sediment source-road shoulder failure.	Install retaining wall to rebuild slope.	Zayante Cr
40	East Zayante Rd	Sediment source-eroding slope soon to be road failure	Bank erosion need to be restabilized with large rock and plantings.	Zayante Cr
40	East Zayante Rd	Sediment source-road failure, potential tree hazard	Install crib wall, welded wire wall or other retaining wall.	Zayante Cr

Map Number	Road	Description	Recommendations/Comments	Stream within 150 feet
41	Lockhart Gulch Rd	Sediment source- road failure	Install crib wall, welded wire wall or other retaining wall.	Lockhart Gulch
41	Nelson Rd	Sediment source-road failure	Install crib wall, welded wire wall or other retaining wall.	Ruins Cr
42	Valley View Av	Sediment source-road failure	Install crib wall, welded wire wall or other retaining wall.	Zayante Cr
42	Lompico Rd	Sediment source-unpaved turnout	Regrade (out-slope) and gravel turnout. Rock and replant the drainage outlet with rushes and sedges.	Lompico Cr
43	Lompico Rd	Sediment source-road fill-slope failure	Install crib wall, welded wire wall or other retaining wall.	Lompico Cr
43	Lake Bl	Sediment source- road failure, road is closed	Slope needs major geotechnical stabilization work.	Lompico Cr
45	East Zayante Rd	Visibility/Hazard tree	Remove redwood rootwad that slid down the hill. Apply erosion control products on slide area and revegetate.	Zayante Cr
45	East Zayante Rd	Sediment source-road failure	Install crib wall, welded wire wall or other retaining wall. Rerout roadside drainage ditch away from the site.	Zayante Cr
45	East Zayante Rd	Sediment source-failed culvert	Culvert needs downdrain and rock slope protection at the outlet along with sedge and rush plantings.	Zayante Cr
45	East Zayante Rd	Visibility	Bay tree overhanging the road needs trimming.	Zayante Cr
45	East Zayante Rd	Road safety (rock slide)	Appears that rocks fall onto the road from the hill slope often. May need a sign to warn motorists.	Zayante Cr
45	East Zayante Rd	Inadequate road drainage	Pooled water on the inside road ditch probably from nearby septic leach fields. Investigate source. May need to install ditch relief culvert to avoid water from saturating the road fill destabilizing the road.	Zayante Cr

Map Number	Road	Description	Recommendations/Comments	Stream within 150 feet
45	East Zayante Rd	Inadequate road drainage	Install ditch relief culvert to avoid water from saturating the road fill destabilizing the road.	Zayante Cr
46	East Zayante Rd	Sediment source-failed culvert	Culvert needs downdrain and rock slope protection at the outlet along with sedge and rush plantings.	Zayante Cr
47	Upper East Zayante Rd	Sediment source-roadcut erosion	Apply erosion control products (e.g., erosion control blankets) revegetate slope.	Zayante Creek
47	East Zayante Rd	Sediment source-spoils dumped in ephemeral channel	Remove soil adjacent to the channel and within. Rock and revegetate the channel with rushes and sedges.	Trib of Zayante Creek
47	East Zayante Rd	Visibility-branch trimming	Remove/trim *Ceanothus* overhanging road at the inside turn.	Trib of Zayante Creek
47	Upper East Zayante Rd	Sediment source-road failure	Install crib wall, welded wire wall or other retaining wall.	Zayante Creek
47	Upper East Zayante Rd	Sediment source-turnout	Regrade (out-slope) and gravel turnout. Rock and replant the drainage outlet with rushes and sedges.	Zayante Creek
47	East Zayante Rd	Sediment source-muddy turnout	Regrade turnout to drain to current outlet. Rock turnout and plant sedges and rushes in the drainage.	Zayante Creek
49	Bear Creek Rd	Fire hazard	Mow to reduce fire hazard.	Bear Cr
54	Glenwood Dr	Sediment source-road failure	Install crib wall, welded wire wall or other retaining wall. Revegetate slope.	Bean Cr
54	Glenwood Dr	Sediment source-unvegetated roadside	Hydroseed with native seed, revegetate with shrubs, and groundcovers.	Bean Cr
56	Glenwood Dr	Sediment source-unvegetated roadside	Apply erosion control practices. Mulch and hydroseed with native seed.	Bean Cr
Road Maintenance District C				
76	Prescott Rd	Sediment source-road fill-slope failure	Install crib wall, welded wire wall or other retaining wall.	Bates Cr
76	Main St	Sediment source-road fill-slope failure	Install crib wall, welded wire wall or other retaining wall.	Bates Cr

Map Number	Road	Description	Recommendations/Comments	Stream within 150 feet
85	Long Ridge Rd	Sediment source-unvegetated roadside ditch	Revegetate roadside ditch, install sediment catchment along the ditch before it enters the creek.	Amaya Cr
88	Cox Rd	Sediment source-road fill failure	Install crib wall, welded wire wall or other retaining wall. Revegetate slope.	East Branch Valencia Cr
88	Bear Valley Rd	Sediment source-road fill failure	Install crib wall, welded wire wall or other retaining wall. Revegetate slope.	East Branch Valencia Cr
88	Valencia Rd	Sediment source-road fill failure	Install crib wall, welded wire wall or other retaining wall. Revegetate slope.	Valencia Cr
88	Cox Rd	Sediment source-road fill failure	Install crib wall, welded wire wall or other retaining wall. Install culvert downdrain and rock outlet. May need a guardrail. Another culvert 100ft up the road needs a downdrain and rock outlet.	East Branch Valencia Cr
89	Soquel Dr	Visibility-overhanging vegetation	Prune trees growing over sidewalk on East inside bend of Soquel Dr/Valencia Creek near Aptos St.	Valencia Cr
Road Maintenance District D				
102	Rider Rd	Sediment source-cut-slope slump	Wood retaining wall has been installed- stability must be assessed. Revegetate following stabilization to prevent further erosion.	Rider Cr
102	Rider Rd	Sediment source-road fill failure	Stabilize slope with large rock, retaining wall, crib wall, or welded wire wall.	Rider Cr
107	Ranport Rd	Visibility-overhanging vegetation	Wattle trees overhanging the road should be periodically trimmed or removed.	Harkin Slough
108	Buena Vista Dr	Sediment source-road failure	Stabilize road with a retaining wall or large rock revetment to prevent washout.	Gallighan Slough
115	Hazel Dell Rd	Sediment source-road fill failure	Install crib wall, welded wire wall or other retaining wall. Revegetate slope. Outslope road berms, provide spaced drainage off the road shoulder down the hillside.	Trib of Green Valley Creek

Map Number	Road	Description	Recommendations/Comments	Stream within 150 feet
115	Hazel Dell Rd	Sediment source-road failure	Install crib wall, welded wire wall or other retaining wall. Out-slope soil berm along road edge to road dissipate runoff.	Trib of Green Valley Creek
115	Hazel Dell Rd	Sediment source-road fill failure	Install crib wall, welded wire wall or other retaining wall. Install culvert downdrain and rock outlet. Out-slope soil berm along road edge to road dissipate runoff.	Trib of Green Valley Creek
115	Hazel Dell Rd	Sediment source-road fill failure	Install crib wall, welded wire wall or other retaining wall. Revegetate slope.	Trib of Green Valley Creek
115	Hazel Dell Rd	Sediment source-culvert is eroding slope (no downdrain)	Install downdrain for the culvert and road shoulder runoff collected at same point. Rock outlet and revegetate to dissipate energy.	Trib of Green Valley Creek

Appendix C
Perennial Waters within IVMP Area with Fisheries

Map	Road District	Stream Name	Coho	Steelhead	Resident Trout	Tidewater Goby	Comments
1	A	Mill Cr	Y	Y	N/A	N	
1	A	Scott Cr	Y	Y	N/A	N	
2	A	Scott Cr	Y	Y	N/A	N	
2	A	Big Creek	Y	Y	N/A	N	
3	A	Little Cr	N	Y	N/A	N	
3	A	Scott Cr	Y	Y	N/A	N	
3	A	Big Creek	Y	Y	N/A	N	
4	A	Molino Cr	N	Y	N/A	N	
5	A	San Vicente Cr	Y	Y	N/A	N	
6	A	West Liddell Cr	N	Y	N/A	N	
7	A	Laguna Cr	N	Y	N/A	N	
11	A	Laguna Cr	N	N	Y	N	
12	A	Majors Cr	N	N	Y	N	
16	A	Laguna Cr	N	N	Y	N	
20	A	Scott Cr	N	N	Y	N	
22	B	Boulder Cr	N	Y	N/A	N	
23	B	Boulder Cr	N	Y	N/A	N	
24	B	Boulder Cr	N	Y	N/A	N	
24	B	Hare Cr	N	Y	N/A	N	
25	B	San Lorenzo River	N	Y	N/A	N	
26	B	San Lorenzo River	N	Y	N/A	N	
27	B	San Lorenzo River	N	Y	N/A	N	
28	B	Kings Cr	N	Y	N/A	N	
28	B	Logan Cr	N	Y	N/A	N	
29	B	Kings Cr	N	Y	N/A	N	
29	B	Two Bar Cr	N	Y	N/A	N	
30	B	Kings Cr	N	Y	N/A	N	
30	B	San Lorenzo River	N	Y	N/A	N	
30	B	Two Bar Cr	N	Y	N/A	N	
31	B	Bear Cr	N	Y	N/A	N	
31	B	Boulder Cr	N	Y	N/A	N	
31	B	Foreman Cr	N	N	N	N	
31	B	Pea Vine Cr	N	N	N	N	
31	B	San Lorenzo River	N	Y	N/A	N	
31	B	Two Bar Cr	N	Y	N/A	N	
32	B	Bear Cr	N	Y	N/A	N	
32	B	Boulder Cr	N	Y	N/A	N	
32	B	San Lorenzo River	N	Y	N/A	N	
32	B	Unnamed Stream	N	N	?	N	
33	B	Clear Cr	N	?	?	N	
33	B	San Lorenzo River	N	Y	N/A	N	
34	B	Fritch Cr	N	Y	N/A	N	
34	B	Love Cr	N	Y	N/A	N	
34	B	Newell Cr	N	Y	N/A	N	

Map	Road District	Stream Name	Coho	Steelhead	Resident Trout	Tidewater Goby	Comments
34	B	San Lorenzo River	N	Y	N/A	N	
35	B	Hubbard Gulch	N	Y	N/A	N	
35	B	Love Cr	N	Y	N/A	N	
35	B	Newell Cr	N	Y	N/A	N	
35	B	San Lorenzo River	N	Y	N/A	N	
36	B	San Lorenzo River	N	Y	N/A	N	
37	B	San Lorenzo River	N	Y	N/A	N	
38	B	Gold Gulch	N	Y	N/A	N	
38	B	San Lorenzo River	N	Y	N/A	N	
38	B	Shingle Mill Cr	N	Y	N/A	N	
39	B	Bean Cr	N	Y	N/A	N	
39	B	Bennett Cr	N	Y	N/A	N	
39	B	San Lorenzo River	N	Y	N/A	N	
39	B	Zayante Cr	N	Y	N/A	N	
40	B	Zayante Cr	N	Y	N/A	N	
41	B	Bean Cr	N	Y	N/A	N	
41	B	Lockhart Gulch	N	Y	N/A	N	
41	B	Ruins Cr	N	Y	N/A	N	
42	B	Lockhart Gulch	N	Y	N/A	N	
42	B	Lompico Cr	N	Y	N/A	N	
42	B	Zayante Cr	N	Y	N/A	N	
43	B	Lompico Cr	N	Y	N/A	N	
43	B	Zayante Cr	N	Y	N/A	N	
44	B	Lompico Cr	N	Y	N/A	N	
45	B	Mountain Charlie Gulch	N	Y	N/A	N	
45	B	Zayante Cr	N	Y	N/A	N	
46	B	Zayante Cr	N	Y	N/A	N	
47	B	Zayante Cr	N	?	?	N	
48	B	Bear Cr	N	Y	N/A	N	
49	B	Bear Cr	N	Y	N/A	N	
50	B	Bear Cr	N	Y	N/A	N	
51	B	Bean Cr	N	Y	N/A	N	
56	B	Mountain Charlie Gulch	N	Y	N/A	N	
57	B	Bean Cr	N	Y	N/A	N	
58	B	Bean Cr	N	Y	N/A	N	
59	B	Bean Cr	N	Y	N/A	N	
62	A	Unnamed Stream (trib to Carbonara Cr)	N	?	?	N	
63	B	San Lorenzo River	N	Y	N/A	N	
64	B	San Lorenzo River	N	Y	N/A	N	
65	A	Branciforte Cr	N	Y	N/A	N	
65	A	Crystal Cr	N	Y	N/A	N	
65	A	Granite Cr	N	Y	N/A	N	
66	A	Granite Cr	N	Y	N/A	N	

Map	Road District	Stream Name	Coho	Steelhead	Resident Trout	Tidewater Goby	Comments
67	A	Branciforte Cr	N	Y	N/A	N	
67	A	Crystal Cr	N	Y	N/A	N	
68	A	Branciforte Cr	N	Y	N/A	N	
68	A	Glen Canyon	N	Y	N/A	N	SH below confluence with Redwood Cr
68	A	Granite Cr	N	Y	N/A	N	
68	A	Redwood Cr	N	Y	N/A	N	Complete barrier somewhere in this reach
69	A	Arana Gulch	N	Y	N/A	N	
69	A	Branciforte Cr	N	Y	N/A	N	
69	A	Glen Canyon	N	Y	N/A	N	
70	A	Arana Gulch	N	Y	N/A	N	
71	A	Arana Gulch	N	Y	N/A	N	
72	A	Arana Gulch	N	Y	N/A	N	
75	A	Bates Cr	N	Y	N/A	N	
75	A	Rodeo Creek Gulch	N	N	N	N	
76	A	Soquel Cr	N	Y	N/A	N	
76	A	Bates Cr	N	Y	N/A	N	
76	A	Soquel Cr	N	Y	N/A	N	
77	A	Love Cr	N	N	?	N	
77	A	Moores Gulch	N	Y	N/A	N	
77	C	Soquel Cr	N	Y	N/A	N	
77	A	West Branch Soquel Cr	N	Y	N/A	N	
78	C	Hester Cr	N	Y	N/A	N	
78	C	Moores Gulch	N	Y	N/A	N	
78	C	Soquel Cr	N	Y	N/A	N	
78	A	West Branch Soquel Cr	N	Y	N/A	N	
79	C	Soquel Cr	N	Y	N/A	N	
81	A	Burns Cr	N	N	?	N	
81	A	West Branch Soquel Cr	N	Y	N/A	N	
86	C,D	Soquel Cr	N	N	Y	N	
87	C	East Branch Valencia Cr	N	?	?	N	
88	C	East Branch Valencia Cr	N	?	?	N	
88	C	Valencia Cr	N	Y	N/A	N	
89	C	Aptos Cr	N	Y	N/A	N	
89	C	Valencia Cr	N	Y	N/A	N	
90	C	Aptos Cr	N	Y	N/A	Y	
100	D	Corralitos Cr	N	Y	N/A	N	
100	D	Diablo Gulch	N	N	Y	N	
100	D	Rattlesnake Gulch	N	Y	N/A	N	
100	D	Shingle Mill Gulch	N	Y	N/A	N	
101	D	Corralitos Cr	N	Y	N/A	N	
102	D	Corralitos Cr	N	Y	N/A	N	
102	D	Rider Cr	N	Y	?	N	Natural barrier within this reach

Map	Road District	Stream Name	Coho	Steelhead	Resident Trout	Tidewater Goby	Comments
103	D	Browns Cr	N	Y	N/A	N	
103	D	Gamecock Canyon	N	Y	N/A	N	
103	D	Ramsey Cr	N	Y	N/A	N	
104	D	Browns Cr	N	Y	N/A	N	
104	D	Corralitos Cr	N	Y	N/A	N	
105	D	Corralitos Cr	N	Y	N/A	N	
106	D	Corralitos Cr	N	Y	N/A	N	
113	D	Pajaro River	N	Y	N/A	N	
114	D	Pajaro Lagoon	N	N	N	Y	
114	D	Watsonville Slough	N	N	N	Y	
115	D	Unnamed Stream (along Hazel Dell Rd)	N	N	Y	N	
116	D	Green Valley Cr	N	N	Y	N	
116	D	Unnamed Stream (along Hazel Dell Rd)	N	N	Y	N	
117	D	Green Valley Cr	N	N	Y	N	
118	D	Green Valley Creek (Casserly Creek)	N	Y	N/A	N	
119	D	Corralitos Cr	N	Y	N/A	N	
120	D	Corralitos Cr	N	Y	N/A	N	
120	D	Salsipuedes Cr	N	Y	N/A	N	
121	D	Salsipuedes Cr	N	Y	N/A	N	
122	D	Salsipuedes Cr	N	Y	N/A	N	

N = Not present
Y = Present or potentially present
N/A = In the case of streams with steelhead, resident trout are not considered (same species).
? = Extent of distribution in area is unknown, further studies are needed and it is best to assume presence.

Appendix D

IVMP Areas Where Roadside Management and Fisheries, Riparian, and Wetland Overlap

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Bonny Doon Rd	A	9	No	Mill Creek	redwood forest
Bonny Doon Rd	A	9	No	Mill Creek	redwood forest
Bonny Doon Rd	A	9	No	Trib of Mill Creek	redwood forest
Bonny Doon Rd	A	6	Yes	West Liddell Cr	red alder riparian forest
Bonny Doon Rd	A	6	Yes	West Liddell Cr	coyote brush scrub
Branciforte Dr	A	69	Yes	Branciforte Cr	residential - horticultural or developed
Branciforte Dr	A	68	Yes	Trib of Branciforte Creek	Douglas-fir forest
Branciforte Dr	A	68	Yes	Trib of Branciforte Creek	residential - horticultural or developed
Branciforte Dr	A	68	Yes	Trib of Branciforte Creek	shreve oak forest
Branciforte Dr	A	67	Yes	Crystal Cr	residential - horticultural or developed
Branciforte Dr	A	67	Yes	Branciforte Cr	shreve oak forest
Branciforte Dr	A	67	Yes	Branciforte Cr	shreve oak forest
Branciforte Dr	A	67	Yes	Branciforte Cr	white alder forest
Branciforte Dr	A	67	Yes	Branciforte Cr	residential - redwood forest
Branciforte Dr	A	67	Yes	Branciforte Cr	residential - redwood forest
Branciforte Dr	A	65	Yes	Branciforte Cr	residential - redwood forest
Branciforte Dr	A	65	Yes	Branciforte Cr	residential - redwood forest
Branciforte Dr	A	69	Yes	Branciforte Cr	redwood forest
Branciforte Dr	A	68	Yes	Branciforte Cr	redwood forest
Branciforte Dr	A	68	Yes	Branciforte Cr	redwood forest
Branciforte Dr	A	68	Yes	Branciforte Cr	residential - horticultural or developed
Branciforte Dr	A	68	Yes	Branciforte Cr	blue gum forest
Branciforte Dr	A	68	Yes	Branciforte Cr	residential - horticultural or developed
Branciforte Dr	A	68	Yes	Branciforte Cr	residential - horticultural or developed
Branciforte Dr	A	68	Yes	Branciforte Cr	residential - horticultural or developed
Branciforte Dr	A	68	Yes	Branciforte Cr	redwood forest
Branciforte Dr	A	68	Yes	Branciforte Cr	redwood forest
Branciforte Dr	A	67	Yes	Branciforte Cr	redwood forest

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Branciforte Dr	A	69	Yes	Branciforte Cr	redwood forest
Brommer St	A	72	No	Leona Cr	coast live oak woodland
Brommer St	A	72	No	Leona Cr	coast live oak woodland
Brommer St	A	74	No	Rodeo Creek Gulch	red willow riparian forest
Brommer St	A	74	No	Rodeo Creek Gulch	arroyo willow riparian forest
Brookwood Dr	A	70	Yes	Arana Gulch	arroyo willow riparian forest
Brookwood Dr	A	70	Yes	Arana Gulch	coast live oak woodland
Brookwood Dr	A	70	Yes	Arana Gulch	coast live oak woodland
Brookwood Dr	A	70	Yes	Arana Gulch	arroyo willow riparian forest
Capitola Rd	A	74	No	Rodeo Creek Gulch	blue gum forest
Capitola Rd	A	74	No	Rodeo Creek Gulch	blue gum forest
Capitola Rd	A	71	Yes	Arana Gulch	California annual grassland
Capitola Rd	A	71	Yes	Arana Gulch	red willow riparian forest
Capitola Rd	A	71	Yes	Arana Gulch	coast live oak woodland
East Cliff Dr	A	73	No	Corcoran Lagoon?	bare - sand dune
East Cliff Dr	A	73	No	Corcoran Lagoon?	California annual grassland
East Cliff Dr	A	73	No	Corcoran Lagoon?	California annual grassland
East Cliff Dr	A	73	No	Corcoran Lagoon?	stream or open water
El Rancho Dr	A	61	No	Trib of Carbonera Creek	residential - horticultural or developed
El Rancho Dr	A	61	No	Trib of Carbonera Creek	residential - horticultural or developed
Empire Grade	A	14	No	Trib of Majors Creek	knobcone pine woodland
Empire Grade	A	14	No	Trib of Majors Creek	knobcone pine woodland
Glen Canyon Rd	A	69	Yes	Glen Canyon	shreve oak forest
Glen Canyon Rd	A	62	Yes	Glen Canyon	California annual grassland
Glen Canyon Rd	A	62	Yes	Glen Canyon	residential - horticultural or developed
Glen Canyon Rd	A	69	Yes	Branciforte Cr	redwood forest
Glen Canyon Rd	A	69	Yes	Branciforte Cr	redwood forest
Glen Canyon Rd	A	69	Yes	Branciforte Cr	redwood forest

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Granite Creek Rd	A	66	Yes	Granite Cr	redwood forest
Granite Creek Rd	A	66	Yes	Granite Cr	redwood forest
Granite Creek Rd	A	65	Yes	Granite Cr	redwood forest
Happy Valley Rd	A	67	Yes	Crystal Cr	residential - horticultural or developed
Happy Valley Rd	A	67	Yes	Crystal Cr	residential - horticultural or developed
Happy Valley Rd	A	67	Yes	Crystal Cr	shreve oak forest
Happy Valley Rd	A	67	Yes	Crystal Cr	redwood forest
Happy Valley Rd	A	67	Yes	Crystal Cr	redwood forest
Happy Valley Rd	A	67	Yes	Crystal Cr	shreve oak forest
Happy Valley Rd	A	67	Yes	Crystal Cr	redwood forest
Happy Valley Rd	A	67	Yes	Crystal Cr	redwood forest
Happy Valley Rd	A	67	Yes	Crystal Cr	redwood forest
Happy Valley Rd	A	67	Yes	Crystal Cr	residential - horticultural or developed
Happy Valley Rd	A	67	Yes	Crystal Cr	residential - horticultural or developed
Happy Valley Rd	A	67	Yes	Crystal Cr	redwood forest
Ice Cream Grade	A	16	Yes	Laguna Cr	redwood forest
Ice Cream Grade	A	16	Yes	Laguna Cr	redwood forest
Laguna Rd	A	7	Yes	Trib of Laguna Creek	red alder riparian forest
Laguna Rd	A	7	Yes	Trib of Laguna Creek	residential - horticultural or developed
Laguna Rd	A	7	Yes	Trib of Laguna Creek	residential - horticultural or developed
Laguna Rd	A	7	Yes	Trib of Laguna Creek	residential - horticultural or developed
Laguna Rd	A	7	Yes	Trib of Laguna Creek	residential - horticultural or developed
Laguna Rd	A	7	Yes	Trib of Laguna Creek	red alder riparian forest
Laurel Glen Rd	A	77	Yes	Moores Gulch	redwood forest
Laurel Glen Rd	A	77	Yes	Moores Gulch	redwood forest
Laurel Glen Rd	A	78	Yes	Moores Gulch	redwood forest
Laurel Glen Rd	A	78	Yes	Moores Gulch	redwood forest
Martin Rd	A	8	No	Trib of Mill Creek	Douglas-fir forest

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Martin Rd	A	8	No	Trib of Mill Creek	knobcone pine woodland
Martin Rd	A	8	No	Trib of Mill Creek	knobcone pine woodland
Morrill Rd	A	82	No	Laurel Cr	redwood forest
Morrill Rd	A	82	No	Laurel Cr	redwood forest
North Rodeo Gulch Rd	A	75	Yes	Rodeo Creek Gulch	redwood forest
Old Santa Cruz Hwy	A	52	No	Burns Cr	redwood forest
Old Santa Cruz Hwy	A	52	No	Burns Cr	redwood forest
Paul Sweet Rd	A	69	Yes	Arana Gulch	coast live oak woodland
Paul Sweet Rd	A	69	Yes	Arana Gulch	redwood forest
Paul Sweet Rd	A	69	Yes	Arana Gulch	redwood forest
Pine Flat Rd	A	15	No	Laguna Cr	redwood forest
Pine Flat Rd	A	15	No	Laguna Cr	redwood forest
Pine Flat Rd	A	9	No	Trib of Mill Creek	redwood forest
Pine Flat Rd	A	9	No	Trib of Mill Creek	redwood forest
Pine Flat Rd	A	9	No	Trib of Mill Creek	redwood forest
Pine Flat Rd	A	9	No	Trib of Mill Creek	redwood forest
Portola Dr	A	73	No	Rodeo Creek Gulch	ruderal weeds
Portola Dr	A	73	No	Rodeo Creek Gulch	arroyo willow riparian forest
Redwood Dr	A	66	No	Redwood Cr	residential - redwood forest
Redwood Dr	A	66	No	Redwood Cr	residential - redwood forest
Redwood Dr	A	66	No	Redwood Cr	residential - redwood forest
Redwood Dr	A	66	No	Redwood Cr	residential - redwood forest
Redwood Dr	A	66	No	Redwood Cr	residential - redwood forest
Redwood Dr	A	66	No	Redwood Cr	residential - redwood forest
Redwood Dr	A	68	Yes	Redwood Cr	redwood forest
Redwood Dr	A	68	Yes	Redwood Cr	redwood forest
Redwood Dr	A	68	Yes	Redwood Cr	residential - horticultural or developed
Redwood Dr	A	68	Yes	Redwood Cr	residential - horticultural or developed

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Redwood Lodge Rd	A	81	Yes	West Branch Soquel Cr	redwood forest
Redwood Lodge Rd	A	81	Yes	West Branch Soquel Cr	redwood forest
Redwood Lodge Rd	A	81	Yes	West Branch Soquel Cr	white alder forest
Redwood Lodge Rd	A	81	Yes	West Branch Soquel Cr	white alder forest
San Vicente St	A	5	Yes	San Vicente Cr	red alder riparian forest
San Vicente St	A	5	Yes	San Vicente Cr	red alder riparian forest
San Vicente St	A	5	Yes	San Vicente Cr	residential - horticultural or developed
Schulties Rd	A	53	No	Burns Cr	redwood forest
Schulties Rd	A	53	No	Burns Cr	redwood forest
Smith Grade	A	13	No	Trib of Majors Creek	redwood forest
Smith Grade	A	13	No	Trib of Majors Creek	redwood forest
Smith Grade	A	12	Yes	Trib of Majors Creek	redwood forest
Smith Grade	A	12	Yes	Majors Cr	redwood forest
Smith Grade Rd	A	10	No	Reggiardo Cr	redwood forest
Smith Grade Rd	A	10	No	Reggiardo Cr	redwood forest
Smith Grade Rd	A	11	Yes	Laguna Cr	redwood forest
Smith Grade Rd	A	11	Yes	Laguna Cr	redwood forest
Soquel Av	A	75	Yes	Rodeo Creek Gulch	arroyo willow riparian forest
Soquel Av	A	75	Yes	Rodeo Creek Gulch	residential - horticultural or developed
Soquel Av	A	71	Yes	Arana Gulch	residential - horticultural or developed
Soquel Av	A	71	Yes	Arana Gulch	coast live oak woodland
Soquel Dr	A	75	Yes	Rodeo Creek Gulch	redwood forest
Soquel Dr	A	75	Yes	Rodeo Creek Gulch	redwood forest
Soquel San Jose Rd	A	83	No	Laurel Cr	redwood forest
Soquel San Jose Rd	A	83	No	Laurel Cr	Douglas-fir forest
Soquel San Jose Rd	A	83	No	Laurel Cr	Douglas-fir forest
Soquel San Jose Rd	A	77	Yes	Love Cr	shreve oak forest
Soquel San Jose Rd	A	77	Yes	Love Cr	shreve oak forest

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Soquel San Jose Rd	A	78	Yes	Hester Cr	redwood forest
Soquel San Jose Rd	A	78	Yes	Hester Cr	redwood forest
Soquel San Jose Rd	A	78	Yes	Hester Cr	shreve oak forest
Soquel San Jose Rd	A	78	Yes	Hester Cr	shreve oak forest
Soquel San Jose Rd	A	77	Yes	West Branch Soquel Cr	white alder forest
Soquel San Jose Rd	A	77	Yes	West Branch Soquel Cr	redwood forest
Soquel San Jose Rd	A	77	Yes	Soquel Cr	redwood - Douglas fir forest
Soquel San Jose Rd	A	77	Yes	West Branch Soquel Cr	white alder forest
Soquel San Jose Rd	A	77	Yes	West Branch Soquel Cr	redwood forest
Swanton Rd	A	3	Yes	Big Creek	red alder riparian forest
Swanton Rd	A	3	Yes	Big Creek	red alder riparian forest
Swanton Rd	A	1	Yes	Scott Cr	white alder forest
Swanton Rd	A	1	Yes	Scott Cr	white alder forest
Swanton Rd	A	2	Yes	Scott Cr	red alder riparian forest
Swanton Rd	A	4	Yes	Molino Cr	red alder riparian forest
Swanton Rd	A	4	Yes	Molino Cr	disturbed
Swanton Rd	A	4	Yes	Molino Cr	disturbed
Swanton Rd	A	4	Yes	Molino Cr	red alder riparian forest
Swanton Rd	A	3	Yes	Little Cr	redwood forest
Swanton Rd	A	3	Yes	Little Cr	Douglas-fir forest
Swanton Rd	A	3	Yes	Little Cr	red alder riparian forest
Swanton Rd	A	3	Yes	Little Cr	red alder riparian forest
Swanton Rd	A	1	Yes	Mill Cr	red alder riparian forest
Swanton Rd	A	1	Yes	Mill Cr	red alder riparian forest
Swanton Rd	A	1	Yes	Mill Cr	Monterey pine forest
Acorn Dr	B	31	Yes	Boulder Cr	redwood forest
Bean Creek Rd	B	58	Yes	Bean Cr	redwood forest
Bean Creek Rd	B	58	Yes	Bean Cr	redwood forest

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Bean Creek Rd	B	57	Yes	Bean Cr	redwood forest
Bean Creek Rd	B	58	Yes	Bean Cr	redwood forest
Bean Creek Rd	B	58	Yes	Bean Cr	redwood forest
Bean Creek Rd	B	57	Yes	Bean Cr	redwood forest
Bear Creek Rd	B	50	Yes	Bear Cr	redwood forest
Bear Creek Rd	B	50	Yes	Bear Cr	redwood forest
Bear Creek Rd	B	31	Yes	Trib of Bear Creek	redwood forest
Bear Creek Rd	B	31	Yes	Trib of Bear Creek	redwood forest
Bear Creek Rd	B	31	Yes	San Lorenzo River	redwood forest
Bear Creek Rd	B	31	Yes	San Lorenzo River	redwood forest
Big Trees Park Rd	B	38	Yes	San Lorenzo River	California bay forest
Big Trees Park Rd	B	38	Yes	San Lorenzo River	black cottonwood - California bay - box elder riaprian woodland
Big Trees Park Rd	B	38	Yes	San Lorenzo River	black cottonwood - box elder riparian woodland
Big Trees Park Rd	B	38	Yes	San Lorenzo River	coast live oak woodland
Boulder Brook Dr	B	31	Yes	Foreman Cr	redwood - California bay - tan oak forest
Boulder Brook Dr	B	31	Yes	Foreman Cr	redwood - California bay - tan oak forest
Boulder Brook Dr	B	31	Yes	Foreman Cr	redwood forest
Boulder Brook Dr	B	31	Yes	Foreman Cr	redwood forest
Brackney Rd	B	37	Yes	San Lorenzo River	redwood forest
Brimblecom Rd	B	31	Yes	San Lorenzo River	redwood forest
Brimblecom Rd	B	31	Yes	San Lorenzo River	redwood forest
Brimblecom Rd	B	31	Yes	San Lorenzo River	shreve oak forest
Brimblecom Rd	B	31	Yes	San Lorenzo River	shreve oak forest
Brook Ln	B	31	Yes	Pea Vine Cr	residential - redwood forest
Brook Ln	B	31	Yes	Boulder Cr	residential - redwood forest
Brook Ln	B	31	Yes	Boulder Cr	residential - redwood forest
Brookside Av	B	35	Yes	Love Cr	residential - redwood forest

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Brookside Av	B	35	Yes	Love Cr	residential - redwood forest
Brookside Wy	B	38	Yes	Gold Gulch	redwood forest
Brookside Wy	B	38	Yes	Gold Gulch	redwood forest
Brookside Wy	B	38	Yes	Gold Gulch	redwood forest
Carrol Av	B	43	Yes	Lompico Cr	redwood forest
Carrol Av	B	43	Yes	Lompico Cr	redwood forest
China Grade Rd	B	22	Yes	Boulder Cr	redwood forest
China Grade Rd	B	22	Yes	Boulder Cr	redwood forest
China Grade Rd	B	22	Yes	Trib of Boulder Creek	redwood forest
China Grade Rd	B	22	Yes	Trib of Boulder Creek	redwood forest
Clear Creek Rd	B	33	Yes	Clear Cr	redwood forest
Clear Creek Rd	B	33	Yes	Clear Cr	redwood forest
Clear Creek Rd	B	33	Yes	Trib of Clear Creek	redwood forest
Clear Creek Rd	B	33	Yes	Trib of Clear Creek	redwood forest
Conference Dr	B	39	Yes	Bean Cr	black cottonwood riparian woodland
Conference Dr	B	39	Yes	Bean Cr	black cottonwood riparian woodland
Covered Bridge Rd	B	39	No	Bull Cr	residential - horticultural or developed
Covered Bridge Rd	B	39	No	Bull Cr	black cottonwood riparian woodland
Covered Bridge Rd	B	39	Yes	San Lorenzo River	box elder riparian forest
Covered Bridge Rd	B	39	Yes	San Lorenzo River	residential - horticultural or developed
Covered Bridge Rd	B	39	Yes	San Lorenzo River	black cottonwood riparian woodland
Covered Bridge Rd	B	39	Yes	San Lorenzo River	black cottonwood - Western sycamore riparian woodland
Double Bogey Dr	B	24	Yes	Hare Cr	residential - redwood forest
Double Bogey Dr	B	24	Yes	Hare Cr	residential - redwood forest
East Zayante Rd	B	47	Yes	Zayante Creek	redwood forest
East Zayante Rd	B	47	Yes	Zayante Creek	redwood forest
East Zayante Rd	B	47	Yes	Trib of Zayante Creek	Douglas-fir forest

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
East Zayante Rd	B	40	Yes	Zayante Cr	maritime Ponderosa pine woodland
East Zayante Rd	B	45	Yes	Zayante Cr	redwood forest
East Zayante Rd	B	45	Yes	Zayante Cr	redwood forest
East Zayante Rd	B	45	Yes	Zayante Cr	redwood forest
East Zayante Rd	B	45	Yes	Zayante Cr	white alder forest
East Zayante Rd	B	45	Yes	Zayante Cr	redwood forest
East Zayante Rd	B	45	Yes	Zayante Cr	white alder forest
East Zayante Rd	B	39	Yes	Zayante Cr	black cottonwood riparian woodland
East Zayante Rd	B	40	Yes	Zayante Cr	black cottonwood riparian woodland
East Zayante Rd	B	40	Yes	Zayante Cr	black cottonwood riparian woodland
East Zayante Rd	B	42	Yes	Zayante Cr	black cottonwood riparian woodland
East Zayante Rd	B	42	Yes	Zayante Cr	redwood forest
East Zayante Rd	B	42	Yes	Zayante Cr	maritime Ponderosa pine woodland
East Zayante Rd	B	42	Yes	Zayante Cr	valley oak riparian woodland
East Zayante Rd	B	42	Yes	Zayante Cr	black cottonwood riparian woodland
East Zayante Rd	B	42	Yes	Zayante Cr	black cottonwood riparian woodland
East Zayante Rd	B	42	Yes	Zayante Cr	redwood forest
East Zayante Rd	B	42	Yes	Zayante Cr	redwood forest
East Zayante Rd	B	42	Yes	Zayante Cr	redwood forest
East Zayante Rd	B	42	Yes	Zayante Cr	redwood forest
East Zayante Rd	B	42	Yes	Zayante Cr	redwood forest
East Zayante Rd	B	45	Yes	Zayante Cr	redwood forest
East Zayante Rd	B	45	Yes	Zayante Cr	redwood forest
East Zayante Rd	B	46	Yes	Trib of Zayante Creek	redwood forest
East Zayante Rd	B	46	Yes	Trib of Zayante Creek	redwood forest
Fall Creek Dr	B	39	Yes	Bennett Cr	redwood forest
Fall Creek Dr	B	39	Yes	Bennett Cr	redwood forest
Felton Empire Rd	B	18	No	Trib of South Fall Creek	redwood forest

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Felton Empire Rd	B	18	No	Trib of South Fall Creek	redwood forest
Felton Empire Rd	B	17	No	South Fall Cr	redwood forest
Felton Empire Rd	B	17	No	South Fall Cr	redwood forest
Felton Empire Rd	B	18	No	South Fall Cr	redwood forest
Felton Empire Rd	B	18	No	South Fall Cr	redwood forest
Felton Empire Rd	B	19	No	Bennett Cr	redwood forest
Felton Empire Rd	B	19	No	Bennett Cr	redwood forest
Fern Dr	B	26	Yes	San Lorenzo River	redwood forest
Fern Dr	B	26	Yes	San Lorenzo River	redwood forest
Fern Dr	B	26	Yes	San Lorenzo River	redwood forest
Fernwood Dr	B	48	Yes	Trib of Bear Creek	residential - horticultural or developed
Forest Hill Dr	B	48	Yes	Bear Cr	redwood forest
Forest Hill Dr	B	48	Yes	Bear Cr	redwood forest
Forest Hill Dr	B	48	Yes	Bear Cr	residential - horticultural or developed
Forest Hill Dr	B	48	Yes	Bear Cr	residential - horticultural or developed
Forest Hill Dr	B	48	Yes	Bear Cr	redwood forest
Forest Hill Dr	B	48	Yes	Bear Cr	residential - horticultural or developed
Forest Hill Dr	B	48	Yes	Bear Cr	redwood forest
Forest Hill Dr	B	48	Yes	Bear Cr	residential - horticultural or developed
Glen Arbor Rd	B	35	Yes	Newell Cr	maritime Ponderosa pine woodland
Glen Arbor Rd	B	35	Yes	Newell Cr	maritime Ponderosa pine woodland
Glen Arbor Rd	B	35	Yes	Newell Cr	black cottonwood - Western sycamore riparian woodland
Glen Arbor Rd	B	35	Yes	Newell Cr	black cottonwood - Western sycamore riparian woodland
Glen Arbor Rd	B	36	Yes	San Lorenzo River	bridge
Glen Arbor Rd	B	36	Yes	San Lorenzo River	bridge
Glenwood Cutoff	B	56	No	Bean Cr	redwood forest

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Glenwood Cutoff	B	56	No	Trib of Bean Creek	redwood forest
Glenwood Dr	B	56	No	Bean Cr	redwood forest
Glenwood Dr	B	56	No	Bean Cr	redwood forest
Glenwood Dr	B	55	No	Bean Cr	redwood forest
Glenwood Dr	B	55	No	Bean Cr	redwood forest
Glenwood Dr	B	56	No	Bean Cr	redwood forest
Glenwood Dr	B	56	No	Bean Cr	redwood forest
Glenwood Dr	B	56	No	Bean Cr	redwood forest
Glenwood Dr	B	56	No	Bean Cr	redwood forest
Glenwood Dr	B	54	No	Bean Cr	redwood forest
Glenwood Dr	B	54	No	Bean Cr	redwood forest
Glenwood Dr	B	54	No	Bean Cr	California bay forest
Glenwood Dr	B	56	No	Bean Cr	residential - horticultural or developed
Glenwood Dr	B	56	No	Bean Cr	redwood forest
Glenwood Dr	B	56	No	Bean Cr	California bay forest
Glenwood Dr	B	56	No	Trib of Bean Creek	redwood forest
Graham Hill Rd	B	60	No	Eagle Cr	maritime Ponderosa pine woodland
Graham Hill Rd	B	60	No	Eagle Cr	black cottonwood riparian woodland
Graham Hill Rd	B	60	No	Eagle Cr	maritime Ponderosa pine woodland
Graham Hill Rd	B	39	Yes	Bean Cr	black cottonwood riparian woodland
Graham Hill Rd	B	39	Yes	Bean Cr	residential - horticultural or developed
Graham Hill Rd	B	39	Yes	San Lorenzo River	black cottonwood-Western sycamore riparian woodland
Gushee St	B	39	No	Bull Cr	residential - horticultural or developed
Gushee St	B	39	No	Bull Cr	black cottonwood riparian woodland
Gushee St	B	39	No	Bull Cr	residential - horticultural or developed
Hare Wy	B	24	Yes	Hare Cr	residential - redwood forest
Harmony Hill Rd	B	35	No	Trib of Marshall Creek	redwood forest

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Harmony Hill Rd	B	35	Yes	Hubbard Gulch	redwood forest
Hazel Av	B	31	Yes	Boulder Cr	residential - horticultural or developed
Hazel Av	B	31	Yes	Boulder Cr	residential - horticultural or developed
Hihn St	B	39	No	Bull Cr	residential - horticultural or developed
Hihn St	B	39	No	Bull Cr	black cottonwood riparian woodland
Hilton Dr	B	24	Yes	Hare Cr	residential - redwood forest
Hilton Dr	B	24	Yes	Boulder Cr	residential - redwood forest
Hubbard Gulch Rd	B	35	No	Trib of Marshall Creek	redwood forest
Hubbard Gulch Rd	B	35	Yes	Hubbard Gulch	redwood forest
Hubbard Gulch Rd	B	35	Yes	Hubbard Gulch	redwood forest
Hubbard Gulch Rd	B	35	Yes	Hubbard Gulch	white alder forest
Hubbard Gulch Rd	B	35	Yes	Hubbard Gulch	white alder forest
Hubbard Gulch Rd	B	35	Yes	Hubbard Gulch	redwood forest
Hubbard Gulch Rd	B	35	Yes	Hubbard Gulch	redwood forest
Huckleberry Ln	B	31	Yes	San Lorenzo River	redwood forest
Irwin Wy	B	32	No	Spring Creek Gulch	redwood forest
Irwin Wy	B	32	No	Spring Creek Gulch	redwood forest
Irwin Wy	B	32	No	Spring Creek Gulch	redwood forest
Irwin Wy	B	32	Yes	San Lorenzo River	redwood forest
Irwin Wy	B	32	Yes	San Lorenzo River	redwood forest
Irwin Wy	B	32	Yes	San Lorenzo River	redwood forest
Irwin Wy	B	32	Yes	San Lorenzo River	redwood forest
Jamison Creek Rd	B	24	No	Trib of Jamison Creek	redwood forest
Jamison Creek Rd	B	24	No	Trib of Jamison Creek	redwood forest
Jamison Creek Rd	B	24	No	Trib of Jamison Creek	redwood forest
Jamison Creek Rd	B	24	No	Jamison Cr	redwood forest
Jamison Creek Rd	B	24	No	Jamison Cr	redwood forest
Junction Av	B	31	Yes	Boulder Cr	residential - redwood forest

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Kings Creek Rd	B	28	Yes	Logan Cr	redwood forest
Kings Creek Rd	B	28	Yes	Logan Cr	redwood forest
Kings Creek Rd	B	30	Yes	Kings Cr	redwood forest
Kings Creek Rd	B	29	Yes	Kings Cr	redwood forest
Kings Creek Rd	B	29	Yes	Kings Cr	redwood forest
Kings Creek Rd	B	28	Yes	Kings Cr	redwood forest
Kings Creek Rd	B	28	Yes	Kings Cr	redwood forest
Kings Creek Rd	B	30	Yes	Kings Cr	redwood forest
Kings Creek Rd	B	30	Yes	Kings Cr	redwood forest
Kings Creek Rd	B	30	Yes	Kings Cr	residential - horticultural or developed
Kings Creek Rd	B	30	Yes	Kings Cr	redwood forest
Kings Creek Rd	B	30	Yes	Kings Cr	white alder forest
Kings Creek Rd	B	30	Yes	Kings Cr	white alder forest
Kings Creek Rd	B	30	Yes	Kings Cr	redwood forest
Kings Creek Rd	B	30	Yes	Kings Cr	residential - horticultural or developed
Kings Hy	B	24	Yes	Trib of Boulder Creek	redwood forest
Kings Hy	B	24	Yes	Trib of Boulder Creek	redwood forest
Kirby St	B	39	No	Bull Cr	residential - horticultural or developed
La Madrona Dr	B	61	No	Trib of Carbonera Creek	residential - blue gum forest
La Madrona Dr	B	61	No	Trib of Carbonera Creek	residential - blue gum forest
Lakeview Dr	B	38	Yes	Trib of San Lorenzo River	redwood forest
Lakeview Dr	B	38	Yes	Trib of San Lorenzo River	redwood forest
Laurel St	B	31	Yes	Boulder Cr	residential - horticultural or developed
Little Basin Rd	B	21	No	Blooms Cr	redwood forest
Little Basin Rd	B	21	No	Blooms Cr	redwood forest
Little Basin Rd	B	20	Yes	Scott Cr	redwood forest
Little Basin Rd	B	20	Yes	Scott Cr	redwood forest
Lockhart Gulch Rd	B	41	Yes	Bean Cr	maritime Ponderosa pine woodland

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Lockhart Gulch Rd	B	41	Yes	Bean Cr	maritime Ponderosa pine woodland
Lockhart Gulch Rd	B	41	Yes	Trib of Bear Creek	redwood forest
Lockhart Gulch Rd	B	41	Yes	Trib of Bear Creek	redwood forest
Lockhart Gulch Rd	B	41	Yes	Lockhart Gulch	maritime Ponderosa pine woodland
Lockhart Gulch Rd	B	42	Yes	Lockhart Gulch	redwood forest
Lockhart Gulch Rd	B	41	Yes	Lockhart Gulch	redwood forest
Lockhart Gulch Rd	B	42	Yes	Lockhart Gulch	redwood forest
Lompico Rd	B	43	Yes	Lompico Cr	redwood forest
Lompico Rd	B	44	Yes	Lompico Cr	redwood forest
Lompico Rd	B	44	Yes	Lompico Cr	redwood forest
Lompico Rd	B	43	Yes	Lompico Cr	redwood forest
Lompico Rd	B	43	Yes	Lompico Cr	redwood forest
Lompico Rd	B	43	Yes	Lompico Cr	redwood forest
Lompico Rd	B	43	Yes	Lompico Cr	redwood forest
Lorenzo Av	B	32	Yes	San Lorenzo River	redwood forest
Lorenzo St	B	31	Yes	Boulder Cr	residential - horticultural or developed
Love Creek Rd	B	35	Yes	Love Cr	residential - horticultural or developed
Love Creek Rd	B	35	Yes	Love Cr	valley oak riparian woodland
Love Creek Rd	B	34	Yes	Love Cr	redwood forest
Love Creek Rd	B	34	Yes	Love Cr	redwood forest
Love Creek Rd	B	34	Yes	Love Cr	redwood forest
Love Creek Rd	B	34	Yes	Love Cr	redwood forest
Love Creek Rd	B	35	Yes	Love Cr	redwood - California bay forest
Love Creek Rd	B	35	Yes	Love Cr	white alder forest - California bay forest
Love Creek Rd	B	35	Yes	Love Cr	white alder forest - California bay forest
Love Creek Rd	B	35	Yes	Love Cr	redwood - California bay forest
Madrona Rd	B	30	Yes	San Lorenzo River	residential - redwood forest
Madrona Rd	B	30	Yes	San Lorenzo River	residential - redwood forest

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Mc Gaffigan Mill Rd	B	25	Yes	San Lorenzo River	redwood forest
Mc Gaffigan Mill Rd	B	25	Yes	San Lorenzo River	redwood forest
Mc Pherson Ct	B	24	Yes	Boulder Cr	redwood forest
Middleton Av	B	31	Yes	Boulder Cr	residential - redwood forest
Middleton Av	B	31	Yes	Boulder Cr	residential - redwood forest
Mt Hermon Rd	B	51	Yes	Bean Cr	maritime Ponderosa pine woodland
Mt Hermon Rd	B	51	Yes	Bean Cr	maritime Ponderosa pine woodland
Mt Hermon Rd	B	39	Yes	Zayante Cr	redwood forest
Mt Hermon Rd	B	39	Yes	Zayante Cr	redwood forest
Nelson Rd	B	41	Yes	Lockhart Gulch	redwood forest
Nelson Rd	B	41	Yes	Ruins Cr	maritime Ponderosa pine woodland
Nelson Rd	B	41	Yes	Ruins Cr	Douglas-fir forest
Nelson Rd	B	41	Yes	Ruins Cr	redwood forest
Nelson Rd	B	41	Yes	Ruins Cr	redwood forest
Ocean Street Ex	B	63	Yes	San Lorenzo River	redwood forest
Ocean Street Ex	B	63	Yes	San Lorenzo River	redwood forest
Old County Hwy	B	30	Yes	Kings Cr	redwood forest
Old County Rd	B	35	No	Trib of Marshall Creek	Douglas-fir forest
Old County Rd	B	35	No	Trib of Marshall Creek	Douglas-fir forest
Plateau Dr	B	39	No	Bull Cr	no access
Plateau Dr	B	39	No	Bull Cr	no access
Pleasant Wy	B	30	Yes	San Lorenzo River	residential - redwood forest
Pleasant Wy	B	30	Yes	San Lorenzo River	residential - redwood forest
Quail Hollow Rd	B	40	Yes	Zayante Cr	California annual grassland
Quail Hollow Rd	B	40	Yes	Zayante Cr	valley oak riparian woodland
Quail Hollow Rd	B	40	Yes	Zayante Cr	black cottonwood riparian woodland
Quail Hollow Rd	B	40	Yes	Zayante Cr	disturbed
Rancho Rio Av	B	35	Yes	Newell Cr	residential - coast live oak woodland

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Rancho Rio Av	B	35	Yes	Newell Cr	residential - coast live oak woodland
Rancho Rio Av	B	35	Yes	Newell Cr	residential - horticultural or developed
Rancho Rio Av	B	35	Yes	Newell Cr	black cottonwood riparian woodland
Rancho Rio Av	B	35	Yes	Newell Cr	black cottonwood riparian woodland
Redwood Dr	B	38	Yes	Shingle Mill Cr	California bay forest
Redwood Dr	B	38	Yes	Shingle Mill Cr	redwood forest
Redwood Dr	B	38	Yes	Shingle Mill Cr	California bay forest
Riverside Park Dr	B	35	Yes	Newell Cr	box elder riparian forest
Riverside Park Dr	B	35	Yes	Newell Cr	box elder riparian forest
Riverside Park Dr	B	35	Yes	Newell Cr	residential - horticultural or developed
Riverside Park Dr	B	35	Yes	Newell Cr	residential - horticultural or developed
Riverside Rd	B	33	Yes	San Lorenzo River	redwood forest
Riverside Rd	B	33	Yes	San Lorenzo River	redwood forest
Riverside Rd	B	33	Yes	San Lorenzo River	white alder forest
Riverside Rd	B	33	Yes	San Lorenzo River	white alder forest
Rose Acres Ln	B	39	Yes	San Lorenzo River	coast live oak woodland
Rose Acres Ln	B	39	Yes	San Lorenzo River	coast live oak woodland
Teilh Dr	B	27	Yes	San Lorenzo River	residential - redwood forest
Teilh Dr	B	27	Yes	San Lorenzo River	residential - redwood forest
Teilh Dr	B	27	Yes	San Lorenzo River	residential - redwood forest
Two Bar Rd	B	30	Yes	Two Bar Cr	redwood forest
Two Bar Rd	B	30	Yes	Two Bar Cr	redwood forest
Two Bar Rd	B	30	Yes	Two Bar Cr	redwood forest
Two Bar Rd	B	29	Yes	Two Bar Cr	redwood forest
Two Bar Rd	B	30	Yes	Two Bar Cr	redwood forest
Two Bar Rd	B	30	Yes	Two Bar Cr	redwood forest
Two Bar Rd	B	30	Yes	Two Bar Cr	redwood forest
Two Bar Rd	B	30	Yes	Two Bar Cr	redwood forest

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Two Bar Rd	B	30	Yes	Two Bar Cr	redwood forest
Two Bar Rd	B	30	Yes	Two Bar Cr	redwood forest
Two Bar Rd	B	30	Yes	Two Bar Cr	redwood forest
Two Bar Rd	B	30	Yes	Two Bar Cr	redwood forest
Two Bar Rd	B	29	Yes	Two Bar Cr	redwood forest
Two Bar Rd	B	29	Yes	Two Bar Cr	redwood forest
Two Bar Rd	B	29	Yes	Two Bar Cr	redwood forest
Two Bar Rd	B	29	Yes	Two Bar Cr	redwood forest
Upper East Zayante Rd	B	47	Yes	Trib of Zayante Creek	redwood forest
Upper East Zayante Rd	B	47	Yes	Trib of Zayante Creek	redwood forest
West Zayante Rd	B	39	Yes	Zayante Cr	black cottonwood riparian woodland
West Zayante Rd	B	39	Yes	Zayante Cr	coast live oak woodland
West Zayante Rd	B	40	Yes	Zayante Cr	valley oak riparian woodland
West Zayante Rd	B	40	Yes	Zayante Cr	residential - redwood forest
West Zayante Rd	B	40	Yes	Zayante Cr	redwood forest
West Zayante Rd	B	40	Yes	Zayante Cr	black cottonwood riparian woodland
West Zayante Rd	B	40	Yes	Trib of Zayante Creek	valley oak riparian woodland
Western Av	B	33	No	Alba Cr	redwood forest
Western Av	B	33	No	Alba Cr	redwood forest
Wildwood Rd	B	30	Yes	San Lorenzo River	residential - redwood forest
Aptos St	C	89	Yes	Valencia Cr	redwood forest
Aptos St	C	89	Yes	Valencia Cr	redwood forest
Bridge St	C	75	Yes	Soquel Cr	residential - horticultural or developed
Bridge St	C	75	Yes	Soquel Cr	black cottonwood riparian woodland
Bridge St	C	75	Yes	Soquel Cr	black cottonwood riparian woodland
Bridge St	C	75	Yes	Soquel Cr	residential - horticultural or developed

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Cherryvale Av	C	76	Yes	Soquel Cr	black cottonwood riparian woodland
Glen Haven Rd	C	76	Yes	Bates Cr	redwood forest
Highland Wy	C	84	No	Laurel Cr	redwood forest
Highland Wy	C	83	No	Laurel Cr	redwood forest
Highland Wy	C	86	Yes	Trib of Soquet Creek	redwood forest
Highland Wy	C	86	Yes	Trib of Soquet Creek	redwood forest
Long Ridge Rd	C	85	No	Amaya Cr	redwood forest
Main St	C	76	Yes	Bates Cr	residential - redwood forest
Main St	C	76	Yes	Bates Cr	California bay forest
Main St	C	76	Yes	Bates Cr	residential - horticultural or developed
Main St	C	76	Yes	Bates Cr	residential - horticultural or developed
Moosehead Dr	C	90	Yes	Aptos Cr	residential - horticultural or developed
Moosehead Dr	C	90	Yes	Aptos Cr	black cottonwood riparian woodland
Moosehead Dr	C	90	Yes	Aptos Cr	residential - black cottonwood riparian woodland
Moosehead Dr	C	90	Yes	Aptos Cr	residential - horticultural or developed
Old Montgomery Ln	C	83	No	Laurel Cr	redwood forest
Old Montgomery Ln	C	83	No	Laurel Cr	redwood forest
Paper Mill Rd	C	75	Yes	Soquel Cr	residential - horticultural or developed
Paper Mill Rd	C	75	Yes	Soquel Cr	coast live oak woodland
Porter St	C	75	Yes	Soquel Cr	black cottonwood riparian woodland
Porter St	C	75	Yes	Soquel Cr	black cottonwood riparian woodland
Porter St	C	75	Yes	Soquel Cr	residential - horticultural or developed
Prescott Rd	C	76	Yes	Bates Cr	redwood forest
Prescott Rd	C	76	Yes	Bates Cr	redwood forest
Soquel Dr	C	89	Yes	Aptos Cr	redwood forest
Soquel Dr	C	89	Yes	Aptos Cr	redwood forest
Soquel Dr	C	75	Yes	Soquel Cr	residential - horticultural or developed

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Soquel Dr	C	75	Yes	Soquel Cr	black cottonwood riparian woodland
Soquel Dr	C	75	Yes	Soquel Cr	black cottonwood riparian woodland
Soquel Dr	C	75	Yes	Soquel Cr	residential - horticultural or developed
Soquel Dr	C	89	Yes	Valencia Cr	redwood forest
Soquel San Jose Rd	C	76	Yes	Soquel Cr	coast live oak woodland
Soquel San Jose Rd	C	76	Yes	Soquel Cr	residential - horticultural or developed
Stetson Rd	C	85	No	Amaya Cr	redwood forest
Stetson Rd	C	85	No	Amaya Cr	redwood forest
Valencia Rd	C	88	Yes	East Branch Valencia Cr	redwood forest
Valencia Rd	C	88	Yes	East Branch Valencia Cr	redwood forest
Valencia Rd	C	88	Yes	Valencia Cr	redwood forest
Valencia Rd	C	88	Yes	Valencia Cr	redwood forest
Winfield Wy	C	90	Yes	Aptos Cr	arroyo willow riparian forest
Winfield Wy	C	90	Yes	Aptos Cr	arroyo willow riparian forest
Airport Bl	D	119	No	Corralitos Cr	black cottonwood riparian woodland
Airport Bl	D	119	No	Corralitos Cr	California annual grassland
Airport Bl	D	119	No	Corralitos Cr	black cottonwood riparian woodland
Airport Bl	D	119	No	Corralitos Cr	California annual grassland
Browns Valley Rd	D	103	No	Browns Cr	redwood forest
Browns Valley Rd	D	103	No	Browns Cr	redwood forest
Browns Valley Rd	D	103	No	Browns Cr	redwood forest
Browns Valley Rd	D	103	No	Browns Cr	redwood forest
Browns Valley Rd	D	103	No	Browns Cr	redwood forest
Browns Valley Rd	D	103	No	Browns Cr	redwood forest
Browns Valley Rd	D	103	No	Browns Cr	redwood forest
Browns Valley Rd	D	103	No	Browns Cr	redwood forest
Browns Valley Rd	D	105	Yes	Corralitos Cr	black cottonwood riparian woodland
Browns Valley Rd	D	105	Yes	Corralitos Cr	black cottonwood riparian woodland

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Browns Valley Rd	D	105	Yes	Corralitos Cr	California annual grassland
Browns Valley Rd	D	105	Yes	Corralitos Cr	residential - horticultural or developed
Buena Vista Dr	D	108	No	Gallighan Slough	arroyo willow riparian forest
Buena Vista Dr	D	108	No	Gallighan Slough	arroyo willow riparian forest
College Rd	D	120	No	Salsipuedes Cr	residential - horticultural or developed
College Rd	D	120	No	Salsipuedes Cr	California annual grassland
Eureka Canyon Rd	D	100	No	Trib of Carlitos Creek	redwood forest
Eureka Canyon Rd	D	100	No	Trib of Carlitos Creek	redwood forest
Eureka Canyon Rd	D	100	No	Shingle Mill Gulch	redwood forest
Eureka Canyon Rd	D	100	No	Shingle Mill Gulch	redwood forest
Eureka Canyon Rd	D	100	No	Shingle Mill Gulch	redwood forest
Eureka Canyon Rd	D	100	No	Shingle Mill Gulch	redwood forest
Eureka Canyon Rd	D	100	No	Shingle Mill Gulch	redwood forest
Eureka Canyon Rd	D	100	No	Diablo Gulch	redwood forest
Eureka Canyon Rd	D	100	No	Diablo Gulch	redwood forest
Eureka Canyon Rd	D	101	No	Eureka Gulch	redwood forest
Eureka Canyon Rd	D	101	No	Eureka Gulch	redwood forest
Eureka Canyon Rd	D	100	No	Corralitos Cr	redwood forest
Eureka Canyon Rd	D	100	No	Corralitos Cr	redwood forest
Eureka Canyon Rd	D	101	Yes	Corralitos Cr	redwood forest
Eureka Canyon Rd	D	101	Yes	Corralitos Cr	redwood forest
Eureka Canyon Rd	D	102	Yes	Corralitos Cr	redwood forest
Eureka Canyon Rd	D	102	Yes	Corralitos Cr	redwood forest
Eureka Canyon Rd	D	101	Yes	Corralitos Cr	redwood forest
Eureka Canyon Rd	D	101	Yes	Corralitos Cr	redwood forest
Green Valley Rd	D	119	No	Corralitos Cr	black cottonwood riparian woodland
Green Valley Rd	D	119	No	Corralitos Cr	black cottonwood riparian woodland
Green Valley Rd	D	119	No	Corralitos Cr	residential - horticultural or developed

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Green Valley Rd	D	119	No	Corralitos Cr	California annual grassland
Green Valley Rd	D	117	Yes	Green Valley Cr	redwood forest
Green Valley Rd	D	117	Yes	Green Valley Cr	redwood forest
Green Valley Rd	D	117	Yes	Green Valley Cr	redwood forest
Green Valley Rd	D	117	Yes	Green Valley Cr	California annual grassland
Green Valley Rd	D	117	Yes	Green Valley Cr	California annual grassland
Harkins Slough Rd	D	110	No	West Branch Struve Slough	ruderal weeds
Harkins Slough Rd	D	110	No	West Branch Struve Slough	ruderal weeds
Harkins Slough Rd	D	110	No	West Branch Struve Slough	arroyo willow riparian forest
Harkins Slough Rd	D	110	No	West Branch Struve Slough	arroyo willow riparian forest
Harkins Slough Rd	D	109	No	Harkin Slough	stream or open water
Harkins Slough Rd	D	109	No	Harkin Slough	stream or open water
Harkins Slough Rd	D	109	No	Harkin Slough	red willow riparian forest
Harkins Slough Rd	D	109	No	Harkin Slough	red willow riparian forest
Hazel Dell Rd	D	103	No	Ramsey Cr	redwood forest
Hazel Dell Rd	D	103	No	Ramsey Cr	redwood forest
Hazel Dell Rd	D	103	No	Gamecock Canyon	redwood forest
Hazel Dell Rd	D	103	No	Gamecock Canyon	redwood forest
Hazel Dell Rd	D	115	Yes	Trib of Green Valley Creek	redwood forest
Hazel Dell Rd	D	115	Yes	Trib of Green Valley Creek	redwood forest
Highland Wy	D	86	Yes	Trib of Soquel Creek	redwood forest
Highland Wy	D	86	Yes	Trib of Soquet Creek	redwood forest
Highland Wy	D	86	Yes	Trib of Soquet Creek	redwood forest
Highland Wy	D	86	Yes	Soquel Cr	redwood forest
Highland Wy	D	86	Yes	Soquel Cr	redwood forest
Lakeview Rd	D	122	No	Salsipuedes Cr	California annual grassland
Lakeview Rd	D	122	No	Salsipuedes Cr	California annual grassland
Lakeview Rd	D	122	No	Salsipuedes Cr	California annual grassland

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Lee Rd	D	111	No	West Branch Struve Slough	broadleaf cattail wetland
Lee Rd	D	111	No	West Branch Struve Slough	broadleaf cattail wetland
Lower Highland Wy	D	100	No	Shingle Mill Gulch	redwood forest
Lower Highland Wy	D	100	No	Corralitos Cr	redwood forest
Lower Highland Wy	D	100	No	Corralitos Cr	redwood forest
Mt Madonna Rd	D	116	Yes	Green Valley Cr	redwood forest
Mt Madonna Rd	D	116	Yes	Green Valley Cr	redwood forest
Paulsen Rd	D	118	No	Salsipuedes Cr	California annual grassland
Paulsen Rd	D	118	No	Salsipuedes Cr	California annual grassland
Ranport Rd	D	107	No	Harkin Slough	arroyo willow riparian forest
Ranport Rd	D	107	No	Harkin Slough	arroyo willow riparian forest
Ranport Rd	D	107	No	Harkin Slough	coast live oak woodland
Ranport Rd	D	107	No	Harkin Slough	green wattle forest
Rider Rd	D	102	No	Rider Cr	redwood forest
Rider Rd	D	102	No	Rider Cr	redwood forest
Rider Rd	D	102	No	Rider Cr	redwood forest
Rider Rd	D	102	No	Rider Cr	redwood forest
San Andreas Rd	D	112	No	Watsonville Slough	California annual grassland
San Andreas Rd	D	112	No	Watsonville Slough	California annual grassland
San Andreas Rd	D	112	No	Watsonville Slough	arroyo willow riparian forest
Shell Rd	D	114	Yes	Pajaro Lagoon	coyote brush scrub
Shell Rd	D	114	Yes	Pajaro Lagoon	California annual grassland
Shell Rd	D	114	Yes	Pajaro Lagoon	residential - horticultural or developed
Varni Rd	D	106	Yes	Corralitos Cr	bare ground
Varni Rd	D	106	Yes	Corralitos Cr	California annual grassland
Varni Rd	D	106	Yes	Corralitos Cr	black cottonwood riparian woodland
Varni Rd	D	106	Yes	Corralitos Cr	California annual grassland
Varni Rd	D	106	Yes	Corralitos Cr	black cottonwood riparian woodland

Street	Road District	Map Number	Fisheries Concern?	Stream	Vegetation Community
Thurwachter Rd	None	113	Yes	Pajaro River	black cottonwood riparian woodland
Thurwachter Rd	None	113	Yes	Pajaro River	black cottonwood riparian woodland
Thurwachter Rd	None	113	Yes	Pajaro River	stream or open water

Appendix E

Target Pest Plants Infestation Levels by Road

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
SWANTON RD	1	Poison Hemlock	Low	Harding Grass, Forget-me-not, Periwinkle, Blue Gum	No	A	Blue gum is at Molino Creek
SWANTON RD	1	Cape Ivy	Medium	Periwinkle, Poison Hemlock, English Ivy	No	A	Mostly at Big Creek; extends outward from road easement
SWANTON RD	1	Italian Thistle	Low	Poison Hemlock	No	A	In small areas along road easement
SWANTON RD	2	Poison Hemlock	Low	Harding Grass, Forget-me-not, Periwinkle, Blue Gum	No	A	Blue gum is at Molino Creek
SWANTON RD	2	Cape Ivy	Low	Periwinkle, Poison Hemlock, English Ivy	No	A	Mostly at Big Creek; extends outward from road easement
SWANTON RD	2	Italian Thistle	Low	Poison Hemlock	No	A	In small areas along road easement
SWANTON RD	3	Poison Hemlock	Low	Harding Grass, Forget-me-not, Periwinkle, Blue Gum	No	A	Blue gum is at Molino Creek
SWANTON RD	3	Cape Ivy	Medium	Periwinkle, Poison Hemlock, English Ivy	No	A	Mostly at Big Creek; extends outward from road easement
SWANTON RD	3	Italian Thistle	Low	Poison Hemlock	No	A	In small areas along road easement

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
SWANTON RD	4	Poison Hemlock	Low	Harding Grass, Forget-me-not, Periwinkle, Blue Gum	No	A	Blue gum is at Molino Creek
SWANTON RD	4	Cape Ivy	Medium	Periwinkle, Poison Hemlock, English Ivy	No	A	Mostly at Big Creek; extends outward from road easement
SAN VICENTE ST	5	Poison Hemlock	High	Cape Ivy, Italian thistle	Yes, in places	A	One of worst areas of infestation observed
BONNY DOON RD	6	Poison Hemlock	High	Fennel, Ripgut brome	No	A	
BONNY DOON RD	6	Fennel	Low	Forget-me-not, Poison hemlock, Italian thistle	No	A	
BONNY DOON RD	6	Cape Ivy	High	Fennel, Italian Thistle, Poison Hemlock, Forget-me-not	No	A	In riparian corridor and scrub on both sides of road
LAGUNA RD	7	Cape Ivy	High	Himalaya berry	No	A	In riparian corridor of Laguna Creek
BONNY DOON RD	8	None	NA	None	No	A	

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
MARTIN RD	8	Green Wattle	Low	English Ivy, Blue Gum	No	A	Across from residence, near rare Santa Cruz Cypress stand, Blue Gum, English Ivy and two Blackwood Acacia near residence on Map 9
BONNY DOON RD	9	Periwinkle	Low	Green Wattle, English Ivy, Blackwood Acacia, Blue Gum	No	A	At junction with Pine flat, blackwood acacia is near residence
PINE FLAT RD	9	Periwinkle	Low	Forget-me-not	No	A	Near Bonny Doon Vineyard
SMITH GRADE RD	10	Periwinkle	Low	None	No	A	Small infestation near junction with driveway
SMITH GRADE RD	11	Periwinkle	Low	Forget-me-not	No	A	Widespread in area on Water District Lands
SMITH GRADE	12	None	NA	None	No	A	
SMITH GRADE	13	None	NA	None	No	A	
EMPIRE GRADE	14	Green Wattle	Medium	Pampas Grass	No	A	Acacia on both sides of road, one smaller pampas grass in area
PINE FLAT RD	15	French Broom	Low	Himalayan Berry	No	A	
PINE FLAT RD	15	Periwinkle	Low	None	No	A	very controllable
ICE CREAM GRADE	16	None	NA	None	No	A	

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
FELTON EMPIRE RD	17	None	NA	None	No	A	
FELTON EMPIRE RD	18	None	NA	None	No	A	
FELTON EMPIRE RD	19	Periwinkle	Low	French Broom, Himalayan Berry	No	A	
LITTLE BASIN RD	20	None	NA	None	No	A	
LITTLE BASIN RD	21	None	NA	None	No	A	
CHINA GRADE RD	22	French Broom	Low				
CHINA GRADE RD	22	French Broom	High	Poison-oak, Periwinkle	No	B	Openings near Memory Lane have large, dense french broom in openings
MEMORY LN	22	French Broom	Low	Poison-oak, Periwinkle	No	B	Small section near junction with China Grade
CHINA GRADE RD	23	French Broom	Medium	Poison-oak, Periwinkle	No	B	Lowers Section, Low French Broom with abundant Poison-oak
DOUBLE BOGEY DR	24	French Broom	Low	English Ivy, Himalayan Blackberry	Yes	B	Boulder Creek Golf and Country Club - pretty well maintained
E HILTON DR	24	French Broom	Low	English Ivy, Himalayan Blackberry	Yes	B	Boulder Creek Golf and Country Club - pretty well maintained
HARE WY	24	French Broom	Low	English Ivy, Himalayan Blackberry	Yes	B	Boulder Creek Golf and Country Club - pretty well maintained

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
HILTON DR	24	French Broom	Low	English Ivy, Himalayan Blackberry	Yes	B	Boulder Creek Golf and Country Club - pretty well maintained
JAMISON CREEK RD	24	French Broom	Medium	Periwinkle	No	B	One patch of Periwinkle at bottom by fire station
KINGS HY	24	French Broom	Low	Periwinkle, Himalayan Berry	In places	B	
LAKE DR	24	English Ivy	Low	Periwinkle	Yes	B	Boulder Creek Golf and Country Club - pretty well maintained
MC PHERSON CT	24	French Broom	Low	None	Yes	B	Boulder Creek Golf and Country Club - pretty well maintained
W HILTON DR	24	English Ivy	Low	French Broom	Yes	B	Boulder Creek Golf and Country Club - pretty well maintained
MC GAFFIGAN MILL RD	25	English Ivy	Medium	Periwinkle, French Broom, Poison-oak	Yes	B	North Hwy 9
FERN DR	26	English Ivy	Medium	Periwinkle, French Broom, Poison-oak	Yes	B	North Hwy 9
TEILH DR	27	English Ivy	Medium	Periwinkle, French Broom, Poison-oak	Yes	B	North Hwy 9

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
KINGS CREEK RD	28	French Broom	Low	Himalayan Blackberry, Poison-oak	No	B	Upper Kings Creek Rd, broom in openings, poison-oak is prevalent in understory throughout, Himalayan berry is in lower portion of this section
KINGS CREEK RD	29	Periwinkle	High	French Broom, English Ivy, Himalayan Berry, Poison Oak	No	B	Middle Kings Creek
TWO BAR RD	29	French Broom	Low	Himalayan Blackberry, Poison-oak	No	B	Upper Two Bar Rd., broom infestations in only a few openings in lower sections of this map
TWO BAR RD	30	Many	High	Periwinkle, English Ivy, Himalayan Berry, French Broom, Poison-oak	Yes, in places	B	Lower Two Bar Rd
TWO BAR RD	30	English Ivy	Medium	Periwinkle, Pampas grass, Himalayan Berry, French Broom	Yes, in places	B	Uppermost sections of Map 30 have more French Broom

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
BRIMBLECOM RD	30	Periwinkle	High	Himalayan Blackberry, English Ivy, Poison-oak	In places	B	Associated with residences in places
BRIMBLECOM RD	31	French Broom	Low	Poison-oak	No	B	One small patch of broom near bridge and Hwy 9
HILLSIDE DR	30	Periwinkle	High	French Broom, English Ivy, Himalayan Berry, Poison Oak	Yes, in places	B	
KINGS CREEK RD	30	Periwinkle	High	French Broom, English Ivy, Himalayan Berry, Poison Oak	Yes	B	Lower Kings Creek
MADRONA RD	30	English Ivy	High	Green Wattle, Himalayan Blackberry, Poison-oak, Periwinkle	Yes	B	Himalayan Blackberry along bridge, Acacia tree on corner
OLD COUNTY HWY	30	Periwinkle	High	French Broom, English Ivy, Himalayan Berry, Poison Oak	Yes, in places	B	Road does not extend over creek as shown on map.
PLEASANT WY	30	English Ivy	High	Green Wattle, Himalayan Blackberry, Poison-oak, Periwinkle	Yes	B	Himalayan Blackberry along bridge, Acacia tree on corner

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
POOL DR	30	English Ivy	High	Himalayan Blackberry, Poison-oak, Periwinkle	Yes	B	
WILDWOOD RD	30	English Ivy	High	Himalayan Blackberry, Poison-oak, Periwinkle	Yes	B	
ACORN DR	31	English Ivy	High	French Broom	No	B	French Broom is more prevalent in openings
AZALEA ST	31	Many	Low	French Broom, Himalayan Berry, English Ivy, Black Acacia	Yes	B	
BEAR CREEK RD	31	Many	Medium	Green Acacia, French Broom, Himalayan Berry, Periwinkle, English Ivy, Poison-oak	No	B	Lower Bear Creek
BOULDER BROOK DR	31	English Ivy	Medium	French Broom, Himalayan Blackberry, Poison-oak	Yes, in places	B	Infestations mostly on lower road
BROOK LN	31	English Ivy	High	French Broom, Himalayan Blackberry	Yes	B	
HAZEL AV	31	English Ivy	Low	Scotch Broom	Yes	B	

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
HUCKLEBERRY LN	31	French Broom	Medium	Scotch Broom, English Ivy, Periwinkle, Himalayan Berry, Poison-oak	Yes	B	Grassy roadsides have dense infestations of Broom
IRWIN WY	31	Periwinkle	High	Poison Oak, French Broom, Himalayan Berry	No	B	North side by bridge
JUNCTION AV	31, 32	Many	Low	French Broom, Himalayan Berry, English Ivy, Black Acacia	Yes	B	Residential in City of Boulder Creek
LAUREL ST	31,32	Many	Low	French Broom, Himalayan Berry, English Ivy, Black Acacia	Yes	B	Residential in City of Boulder Creek
LORENZO ST	31, 32	Many	Low	French Broom, Himalayan Berry, English Ivy	Yes	B	Residential in City of Boulder Creek
MIDDLETON AV	31, 32	Many	Low	French Broom, Himalayan Berry, English Ivy, Black Acacia	Yes	B	Residential in City of Boulder Creek

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
OAK AV	31	Many	Low	French Broom, Himalayan Berry, English Ivy, Black Acacia	Yes	B	
RAILROAD AV	31, 32	Many	Low	French Broom, Himalayan Berry, English Ivy, Black Acacia	Yes	B	
WEST PARK AV	31	Periwinkle	Medium	French Broom, Himalayan Blackberry	Yes, in places	B	
AZALEA ST	32	Many	Low	French Broom, Himalayan Berry, English Ivy, Black Acacia	Yes	B	
BEAR CREEK RD	32	Many	Medium	Green Acacia, French Broom, Himalayan Berry, Periwinkle, English Ivy, Poison-oak	No	B	
EAST ST	32	English Ivy	Low	Scotch Broom	Yes	B	
FAIRMOUNT DR	32	Periwinkle	High	Poison Oak, French Broom, Himalayan Berry	No	B	
HAZEL AV	32	English Ivy	Low	Scotch Broom	Yes	B	

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
HUCKLEBERRY LN	32	French Broom	Medium	Scotch Broom, English Ivy, Periwinkle, Himalayan Berry, Poison-oak	Yes	B	Grassy roadsides have dense infestations of Broom
IRWIN WY	32	French Broom, Himalayan Berry	High	Periwinkle, Poison Oak	Yes, in places	B	Dense thickets in open sites
IRWIN WY	32	Periwinkle	Medium	French Broom, English Ivy, Poison Oak	Yes	B	Shady sites bordering river
IRWIN WY	32	Periwinkle	High	Poison Oak, French Broom, Himalayan Berry	No	B	North side by bridge
IRWIN WY	32	English Ivy	High	Green Acacia, French Broom, Himalayan Berry, Periwinkle	Yes	B	South Irwin Wy. on west side of river
IRWIN WY	32	French Broom	High	Green Acacia, Poison Oak	No	B	South Irwin Wy. east side of bridge
LORENZO AV	31, 32	English Ivy	High	Periwinkle, Himalayan Berry, Poison Oak	Yes	B	
MOUNTAIN ST	32	English Ivy	High	Periwinkle, Himalayan Berry, Poison Oak	Yes	B	

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
PAONE DR	31, 32	French Broom	Low	English Ivy	Yes	B	Broom below residence on edge of cul-de-sac
SAINT FRANCIS DR	31, 32	English Ivy	Low	Himalayan Berry	Yes	B	Ivy is dominant pest in yards and residential
ALBA RD	33	Periwinkle	Medium	Himalayan Blackberry, English Ivy, Poison-oak	In places	B	Periwinkle and English Ivy dense where present
ALTA VIA	33	Periwinkle	Medium	Himalayan Blackberry, English Ivy, Poison-oak	In places	B	Periwinkle and English Ivy dense where present
CLEAR CREEK RD	33	English Ivy	Low	French broom, Himalayan Berry, Periwinkle, Poison-oak	No	B	Upper section is generally weed-free except lowest section near High St.
LARKSPUR ST	33	English Ivy, Himalayan Berry	High	Periwinkle, French Broom	Yes	B	Ivy and Himalayan Berry on either side of SLV river. Minor infestation of Periwinkle and Broom
RIVERSIDE RD	33	English Ivy, Himalayan Berry	High	Periwinkle, French Broom	Yes	B	
WESTERN AV	33	English Ivy	Medium	French Broom	Yes, in places	B	
LOVE CREEK RD	34	French Broom	High	English Ivy, Periwinkle, Poison Oak, Himalayan	No	B	Upper Love Creek

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
				Berry			
LOVE CREEK RD	34	Periwinkle	High	Himalayan Berry, Poison Oak	Yes, in places	B	Middle Love Creek
RIVERSIDE DR	34	Periwinkle	High	Himalayan Berry, Poison Oak	Yes, in places	B	
BROOKSIDE AV	35	Periwinkle	Medium	Himalayan Berry, Poison Oak	Yes, in places	B	
GLEN ARBOR RD	35	Himalayan Blackberry	Low	Periwinkle, English Ivy, Poison-oak	Yes	B	Most is near bridge over Newell Crk.
GLEN ARBOR RD	35	English Ivy	Low	Black Acacia, Himalayan Berry	Yes	B	Remove Acacia from intersection of Glen Arbor and Hwy. 9
HARMONY HILL RD	35	French Broom	Medium	Poison Oak	No	B	
HART LN	35	Periwinkle	Medium	English Ivy	Yes	B	Mostly associated with residential neighborhood
HILLSIDE AV	35	Himalayan Berry	Low	English Ivy, French Broom	Yes, in places	B	Few young Broom
HUBBARD GULCH RD	35	French Broom	High	Poison Oak	No	B	Middle and upper sections
HUBBARD GULCH RD	35	English Ivy	High	Himalayan Berry, Periwinkle, Poison Oak	No	B\	Lower portion

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
LOVE CREEK RD	35	None			Yes	B	No target weed species
LOVE CREEK RD	35	Periwinkle	High	French Broom, Green Acacia, Poison Oak, English Ivy, Himalayan Berry	No	B	Near Brookside Ave., small patch of Acacia near junction with Brookside Ave.
MILL ST	35	None			Yes	B	No target weed species
NEWELL CREEK RD	35	Poison-oak	Low	Italian Thistle, French Broom, Green Acacia, Periwinkle	No	B	Periwinkle is more prevalent on lower section under oak canopy, patches of french Broom extend into residential yards in places
OLD COUNTY RD	35	English Ivy	Low	French Broom, Poison-oak, Periwinkle	No	B	
OLD COUNTY RD	35	Periwinkle	Medium	English Ivy	No	B	
OLD COUNTY RD	35	French Broom	Low	None	Yes	B	
RANCHO RIO AV	35	Periwinkle	Medium	English Ivy	Yes	B	Mostly associated with residential neighborhood
RIVERSIDE AV	35	Periwinkle	High	Himalayan Berry, Poison Oak	Yes, in places	B	
RIVERSIDE DR	35	Periwinkle	High	Himalayan Berry, Poison Oak	Yes, in places	B	

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
RIVERSIDE PARK DR	35	Periwinkle	Medium	English Ivy, French Broom, Himalayan Berry, Green Acacia	Yes	B	Narrow road edges outside of residential fences
RIVERSIDE PARK DR	35	Himalayan Berry	Medium	English Ivy	Yes	B	Lower section of River Park Dr.
SUNNYSIDE AV	35	Periwinkle	High	Himalayan Berry, Poison Oak	Yes, in places	B	
GLEN ARBOR RD	36	Green Wattle	Low	English Ivy, French Broom	No	B	Acacia is in one stand on north side of road at east end of bridge w/ outlier patches
BRACKNEY RD	37	English Ivy	High	Periwinkle, French Broom, Pampas Grass, Himalayan Blackberry, Poison-oak	Yes	B	Some Ivy in area is desired plant of landowners
BIG TREES PARK RD	38	Green Wattle	High	Periwinkle, English Ivy, Poison-oak	No	B	Acacia stand near Hwy 9 on north side of Big Trees Park Rd.
BROOKSIDE WY	38	English Ivy	High	French Broom, Green Acacia, Himalayan Blackberry, Poison-oak	Yes	B	Acacia at intersection of Brookside Wy and Lakeview Dr

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
LAKEVIEW DR	38	English Ivy	High	French Broom, Green Acacia, Himalayan Blackberry, Poison-oak	Yes	B	Acacia at intersection of Brookside Wy and Lakeview Dr
REDWOOD DR	38	Periwinkle	Low	English Ivy, Himalayan Blackberry	Yes	B	Downhill section near Hwy 9
REDWOOD DR	38	English Ivy	Medium	French Broom, Poison Oak, Himalayan Berry	Yes	B	Middle section near Plateau Dr.
ADA AV	39	Himalayan Berry	Low	Poison Oak, English Ivy, Periwinkle	Yes	B	
BUCKLIEN WY	39	French Broom	Low	None	No	B	
CONFERENCE DR	39	Blue Gum	Low	French Broom, Italian Thistle	No	B	Individual large tree in black cottonwood woodland along creek
CONFERENCE DR	39	French Broom	Low	None	No	B	
CONFERENCE DR	39	Periwinkle	Low	None	No	B	One large patch
COVERED BRIDGE RD	39	Himalayan Berry	High	English Ivy, Periwinkle, Poison Oak, Green Acacia, French Broom	No	B	Either side of covered bridge
EAST ZAYANTE RD	39	Italian Thistle	Low	Poison Hemlock, Periwinkle, Forget-me-not, French Broom	No	B	

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
EAST ZAYANTE RD	39	Himalayan Blackberry	High	Poison-oak, French Broom, Periwinkle	Yes	B	
FALL CREEK DR	39	English Ivy	High	Periwinkle, French Broom, Poison-oak, Himalayan Berry	Yes, in places	B	Ground covers on road edges are biggest pest issue
GRAHAM HILL RD	39	French Broom	Low	None	No	B	
GUSHEE ST	39	Himalayan Berry	High	Poison Oak, English Ivy, Periwinkle	Yes	B	Tall Poison Oak and Himalayan Berry on fence line
HIHN ST	39	Himalayan Berry	High	Poison Oak, English Ivy, Periwinkle	Yes	B	
KIRBY ST	39	Giant Reed	Low	None	Yes	B	
LAUREL DR	39	Himalayan Berry	High	Poison Oak, English Ivy, Periwinkle	Yes	B	
MT HERMON RD	39	Himalayan Berry	High	English Ivy, Periwinkle, Poison Oak, Green Acacia, French Broom	No	B	Downtown Felton
PLATEAU DR	39	Himalayan Berry	Low	Poison Oak, English Ivy, Periwinkle	Yes	B	
ROARING CAMP RD	39						
ROSE ACRES LN	39	English Ivy	High	Poison Oak, Green Acacia	No	B	
WEST ZAYANTE RD	39	Silver Waddle	Low	French Broom, Periwinkle	Yes	B	Scattered individual Acacia trees

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
ZAYANTE RD	39	Blue Gum	Low	French Broom, Italian Thistle	Yes, in places	B	
ZAYANTE RD	39	French Broom	Low	None	Yes, in places	B	
EAST ZAYANTE RD	40	French Broom	Low	None	Yes, in places	B	
OLYMPIA STATION RD	40	French Broom	Low	None	Yes, in places	B	
QUAIL HOLLOW RD	40	French Broom	Low	Periwinkle	Yes, in places	B	
WEST ZAYANTE RD	40	Silver Waddle	Low	French Broom, Periwinkle	Yes	B	Scattered individual Acacia trees
WEST ZAYANTE RD	40	Poison oak	Low	Periwinkle, Italian Thistle, Poison Hemlock	Yes	B	
GEYER RD	41	French Broom	Low	Poison Oak	Yes	B	
LOCKHART GULCH RD	41	French Broom	Low	Poison Oak	Yes	B	
LOCKHART GULCH RD	41	Himalayan Blackberry	Medium	None	Yes	B	
LOCKHART GULCH RD	41	Periwinkle	Medium	English Ivy, French Broom	Yes	B	
NELSON RD	41	Himalayan Berry	High	NA	No	B	
NELSON RD	41	Periwinkle	High	Himalayan Berry, Italian thistle	No	B	
NELSON RD	41	French Broom	Low	NA	No	B	Along Mt. Hermon Road
EAST ZAYANTE RD	42	French Broom	Low	None	Yes, in places	B	
LOCKHART GULCH RD	42	French Broom	Low	Poison Oak	Yes	B	Infestations near residences
LOCKHART GULCH RD	42	Himalayan Blackberry	Medium	None	Yes	B	Infestations near residences
LOCKHART GULCH RD	42	Periwinkle	Medium	English Ivy, French Broom	Yes	B	Infestations near residences

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
LOMPICO RD	42, 43, 44	French Broom	Medium	Periwinkle, English Ivy, Forget-me-not	No, in places	B	
LOMPICO RD	42, 43, 44	Periwinkle	High	French Broom, English Ivy	No	B	
LOMPICO RD	42, 43, 44	English Ivy	Medium	French broom, Forget-me-not, Periwinkle	No	B	
VALLEY VIEW AV	42	French Broom	Medium	Periwinkle, English Ivy, Forget-me-not	No, in places	B	
CARROL AV	43	English Ivy	Medium	French broom, Forget-me-not, Periwinkle	No	B	
LAKE BL	43, 44	Periwinkle	High	French Broom, English Ivy	No	B	
EAST ZAYANTE RD	43, 45, 46, 47	Italian Thistle	Low	Poison Hemlock, Periwinkle, Forget-me-not, French Broom	No	B	
EAST ZAYANTE RD	45, 46, 47	Himalayan Blackberry	High	Poison-oak, French Broom, Periwinkle	Yes	B	
EAST ZAYANTE RD	45, 46, 47	French Broom	Medium	Forget-me-not, Himalayan Blackberry	No	B	
UPPER EAST ZAYANTE RD	47	French Broom	Low	Poison-oak, Poison Hemlock,	No	B	Few broom in openings

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
BEAR CREEK RD	48	English Ivy	Low	Scotch Broom, French broom, Periwinkle	No	B	French Broom is extensive under California Bay stand
DEERWOOD DR	48	English Ivy	Low	Scotch Broom, French broom, Periwinkle	Yes	B	Bear Creek Country Club neighborhood
FERNWOOD DR	48	English Ivy	Low	Scotch Broom, French broom, Periwinkle	Yes	B	Bear Creek Country Club neighborhood
FOREST HILL DR	48	English Ivy	Low	Scotch Broom, French broom, Periwinkle	Yes	B	Bear Creek Country Club neighborhood
MAYWOOD DR	48	English Ivy	Low	Scotch Broom, French broom, Periwinkle	Yes	B	Bear Creek Country Club neighborhood
OAKWOOD LN	48	English Ivy	Low	Scotch Broom, French broom, Periwinkle	Yes	B	Bear Creek Country Club neighborhood
BEAR CREEK RD	49	French Broom	Medium	Poison-oak	No	B	Short section just past Whalebone Gulch, poison-oak and broom are tall on both sides of road
BEAR CREEK RD	50	French Broom	Medium	Poison oak	No	B	
MT HERMON RD	51	French Broom	Medium	Poison oak	No	B	
OLD SANTA CRUZ HWY	52	English Ivy	High	Himalayan Berry, Periwinkle, French Broom, Poison oak	No	A	

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
SCHULTIES RD	53	Periwinkle	Medium	French Broom, Himalayan Berry, Forget-me-not, Poison Oak	No	A	
SCHULTIES RD	53	Himalayan Berry	Medium	French Broom, Poison Oak	No	A	Himalayan Berry thickets 1-4' high on downhill side of road near and within slope failure.
GLENWOOD DR	54	French Broom	High	Italian Thistle, Poison Oak, Periwinkle	In places	B	Upper section, 4-8' tall mature Broom on both sides of road
GLENWOOD DR	55	Periwinkle	High	French Broom, Italian Thistle, Poison Oak	No	B	Lower section
VILLA GLEN DR	55	Periwinkle	High	French Broom, Italian Thistle, Poison Oak	No	B	
GLENWOOD CUTOFF	56	French Broom	Low	Periwinkle, Himalayan Berry, Poison Oak	Yes	A	
GLENWOOD DR	56	Periwinkle	Low	French Broom, English Ivy, Poison Oak, Forget-me-not	No	A	Low density infestation in lower sections
GLENWOOD DR	56	French Broom	Low	Periwinkle, Himalayan Berry, Poison Oak	Yes	A	Low density infestion in upper sections

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
BEAN CREEK RD	57	French Broom	Low	None	No	B	Upper Bean Creek Rd.
BEAN CREEK RD	58	Periwinkle	Medium	Himalyan Blackberry, English Ivy, French Broom, Green Wattle	No	B	Low infestations of French Broom and Himalaya Berry here
BEAN CREEK RD	59	French Broom	Medium	Periwinkle, Himalayan Berry, English Ivy, Poison-oak	No	B	Lower Bean Creek Rd.
GRAHAM HILL RD	60	Italian Thistle	Low	French Broom, Poison-oak, Green Wattle	No	B	Sensitive Sandhill Ponderosa Pine Habitat
EL RANCHO DR	61	Green Acacia	High	Blue Gum, French Broom, Himalayan Berry, Italian Thistle	No	A	Near Hwy. 17, one of heaviest Acacia infestations mapped
LA MADRONA DR	61	Italian Thistle	High	Periwinkle, Blue Gum, Black Acacia	In places	A	Near Hwy. 17
GLEN CANYON RD	62	Periwinkle	Medium	Blue Gum, Italian Thistle, Poison-oak, French Broom	Yes	A	
OCEAN STREET EX	63	Italian Thistle	Low	French Broom, Poison-oak, Green Wattle	No	B	Roadsides are disturbed in places from homeless encampments

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
OCEAN STREET EX	63	Periwinkle	Medium	English Ivy, Italian Thistle, Green Wattle, Cape Ivy, Poison Oak, French Broom, Bull Thistle	No	B	Grassy edges have Italian thistle, few Green Acacia saplings
CROSSING ST	64	Periwinkle	Medium	Italian Thistle,Green Wattle, Cape Ivy	No	B	Grassy edges have Italian thistle, few Green Acacia saplings
BRANCIFORTE DR	65	Himalayan Blackberry	High	Periwinkle, English Ivy, Green Wattle, Italian thistle, French Broom, Poison-oak	In places	A	Upper Branciforte Drive has 3-6' tall Himalayan berry thickets with ground cover of periwinkle and English Ivy
BRANCIFORTE DR	65	Poison-oak	High	Periwinkle, Italian Thistle	In places	A	Dense low and medium height poison-oak along roadsides
GRANITE CREEK RD	65	Himalayan Blackberry	Low	Pampas Grass, Forget-me-not, Green Acacia	No	A	Upper Section, Few small pampas grass, Green Acacia trees extend beyond road easement in places

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
HAPPY VALLEY RD	65, 67	Periwinkle	High	Himalayan Berry, English Ivy, Blue Gum, Italian Thistle, Poison Oak, French Broom, Pampas Grass	Yes	A	One patch of Pampas Grass in upper most section
MOUNTAIN VIEW RD	65	Himalayan Berry	High	Periwinkle, English Ivy, Silver Waddle, Italian Thistle, French Broom Poison Oak	Yes	A	
MOUNTAIN VIEW RD	65	Poison Oak	High	Periwinkle, Italian Thistle	Yes	A	
VINE HILL RD	65	Himalayan Berry	High	Periwinkle, English Ivy, Silver Waddle, Italian Thistle, French Broom Poison Oak	Yes	A	
VINE HILL RD	65	Poison Oak	High	Periwinkle, Italian Thistle	Yes	A	
GRANITE CREEK RD	66	Periwinkle	Medium	Italian Thistle, French Broom, Green Acacia, Blue Gum	No	A	Lower Sections, Large Blue Gum stand at bottom near Branciforte Drive
REDWOOD DR	66	Periwinkle	High	Italian Thistle, Bull Thistle, Blue Gum, French Broom	Yes	A	Only a few French Broom

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
REDWOOD DR	66	English Ivy	High	Italian Thistle, Bull Thistle, Blue Gum, French Broom	Yes	A	Only a few French Broom
REDWOOD DR	66	Himalayan Blackberry	High	Italian Thistle, Bull Thistle, Blue Gum, French Broom	Yes	A	Only a few French Broom
BRANCIFORTE DR	67	Periwinkle	Medium	Italian Thistle, Himalayan Berry (few), English Ivy, French Broom	In places	A	Middle two sections of Branciforte Drive
BRANCIFORTE DR	68	Blue Gum	High	Green Acacia, Italian Thistle, Periwinkle, English Ivy, Himalayan Berry, Poison Oak, French Broom	In places	A	Middle sections of Branciforte, few Himalayan Berry and Broom
GLEN CANYON RD	68	Periwinkle	High	English Ivy, French Broom, Blue Gum, Italian Thistle, Green Acacia	Yes	A	
GRANITE CREEK RD	68	Periwinkle	Medium	Blue Gum, English Ivy	No, in places	A	Large stand of Blue Gum at intersection with Branciforte Drive

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
PAUL SWEET RD	68	Periwinkle	High	Himalayan Berry, Italian Thistle, Forget-me-not	Yes	A	
REDWOOD DR	68	Periwinkle	High	Italian Thistle, Bull Thistle, Blue Gum, French Broom	Yes	A	Only a few French Broom
REDWOOD DR	68	English Ivy	High	Italian Thistle, Bull Thistle, Blue Gum, French Broom	Yes	A	Only a few French Broom
REDWOOD DR	68	Himalayan Blackberry	High	Italian Thistle, Bull Thistle, Blue Gum, French Broom	Yes	A	Only a few French Broom
BRANCIFORTE DR	69	Periwinkle	High	Italian Thistle, Green Acacia, English Ivy, Poison Oak, Himalayan Berry	Yes, in places	A	Lower section of Branciforte
GLEN CANYON RD	69	Italian Thistle	High	French Broom, English Ivy, Himalayan Berry, Bull Thistle, Periwinkle, Poison-oak, Spanish Broom, Green Wattle	No	A	Low density English Ivy and French Broom

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
MILL RD	69	Italian Thistle	High	French Broom, English Ivy, Himalayan Berry, Bull Thistle, Periwinkle, Poison-oak, Green Wattle	No	A	Low density English Ivy and French Broom
PAUL SWEET RD	69	Periwinkle	High	Himalayan Berry, Italian Thistle, Forget-me-not	Yes	C	Upper Paul Sweet has heaviest infestations
PAUL SWEET RD	69	Italian Thistle	Medium	Poison Oak, Periwinkle, Poison Hemlock	Yes	C	
PAUL SWEET RD	69	Pampas Grass	Low	Italian Thistle, Poison Oak, French Broom	Yes	C	Mostly controllable within road easement
BROOKWOOD DR	70	Cape Ivy	High	English Ivy, Himalayan Blackberry, Periwinkle	N	A	
BROOKWOOD DR	70	Poison Hemlock	Low	Italian Thistle, Himalayan Berry	N	A	
BROOKWOOD DR	70	English Ivy	Low	Green Wattle, Poison-oak	N	A	
BROOKWOOD DR	70	Green Wattle	Low	English Ivy, Poison-oak	N	A	2 small trees less than 4 inch dbh, others outside road easement

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
BOSTWICK LN	71	Green Acacia	High	English Ivy, Poison Hemlock, Poison Oak, Italian Thistle, French Broom	Yes	A	
CAPITOLA RD EXT	71	Green Acacia	High	English Ivy, Poison Hemlock, Poison Oak, Italian Thistle, French Broom	Yes	A	
SOQUEL AV	71	Iceplant	Low	English Ivy	Yes		
SOQUEL AV	71	Pampas Grass	Low	French Broom, Italian Thistle	Yes		
EAST CLIFF DR	73	None	NA	NA	Yes	A	Few scattered weeds right at beach
PORTOLA DR	73	Many	High	Blue Gum, French Broom, Iceplant, Pampas Grass, Himalayan Berry	Yes	A	At Rodeo Gulch
BROMMER ST	72, 74	Green Acacia	High	English Ivy, Poison Hemlock, Poison Oak, Italian Thistle, French Broom, Veldt (Erharta) Grass	Yes	A	Acacia on both sides of Brommer and Capitola Road at Rodeo Gulch Creek. Ivy and Hemlock are low level infestations.

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
CAPITOLA RD	71, 74	Green Acacia	High	English Ivy, Poison Hemlock, Poison Oak, Italian Thistle, French Broom	Yes	A	Acacia on both sides of Brommer and Capitola Road at Rodeo Gulch Creek. Ivy and Hemlock are low level infestations.
BRIDGE ST	75	Poison Hemlock	Low	Cape Ivy, Italian thistle, Forget-me-not	Yes	C	
NORTH RODEO GULCH RD	75	Poison Hemlock	Low	Cape Ivy, Italian thistle, Forget-me-not	Yes	C	
NORTH RODEO GULCH RD	75	Italian Thistle	Medium	NA	Yes	C	
NORTH RODEO GULCH RD	75	Blue Gum	Low	NA	Yes	C	Around 20 mature Eucalyptus
PAPER MILL RD	75	Poison Hemlock	Low	Cape Ivy, Italian thistle, Forget-me-not	Yes	C	
PAPER MILL RD	75	Italian Thistle	Medium	NA	Yes	C	
PORTER ST	75	Poison Hemlock	Low	Cape Ivy, Italian thistle, Forget-me-not	Yes	C	
PORTER ST	75	Italian Thistle	Medium	NA	Yes	C	
SOQUEL AV	75	Poison Hemlock	Low	Cape Ivy, Italian thistle, Forget-me-not	Yes	C	
SOQUEL AV	75	Italian Thistle	Medium	NA	Yes	C	
SOQUEL DR	75	Poison Hemlock	Low	Cape Ivy, Italian thistle, Forget-me-not	Yes	C	
SOQUEL DR	75	Italian Thistle	Medium	NA	Yes	C	
CHERRYVALE AV	76	Blue Gum	Low	English Ivy	Yes	C	

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
GLEN HAVEN RD	76	French Broom	Low	Pampas Grass, Himalayan Blackberry, Ageratina	Yes	C	
MAIN ST	76	Himalayan Blackberry	Medium	Italian Thistle, Poison Hemlock, Periwinkle	Yes	C	
PRESCOTT RD	76	English Ivy	Low	Forget-me-not	No	C	
PRESCOTT RD	76	Periwinkle	Low	Himalyan Blackberry, English Ivy, Poison Hemlock	Yes	C	
PRESCOTT RD	76	Green Wattle	Low	Blackwood Acacia, Periwinkle, Pampas Grass, French Broom	No	C	
SOQUEL SAN JOSE RD	76	French Broom	Low	Pampas Grass, Himalayan Blackberry	Yes	C	
SOQUEL SAN JOSE RD	76	Himalayan Blackberry	Low	Italian Thistle, Poison Hemlock, Periwinkle	Yes	C	In openings of redwood forest near residences.
SOQUEL SAN JOSE RD	76	Silver Waddle	Low	Black Wattle, French Broom, Pampas Grass	Yes	C	Few large trees and young seedlings.
LAUREL GLEN RD	77	Periwinkle	High	Italian Thistle, Poison Oak	In places	A	Lower section

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
LAUREL GLEN RD	77	Periwinkle	Medium	Pampas Grass, Italian Thistle, French Broom, Poison Oak	In places	A	Middle section, Pampas Grass on uphill roadside
OLIVE SPRINGS RD	77	Periwinkle	Medium	Pampas Grass, Green Acacia, French Broom, Italian Thistle, Blue Gum, Poison Oak	Yes	A	Lower and middle sections
SOQUEL SAN JOSE RD	77	Periwinkle	Medium	Pampas Grass, Green Acacia, French Broom, Italian Thistle, Blue Gum, Poison Oak	Yes	A	Lower and middle sections
LAUREL GLEN RD	78	Periwinkle	High	French Broom, Italian Thistle, Himalayan Berry, Poison Oak	No	A	Upper section
OLIVE SPRINGS RD	78	Periwinkle	Medium	Pampas Grass, Green Acacia, French Broom, Italian Thistle, Blue Gum, Poison Oak	Yes	A	Lower and middle sections
SOQUEL SAN JOSE RD	78	French Broom	Medium	Periwinkle, Poison Oak	No	A	
OLIVE SPRINGS RD	79	French Broom	Medium	Periwinkle, Poison Oak	No	A	Near locked gate for mining quarry
SOQUEL SAN JOSE RD	80	French Broom	Medium	Periwinkle, Poison Oak	No	A	

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
REDWOOD LODGE RD	81	French Broom	High	Himalayan Berry, Italian Thistle	No	A	At confluence of creeks in curve
MORRILL RD	82	French Broom	Low	Bull Thistle, Poison-oak	N	A	In openings, bull thistle on curve of creek
HIGHLAND WY	83	French Broom	Medium	Italian Thistle, Bull Thistle, English Ivy, Poison-oak	N	A	Tall French Broom in openings, tall poison-oak brambles on eastern slopes of road easement
NEW SUMMIT HY	83	French Broom	Medium	Italian Thistle, Bull Thistle, English Ivy, Poison-oak	N	A	Tall French Broom in openings, tall poison-oak brambles on eastern slopes of road easement
OLD MONTGOMERY LN	83	Periwinkle	High	English Ivy, French Broom	N	A	Few residences through gate, posted NO TRESPASSING
SOQUEL SAN JOSE RD	83	French Broom	Low	Italian Thistle, Himalayan Berry	N	A	French Broom with Italian Thistle on grassy edges, has not spread out of road easement significantly
HIGHLAND WY	84	French Broom	Low	None	N	A	Pretty clean, low density broom in partial shade

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
OLD MONTGOMERY LN	84	None	NA	NA	N	A	Road Map is wrong, this is a private driveway, not continuation of Montgomery Lane
LONG RIDGE RD	85	French Broom	High	Periwinkle, English Ivy, Poison-oak	No	A	Tall seeding French Broom on road edges
SKYLAND RD	85	French Broom	High	Periwinkle, English Ivy, Poison-oak	No	A	Tall seeding French Broom on road edges
STETSON RD	85	Periwinkle	High	English Ivy, Poison-oak	Yes	A	Tall Poison Oak on upper edges
HIGHLAND WY	86	French Broom	Medium	Pampas Grass, Periwinkle, Forget-me-not	N	C, D	Denser French Broom near Camp Loma and homes near Soquel Demonstration Forest
HIGHLAND WY	86	Himalayan Blackberry	Low	French broom, Forget-me-not, Periwinkle	N	D	Lower Highland Way
HIGHLAND WY	86	English Ivy	Low	Forget-me-not	In places	D	Lower Highland Way and Eureka Canyon Rd.
COX RD	87, 88	Poison Hemlock	Low	Italian Thistle	No	C	
BEAR VALLEY RD	88	Italian Thistle	Low	English Ivy	No	C	
BEAR VALLEY RD	88	Periwinkle	High	Italian Thistle, Cape Ivy, Himalayan Berry, Pampas Grass	No	C	

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
VALENCIA RD	88	Italian Thistle	Low	English Ivy	No	C	
VALENCIA RD	88	English Ivy	High	Himalayan Berry, Italian Thistle	In places	C	
VALENCIA RD	88	Periwinkle	High	Himalayan Berry, Italian Thistle	In places	C	
APTOS ST	89	English Ivy	High	Himalayan Berry, Italian Thistle	Yes	C	
SOQUEL DR	89	English Ivy	High	Cape Ivy, Periwinkle, Himalayan Berry, Poison Hemlock, Forget-me-not	Yes	C	Extends beyond road easement under bridge
SOQUEL DR	89	Himalayan Berry	Medium	English Ivy, Periwinkle, Poison Hemlock	Yes	C	On steep slope below bridge
SOQUEL DR	89	Italian Thisle	Low	English Ivy, Poison Hemlock, Himalayan Berry	Yes	C	
SOQUEL DR	89	Pampas Grass	Low	Himalayan Berry	Yes	C	On northwest side of Soquel Dr. at Aptos Creek
BENNETT RD	90	NA	NA	NA	Yes	C	
ESPLANADE	90	NA	NA	NA	Yes	C	
HAINLINE RD	90	NA	NA	NA	Yes	C	
MARINA AV	90	NA	NA	NA	Yes	C	

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
MOOSEHEAD DR	90	English Ivy	High	Poison Hemlock, Cape Ivy, Pampas Grass	Yes	C	
MOOSEHEAD DR	90	Cape ivy	High	English Ivy, Pampas Grass, Black Acacia, French Broom	Yes	C	
STEPHEN RD	90	Cape ivy	High	English Ivy, Pampas Grass, Black Acacia, French Broom	Yes	C	
WINFIELD WY	90	Iceplant	Low	NA	Yes	C	
EUREKA CANYON RD	100	English Ivy	Low	Forget-me-not	In places	D	Lower Highland Way and Eureka Canyon Rd.
LOWER HIGHLAND WY	100	Himalayan Blackberry	Low	French broom, Forget-me-not, Periwinkle	N	D	Lower Highland Way
EUREKA CANYON RD	101	Blue Gum	Low	French Broom	N	D	Near MP 2.79
EUREKA CANYON RD	101	Italian Thistle	Low	Periwinkle	N	D	Mostliy within easement near MP 3.5
EUREKA CANYON RD	102	Green Acacia	Low	French Broom	N	D	South of 1600 Eureka CYN RD, mostly within road easement
RIDER RD	102	French Broom	Medium	Italian Thistle, Himalayan Berry	No	D	
RIDER RD	102	Himalayan Blackberry	Medium	Italian Thistle, Poison Oak	No	D	

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
RIDER RD	102	Giant Reed	Low	Poison Oak	No	D	At one location within Rider Creek under wooden bridge on Rider Road Spur
BROWNS VALLEY RD	103	French Broom	Low	Periwinkle, Forget-me-not	No	D	
HAZEL DELL RD	103	French Broom	Low	Periwinkle, Forget-me-not	No	D	
HAZEL DELL RD	103	English Ivy	High	Periwinkle, Italian Thistle, Poison Hemlock, Himalayan Berry	No	D	
EUREKA CANYON RD	104	Periwinkle	Medium	Italian Thistle, Poison Hemlock,	N	D	Extends beyond road easement
EUREKA CANYON RD	104	English Ivy	Low	Periwinkle, Poison Hemlock, Cape Ivy	N	D	
EUREKA CANYON RD	104	Poison Hemlock	Low	Periwinkle	N	D	
EUREKA CANYON RD	104	Italian Thistle	Low	Periwinkle, Green Acacia	N	D	
BROWNS VALLEY RD	105	Italian Thistle	Low	Periwinkle, Green Acacia	N	D	Extends beyond road easement
VARNI RD	106	Italian Thistle	Low	Periwinkle, Green Acacia	N	D	Mostly within road easement and controllable

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
RANPORT RD	107	Green Wattle	High	Italian Thistle, Poison Hemlock, Pampas Grass	N	D	Causing visibility issue to landowners' driveway, adjacent to Harkins Slough
BUENA VISTA DR	108	Poison Hemlock	High	Italian Thistle	N	D	Extends well beyond the road easement
HARKINS SLOUGH RD	109	None	NA	NA	N	D	Area was mostly underwater
HARKINS SLOUGH RD	110	Poison Hemlock	High	Italian Thistle	N	D	Extends well beyond the road easement
LEE RD	111	Poison Hemlock	High	NA	No	D	Extends well beyond the road easement
SAN ANDREAS RD	112	Himalayan Berry	High	Periwinkle	No	D	Extends well beyond the road easement
SAN ANDREAS RD	112	Poison Hemlock	High	Italian Thistle, Pampas Grass	No	D	
SAN ANDREAS RD	112	Cape Ivy	Low	NA	No	D	
THURWACHTER RD	113	Himalayan Berry	High	Periwinkle	No	D	Extends well beyond the road easement
THURWACHTER RD	113	Poison Hemlock	High	Italian Thistle, Pampas Grass	No	D	
THURWACHTER RD	113	Cape Ivy	Low	NA	No	D	
SHELL RD	114	Himalayan Berry	High	Periwinkle	No	D	Extends well beyond the road easement

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
SHELL RD	114	Poison Hemlock	High	Italian Thistle, Pampas Grass	No	D	
SHELL RD	114	Cape Ivy	Low	NA	No	D	
HAZEL DELL RD	115, 116, 117	Italian Thistle	Medium	Poison-oak, Poison Hemlock, Periwinkle	N	D	
HAZEL DELL RD	115, 116, 117	English Ivy	Medium	Italian Thistle, Poison Hemlock, Pampas Grass	N	D	
HAZEL DELL RD	115, 116, 117	Poison Hemlock	Low	Italian Thistle, Poison-oak	N	D	
HAZEL DELL RD	115, 116, 117	Blue Gum	Low	Italian Thistle, Poison Hemlock	N	D	
GREEN VALLEY RD	116, 117	Periwinkle	Medium	Forget-me-not, Italian Thistle, Poison Hemlock	N	D	
GREEN VALLEY RD	116	Pampas Grass	Low	Italian Thistle	N	D	
GREEN VALLEY RD	119	English Ivy	High	Cape Ivy	No	D	Extends beyond right-of-way
GREEN VALLEY RD	119	Cape Ivy	Medium	Himalayan Berry, Green Acacia	No	D	Extends outside of road easement
GREEN VALLEY RD	119	Green Acacia	Medium	Poison Hemlock, Cape Ivy, Poison Oak	No	D	Several large Acacia outside road easement, however, most trees within 15 ft. of road

ROAD NAME	MAP #	DOMINANT PEST PLANT(S)	LEVEL OF INFESTATION	ASSOCIATED PEST PLANTS	DENSE RESIDENTIAL AREA?	ROAD MAINTENANCE DISTRICT	COMMENTS (IF ANY)
MT MADONNA RD	116	Italian Thistle	High	Poison-oak, Poison Hemlock, Periwinkle	No	D	
PAULSEN RD	118	Giant Reed	Low	Poison hemlock	No	D	MP 0.92-0.94 extends beyond road easement
AIRPORT BL	119	English Ivy	High	Cape Ivy	No	D	At bridge
AIRPORT BL	119	Cape Ivy	Medium	Himalayan Berry, Green Acacia	No	D	
AIRPORT BL	119	Green Acacia	Medium	Poison Hemlock, Cape Ivy, Poison Oak	No	D	
COLLEGE RD	120	English Ivy	High	Cape Ivy	No	D	
COLLEGE RD	120	Cape Ivy	Medium	Himalayan Berry, Green Acacia	No	D	
COLLEGE RD	120	Green Acacia	Medium	Poison Hemlock, Cape Ivy, Poison Oak	No	D	
CRESTWOOD DR	121	NA	NA	NA	Yes	D	
OXFORD DR	121	NA	NA	NA	Yes	D	
STRATFORD DR	121	NA	NA	NA	Yes	D	
LAKEVIEW RD	122	Poison Hemlock	Low	Poison Oak, Cape Ivy	No	D	Infestation toward agricultural field in lower section

Appendix F
Native Seed Lists and Pricing

Pacific Coast Seed INC.

Grasses
Fall 2006

Pacific Coast Seed is a full service seed company providing material for diverse applications including restoration, reclamation, revegetation, erosion control and ornamental landscaping.

We provide special collection and growing services – ask us to learn more.

Our work with private and public specifiers emphasizes the development of seeding programs that are practical, effective and affordable.

Pacific Coast Seed INC.

533 Hawthorne Pl
Livermore, CA 94551
Ph (925) 373-4417
FAX (925) 373-6855

info@pcseed.com

Trifolium wildenovii

WHOLESALE PRICE LIST
Fall 2006

LANDMARK MIX **$625/Ac**

#/Ac.	Species/Common Name - 36 Total Lbs.
12	Bromus carinatus/Native "Bay Area" California Brome
10	Elymus glaucus/ "Bay Area" Blue Wildrye
8	Hordeum californicum/California Barley
6	Leymus triticoides, Native/Native Creeping Wildrye

HABITAT MIX **$725/Ac**

#/Ac.	Species/Common Name - 40 Total Lbs.
10	Bromus carinatus/Native California Brome
8	Elymus glaucus/Blue Wildrye
8	Hordeum californicum/California Barley
5	Festuca idahoensis/Idaho Fescue
5	Nassella pulchra/Purple Needlegrass
4	Poa secunda/Native Pine Bluegrass

HERITAGE MIX **$1325/Ac**

#/Ac.	Species/Common Name - 40 Total Lbs.
12	Hordeum californicum/California Barley
9	Nassella pulchra/Purple Needlegrass
9	Nassella cernua/Nodding Needlegrass
6	Melica californica/California Oniongrass
4	Poa secunda/Native Pine Bluegrass

NATIVE ORNAMENTAL FINE FESCUE MIX **$1030/Ac**

#/Ac.	Species/Common Name - 70 Total Lbs.
30	Festuca rubra "Molate Blue"/Molate Blue Fescue
20	Festuca occidentalis/Western Fescue
20	Festuca idahoensis/Native Idaho Fescue

NATIVE EROSION CONTROL MIX **$490/Ac**

#/Ac.	Species/Common Name - 45 Total Lbs.
25	Bromus carinatus/California Brome
10	Hordeum brachyantherum/Meadow Barley
6	Vulpia microstachys/Three Weeks Fescue
4	Trifolium wildenovii/Tomcat Clover

Mixes for each of California's major floristic provinces are available on request. Often, we suggest additional flowers, forbs and shrubs for greater biodiverstity. **(Ask about ecotypes for Coastal, Valley, Foothill and Higher Elevation Mixes.)**

Nurse Crops: Add 4-6 Lbs. of Vulpia microstachys or 20 Lbs. of Regreen per acre to any of these regional mixes if erosion control is to be accomplished primarily through the growth of winter germinating plants.

Nitrogen Fixing Plants: Add 2 Lbs. Trifolium wildenovii and/or 3 Lbs. Lupinus bicolor per acre to provide native nitrogen fixing species for additional fertility and diversity.

Nutrition and Growth enhancers: Many sites benefit from 1000 lbs Biosol 7-2-3 organic fertilizer and 60 lbs of AM120 inoculant per acre.

CALIFORNIA NATIVE GRASSES, CLOVERS, AND LEGUMES

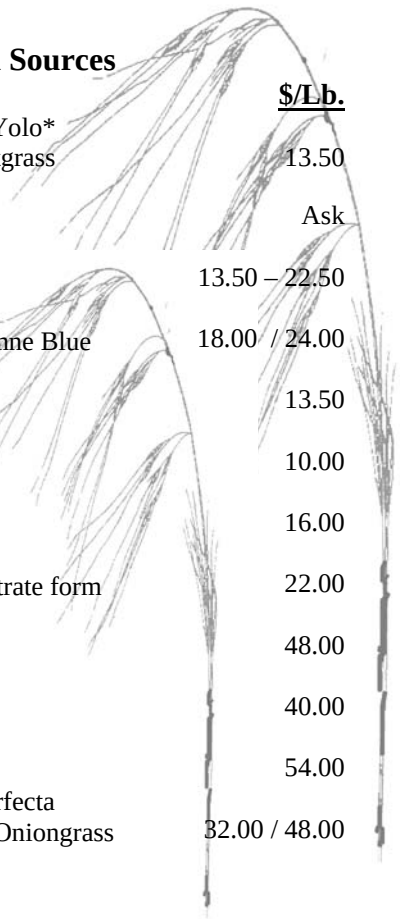
Custom mixes available – call for information

Ask us about collecting seed for you

All Grasses are Grown and /or Collected from California Sources

	$/Lb.
Achnatherum occidentalis	
Western Needlegrass	Ask
Agrostis exerata	
Native Spiked Bentgrass	48.00
Agrostis pallens	
Thingrass	40.00
Bromus carinatus*	
California Bromegrass	7.50
Bromus maritimus	
Maritime Brome	20.00
Danthonia californica	
California Oatgrass	80.00
Deschampsia caespitosa*	
Tufted Hairgrass	32.00
Deschampsia caespitosa var. holciformis	
California Hairgrass	36.00
Deschampsia elongatum	
Slender Hairgrass	24.00
Elymus elymoides*	
Bottlebrush Squirreltail	48.00
Elymus glaucus*	
Blue Wild Rye	9.50 – 18.00
Elymus multisetus	
Big Squirreltail	70.00

	$/Lb.
Elymus trachycaulum var. Yolo*	
California Slender Wheatgrass	13.50
Festuca californica	
California Fescue	Ask
Festuca idahoensis*	
Idaho Fescue	13.50 – 22.50
Festuca occidentalis*	
Western Fescue/Mokelumne Blue	18.00 / 24.00
Festuca rubra, Molate Blue	
Molate Blue Fescue	13.50
Festuca rubra, Molate	
Molate Red Fescue	10.00
Hordeum brachyantherum*	
Meadow Barley	16.00
Hordeum californicum	
California Barley & Prostrate form	22.00
Hordeum depressum	
Alkali Barley	48.00
Koeleria macrantha	
Junegrass	40.00
Leymus triticoides*	
Creeping Wild Rye, Rio	54.00
Melica californica/M. imperfecta	
California/Coast Range Oniongrass	32.00 / 48.00



***Multiple types available**

WHOLESALE PRICE LIST
FALL 2006

Native grasses continued

Muhlenbergia microsperma	
Littleseed Deergrass	36.00
Muhlenbergia rigens	
Deergrass	90.00
Nassella cernua	
Nodding Needlegrass	48.00
Nassella lepida	
Foothill Stipa	70.00
Nassella pulchra*	
Purple Needlegrass	40.00
Pleuropogon californica	
Annual Semaphoregrass	80.00
Poa secunda	
Pine Bluegrass	36.00
Vulpia microstachys	
Three Weeks Fescue	18.00

***Multiple types available**

Native Clovers and Legumes

Lotus purshianus – inoculated*	
Spanish Clover	64.00
Lotus scoparius – inoculated	
Deerweed	24.00
Lupinus spp– inoculated*	
Lupine (see flowers)	Ask
Trifolium gracilentum - inoculated	
Pinpoint Clover	40.00
Trifolium obtusiflorum – inoculated	
Creek Clover	40.00
Trifolium wildenovii – inoculated	
Tomcat Clover	40.00

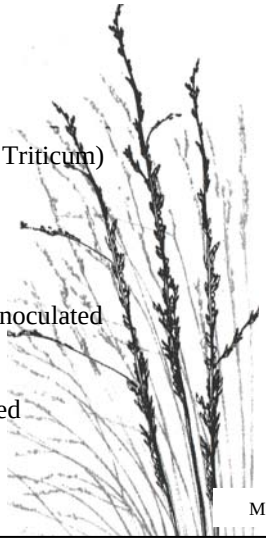
EROSION CONTROL / RECLAMATION/REVEGETATION GRASSES

	$/Lb.
Alkali grass, Puccinella distans, "Fults"	3.50
Annual Rye	.50
Wimmera	1.40
Barley, U.C. 603	.30
Bluegrass, Sherman	6.00
Bromegrass	
Blando	3.25
Cucamonga	5.50
Smooth	2.25
B**uffalograss**	11.50
Fescue	
Fawn, Tall	.95
Hard	1.95
Hard, Durar	2.40
Sheep	2.05
Sheep, Azay	2.50
Sheep, Covar	3.45
Zorro, Annual (Vulpia myuros)	5.50

	$/Lb.
Harding Grass	3.50
Oats, California Red	.45
Orchardgrass	
Berber	1.85
Paiute	2.25
Potomac	1.65
Rabbitsfoot grass,	36.00
Polypogon monspeliensis	
Rice Grass (Achnatherum hymenoides)	6.00
Ryegrass, Wimmera	1.65
Timothy	1.35
Wheatgrass	
Crested, Nordan	2.75
Intermediate, Oahe	3.25
Pubescent, Luna	3.75
Regreen (Elymus X Triticum)	5.00

RECLAMATION CLOVERS/LEGUMES

Alfalfa	Ask
Crimson Clover – inoculated	1.95
Bird's Foot Trefoil - inoculated	2.50
O'Connor's Strawberry Clover-inoc.	5.00
Red Clover, Kenland	2.75
Rose Clover – inoculated	4.00
Subterranean Clover, Inoculated	3.00
Vetch, Lana - Raw	1.35
Vetch, Purple - Raw	1.15
White Clover, Inoculated	3.50
Yellow Sweet Clover	2.95



Melica imperfecta

Broken bag charges: < 50 lbs. - $.75/bag, < 1 lb. - $2.00
Prices are F.O.B. Livermore, CA. **All prices are subject to change without notice.** A $40.00 processing fee will be applied to any orders less than $200.00. There will be a 15% restocking fee on any returned seed and applicable freight charges will be paid by customer.
All custom mixes or orders are final sales and non-returnable.

WHOLESALE PRICE LIST
FALL 2006

EROSION CONTROL MIXES***
(Non-irrigated)

Bay/Valley Single Season Protection	$/ACRE	Bay/Valley 1-3 Years Protection	$/ACRE
Gold Rush Blend (140 Lbs/acre)-medium rain Quick covering annual mix with crimson flowers in the spring.	$135	**Green to Gold Blend** (55 Lbs/acre)-Medium rain A mix of annual grasses and Rose and Sub Clovers. Excellent winter cover.	$205

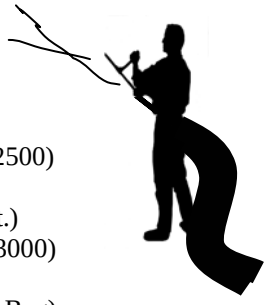
Contact us for temporary mixes designed for higher or lower rainfall environments.
Contact us for complete ABAG specifications on Temporary Erosion Control Mixes.

***Add 8 Lbs. per acre California Native Wildflower Mix……..$22.00/Lb.**
Add to any of the above mixes for additional color and diversity.

Santa Cruz Erosion (45-65 Lbs./acre) $3.00/Lb.
Annual erosion mix developed in the Santa Cruz mountain area.
** **with Wildflowers** $4.00/Lb.

EROSION CONTROL PRODUCTS
Ask about HydroStraw® Straw Mulch

Mulches & Amendments
Straw Mulch - HydroStraw
StrawNet
Recycled Paper – Envirofiber H-100
Nature's Own
Wood Fibers – Conwed
Bonded Fiber Matrix (BFM) –
Hydroblanket
(formerly C2500)
Stabilized Fiber Matrix –
EarthGuard (5 gal. bkt.)
Flexterra (formerly C3000)
Compost –
Mycorrhizal Inoculant –AM120 (20 Lb. Bag)



Binders & Fertilizers
Binder - M-Binder (50 Lb. Bag)
UltraTack (15 lb. Bucket)
Commercial Fertilizer
16-20-0, 6-20-20, others on request
All Natural Fertilizer
Biosol Mix 7-2-3 (55 Lb. Bag)
Biosol 6-1-3 (55 Lb. Bag)
Airtrol (Geobinder Gypsum)

LANDSCAPE MIXES

Partially Irrigated

Native Ornamental Fine Fescue Mix……..16.00
Native Ornamental Fine Fescue w/ WF ……...17.00
Fine-textured native grasses grow in best with supplemental irrigation. Once established, they provide cool season green year after year. Add Mostly Perennial Wildflowers for color.
70-82 Lbs./acre.

Non-Native Ornamental Fine Fescue Mix……2.95
More drought-tolerant, lower statured and slower to establish than Pacific Green Meadow. Great long-term, lower maintenance ground cover. 130-150 Lbs./acre.

Irrigated

Pacific Green Meadow……..…… 2.50
Pacific Green Meadow w/ Wildflowers…..…..….3.25
Produces a fine-textured meadow appearance.
150-200 Lbs./acre.

Neat and Low ……..…..…...5.25
Strawberry clover provides a dark green backdrop for Gazanias and other low growing flowers. 60-80 Lbs./acre

Kaleioscope of color.....…...…….....……29.25
Near solid stand of brilliant clumping Gazanias.
24-30 Lbs./acre.

PASTURE MIXES

Dryland Horse Pasture Mix…….…….....…..1.95
General Purpose Pasture Mix…….....…..2.20
Irrigated Horse Pasture Mix…….…….…....1.55
Irrigated General Purpose Mix.....1.75

Contact us for printed information and quotes

Pacific Coast Seed INC.

Flowers
Fall 2006

Pacific Coast Seed is a full service seed company providing material for diverse applications including restoration, reclamation, revegetation, ornamental landscaping and erosion control. We supply native California grass and wildflower seed, as well as specialty seed collection services for site-specific sources. Our work with private and public specifiers emphasizes the development of seeding programs that are practical, effective, and affordable.

Add broken bag charges of $.75/bag for less than 50 lbs. Add $2.00 to any species less than 1 lb. **All prices are F.O.B. Livermore, CA. Prices are subject to change without notice**. A $40.00 processing fee will be applied to any order under $200.00. A 20% restocking fee will be applied to any returned seed and applicable freight charges will be added.
Custom mixes are NON-returnable.

Pacific Coast Seed INC.

533 Hawthorne Place
Livermore, CA 94551
Ph#(925) 373-4417
Fax (925) 373-6855
info@pcseed.com

Gilia tricolor

WHOLESALE PRICE LIST
FALL 2006

CALIFORNIA WILDFLOWER SERIES
$22.00 per lb.

These mixtures of annual and perennial wildflowers can produce excellent color in a wide range of climates. They have low water requirements, grow 1 to 3 feet tall and may be sown alone or in conjunction with selected grasses.
Recommended seeding rate: 10 to 15 lbs. per acre.

Eschscholzia californica

California Native Wildflower Mix

Clarkia amoena

Achillea millefolium	White Yarrow
Clarkia elegans	Elegant Clarkia
Collinsia heterophylla	Chinese Houses
Eschscholzia californica	California Poppy
Gilia capitata	Globe Gilia
Lasthenia glabrata	Goldfields
Layia platyglossa	Tidy Tips
Linum lewisii	Blue Flax
Lupinus microcarpus “Ed Gedling”	Golden Lupine
Lupinus succulentus	Arroyo Lupine
Nemophila menziesii	Baby Blue Eyes
Phacelia campanularia	California Blue Bells
Triphysaria versicolor	Yellow Owl’s Clover

California Coastal Wildflower Mix

Achillea millefolium	White Yarrow
Elegans clarkia	Elegant Farewell to Spring
Collinsia heterophylla	Chinese Houses
Coreopsis lanceolata	Lance-leaf Coreopsis
Eschscholzia californica	California Poppy
Gilia capitata	Globe Gilia
Layia platyglossa	Tidy Tips
Linum grandiflorum var. rubrum	Scarlet Flax
Linum lewisii	Blue Flax
Lobularia maritima	Sweet Alyssum
Lupinus bicolor	Pigmy-leaf Lupine
Lupinus succulentus	Arroyo Lupine
Oenothera hookerii	Cal. Evening Primrose
Papaver rhoeas	Flanders Poppy

California Bay Area Wildflower Mix

Achillea millefolium	White Yarrow
Centaurea cyanus	Dwarf Cornflower
Cheiranthus allionii	Wallflower
Clarkia elegans	Elegant Clarkia
Collinsia heterophylla	Chinese Houses
Eschscholzia californica	California Poppy
Gilia capitata	Globe Gilia
Gypsophila muralis	Baby’s Breath
Layia platyglossa	Tidy Tips
Linaria maroccana	Toadflax
Linum grandiflorum var. rubrum	Scarlet Flax
Lupinus microcarpus “Ed Gedling”	Golden Lupine
Lupinus succulentus	Arroyo Lupine
Nemophila menziesii	Baby Blue Eyes

California Central Valley Wildflower Mix

Achillea millefolium	White Yarrow
Centaurea cyanus	Dwarf Cornflower
Clarkia elegans	Elegant Clarkia
Eschscholzia californica	California Poppy
Gilia capitata	Globe Gilia
Linum grandiflorum var. rubrum	Scarlet Flax
Linum lewisii	Blue Flax
Lobularia maritima	Sweet Alyssum
Lupinus succulentus	Arroyo Lupine
Nemophila maculata	Five Spot
Nemophila menziesii	Baby Blue Eyes
Papaver rhoeas	Flanders Poppy
Phacelia campanularia	California Blue Bells
Rudbeckia hirta	Black-eyed Susan
Triphysaria versicolor	Yellow Owl’s Clover

Sierra Wildflower Mix

Achillea millefolium	White Yarrow
Camassia quamash	Common Camas
Cheiranthus allionii	Wallflower
Chrysanthemum leucanthemum	Ox-eye Daisy
Eriogonum umbellatum	Sulphur Buckwheat
Eschscholzia californica	California Poppy
Gaillardia aristata	Blanketflower
Gilia capitata	Globe Gilia
Linum grandiflorum var. rubrum	Scarlet Flax
Linum lewisii	Blue Flax
Lupinus perennis	Perennial Lupine
Penstemon strictus	Mountain Penstemon
Rudbeckia hirta	Black-eyed Susan
Wyethia mollis	Mule’s Ears

Wholesale Price List Fall 2006

Wild and Garden Flowers, Forbs, and Shrubs

Genus Species, Common Name	$/Bulk Lb.
Abronia maritima, Sand Verbena	70.00
Achillea millefolium, Cerise Queen	110.00
Achillea millefolium, White Yarrow	15.00
Achillea millefolium v. lanulosa, Native Yarrow	36.00
Achyrachaena mollis, Blow Wives	90.00
Adenostoma fasciculatum, Chamise	36.00
Allenrolfea occidentalis, Iodine Bush	48.00
Ambrosia psilostachya, Western Ragweed	48.00
Amsinkia menziesii, Common Fiddleneck	45.00
Ammi majus, Queen Anne's Lace, Bishop's Flower	24.00
Anemopsis californica, Yerba Mansa	60.00
Arctostaphylos nevadensis, Pinemat Manzanita**	Ask
Arctostaphylos patula, Green-leaved Manzanita **	48.00
Arctostaphylos viscida, White-leaved Manzanita**	30.00
Artemisia californica, California Sagebrush	30.00
Artemisia douglasiana, Mugwort	48.00
Artemisia pycnocephala, Dune Sagebrush	90.00
Artemisia tridentata, Big Sagebrush	9.50
Artemisia tridentata var. vaseyana, Desert Sage	15.00
Asclepias fasciculatum, Western Milkweed	Ask
Aster chilensis, Common California Aster	90.00
Atriplex lentiformis brewerii, Quail Bush	12.00
Atriplex patula var.hasta, Fat Hen	75.00
Baccharis douglasii, Douglas Baccharis	70.00
Baccharis pilularis, Chapparal Broom/Coyote-Brush	19.50
Baccharis salicifolia, Mule's-Fat	60.00
Bellis perennis, White English Daisy	Ask
Calendula officinalis, Calendula	9.00
Camassia quamash, Common Camus	60.00
Cammisonia cheiranthifolia, Beach Primrose	60.00
Carex barbarae	95.00
Carex nebraskensis	120.00
Carex obnupta, Slough Sedge	120.00
Carex praegracilis, Deer-Bed Sedge	135.00
Carex tumulicola, Foothill Sedge	90.00
Castilleja exserta (Orthocarpus), Owl's Clover	120.00
Ceanothus cordulatus, Snowbrush	95.00
Ceanothus cuneatus, Buckbrush	80.00
Ceanothus integerrimus, Deerbrush	95.00
Ceanothus velutinus, Tobacco Brush	60.00
Centaurea cyanus, Cornflower/Bachelor's Button	7.50
Cercis occidentalis, Western Redbud	48.00
Cercocarpus ledifolius, Desert Mountain Mahogany	36.00
Cheiranthus allionii, Wallflower	15.00
Chrysanthemum leucanthemum, Ox-eye Daisy	22.00
Chrysanthemum maximum, Shasta Daisy	22.00
Chrysothamnus nauseosus, Rabbitbrush*	9.00
Cistus creticus, Rock Rose	48.00
Clarkia amoena, Farewell-to-Spring	25.00
Clarkia bottae, Showy Clarkia	65.00
Clarkia elegans, Mountain Garland	24.00
Clarkia purpurea, Purple Clarkia	56.00
Collinsia heterophylla, Chinese Houses	22.00
Coreopsis lanceolata, Lance-leaf Coreopsis	22.00
Coreopsis tinctoria, Plains Coreopsis (Tickseed)	22.00
Cressa truxillensis, Alkali Weed	85.00
Cyperus eragrastis, Tall Cyperus	90.00

Genus Species, Common Name	$/Bulk Lb.
Dimorphotheca sinuata (aurauntiaca), African Daisy	21.00
Downingia pulchella, Dwarf Downingia	90.00
Echinacea purpurea, Purple Prairie Coneflower	24.00
Eleocharis macrostachya, Spikerush	225.00
Epilobium ciliatum, Fireweed (Willowherb)	90.00
Eremocarpus setigerus, Turkey Mullein	Ask
Ericameria ericoides, Goldenbush	65.00
Eriodictyon californicum, California Yerba Santa	70.00
Eriogonum arborescens, Island Buckwheat	48.00
Eriogonum fasciculatum, California Buckwheat*	6.00
Eriogonum latifolia, Coast Buckwheat	48.00
Eriogonum nudum, Naked Buckwheat	60.00
Eriogonum parvifolium, Sea Cliff Buckwheat	40.00
Eriogonum umbellatum, Sulphur Buckwheat	48.00
Eriophyllum confertiflorum, Golden Yarrow	48.00
Eriophyllum lanatum, Wooly Yarrow	56.00
Eriophyllum staechadifolium, Coast Gold Yarrow	54.00
Eryngium vaseyi, Button-Celery	48.00
Eschscholzia caespitosa, Dwarf California Poppy	48.00
Eschscholzia californica, California Poppy*	15.00
Eschscholzia cal. var. maritima, Coastal Poppy	48.00
Eschscholzia californica , "Red", Red Calif. Poppy	36.00
Euthamia occidentalis. Western Goldenrod	95.00
Frankenia salina, Alkali Heath	54.00
Gaillardia aristata/pulchella, Blanketflower/Indian	24.00
Gazania splendens, Dwarf Gazania	75.00
Gazania splendens, Gazania Mixed Colors	30.00
Gazania splendens, Red Shades	56.00
Gilia capitata, Globe Gilia	24.00
Gilia tricolor, Bird's Eyes	24.00
Gnapthalium canescens, Green Everlasting	80.00
Grindelia camphorum, Valley Gumweed	24.00
Grindelia hirsutula var. hirsutula, Hairy Gumplant	54.00
Grindelia strictus var. platyphyla, Pacific Gumplant	65.00
Gypsophila muralis, Baby's Breath	7.50
Heliotropium curassavicum, Chinese Pusley	60.00
Hemizonia pungens, Tarweed (Common Spikeweed)	65.00
Heteromeles arbutifolia, Toyon Christmas Berry**	13.50
Heterotheca grandiflora, Telegraph Weed	48.00
Iberis umbellatum, Globe Candytuft	18.00
Iris douglasiana, Douglas Iris	120.00
Iva hayesiana, Poverty Weed	48.00
Juncus balticus, Wire Rush	150.00
Juncus bufonius, Toad Rush	125.00
Juncus effusus, Pacific Rush	110.00
Juncus occidentalis, Round-fruited Toad Rush	150.00
Juncus patens, Spreading Rush	125.00
Juncus xiphoides, Ivy-leaved Rush	Ask
Lasthenia californica, Dwarf Goldfields	48.00
Lasthenia ferrisiae, Ferris Goldfields	90.00
Lasthenia glabrata, Goldfields	40.00
Layia glandulosa, Valley Tidy Tips	96.00
Layia platyglossa, Tidy Tips	60.00
Limonium californicum, Marsh Rosemary	40.00
Linanthus grandiflorus, Mountain Phlox	65.00
Linaria maroccana, Toadflax (Baby Snapdragon)	28.00
Linum grandiflorum var. rubrum, Scarlet Flax	18.00

Wild and Garden Flowers, Forbs, Shrubs and Trees 2006 (continued)

Linum lewisii, Blue Flax	Ask
Lobularia (Alyssum) maritima, Sweet Alyssum	16.00
Lobularia (Alyssum) maritima, Carpet of Snow	22.00
Lobularia (Alyssum) maritima, Royal Carpet	48.00
Lotus crassifolius, Buck Lotus	75.00
Lotus purshianas, inoc., Spanish Clover	64.00
Lotus scoparius, Deerweed	24.00
Lupinus albicaulus, Sickle Keeled Lupine	18.00
Lupinus andersonii, Anderson's Lupine	60.00
Lupinus arboreus, Yellow Tree Lupine	32.00
Lupinus argenteus, (caudatus) Silverleaf Lupine	80.00
Lupinus benthamii, Spider Lupine	75.00
Lupinus bicolor, Pigmy-leaf Lupine	36.00
Lupinus formosus, Summer Lupine	60.00
Lupinus fulcratus, Lupine sp.	90.00
Lupinus lepidus, Sierra Lupine	Ask
Lupinus littoralis, Blue Coastal Lupine	40.00
Lupinus microcarpus densiflorus, Golden Lupine	24.00
Lupinus micro. var microcarpus, Blue Chick Lupine	48.00
Lupinus nanus, Sky Lupine (native sources) – inoc.	36.00
Lupinus perennis, Sundial Lupine	18.00
Lupinus succulentus, Arroyo Lupine	12.00
Mimulus aurantiacus, Sticky Monkeyflower	36.00
Mimulus guttatus, Seep Monkeyflower	95.00
Myosotis sylvatica, Forget-me-not	85.00
Nemophila maculata, Five Spot	24.00
Nemophila menziesii, Baby Blue Eyes	24.00
Oenothera hookerii, California Evening Primrose	12.00
Oenothera speciosa, Mexican Evening Primrose	48.00
Paeonia californica, California Peony	75.00
Papaver rhoeas, Flanders Poppy/Red	22.00
Papaver rhoeas, Shirley/Mixed	20.00
Penstemon strictus 'Bandera', Rocky Mtn.	Ask
Penstemon newberryii, Mountain Pride Beardtongue	Ask
Phacelia campanularia, California Blue Bells	22.00
Phacelia tanacetifolia, Lacy-leaved Phacelia	9.50
Plantago erecta, Erect Plantain	36.00
Plantago insularis, Plantain	3.50
Platystemon californicus, California Creamcups	90.00
Polygonum puntatum, Water Smartweed	85.00
Potentilla gracilis, Slender Cinquefoil	40.00
Prunus andersonii, Desert Peach	Ask
Purshia tridentata, Antelope Brush	24.00
Ranunculus californicus, California Buttercup	190.00
Rhamnus californica, Coffeeberry	48.00
Rorippa nasturtium-aquaticum, Watercress	125.00
Rosa californica, California Wild Rose	90.00
Rudbeckia hirta, Black-eyed Susan	22.00
Salicornia virginica, Pickleweed	85.00
Salvia mellifera, Black Sage*	36.00
Salvia sonomensis, Sonoma Sage	72.00
Sambucus mexicana, Mexican Blue Elderberries	40.00
Scirpus acutus, Hardstem Bulrush/Giant Tule	40.00
Scirpus americanus, Three-Square Bulrush	60.00
Scirpus maritimus, Alkali Bulrush	60.00
Scirpus robusta, Bulrush	40.00
Scrophularia californica, Figwort	Ask
Sisyrinchium bellum, Blue-eyed Grass	75.00
Sisyrinchium californicum, Yellow-eyed Grass	145.00
Thymus serphyllum, Creeping Thyme	Ask
Tropaeolum majus, Nasturtium Dwarf Jewel Mixed	9.00
Triphysaria eriantha, Butter & Eggs/Johnny Tuck	175.00
Triphysaria versicolor, Yellow Owl's Clover	75.00
Typha angustifolia, Narrow-leaved Cattail	80.00
Typha latifolia, Broad-leaved Cattail	60.00
Wyethia angustifolia, Narrow-leaved Mule's Ears	90.00
Wyethia mollis, Wooly Mule's Ears	48.00

*Several Types Available **Dried Berries

Other Specialty Wildflower Mixes

Bulb Blanket Garden & Wildflower Mix	$22.00/lb
California Field Flowers	$15.00/lb
Camino del Flores Wildflower Mix (Roadside Mix)	$17.50/lb
Garden Favorites Wildflower Mix	$15.00/lb
Low Profile Wildflower Mix	$24.00/lb
Mostly Perennial Wildflower Mix	$25.00/lb
Shady Wildflower Mix	$22.00/lb
Spring Fever Wildflower Mix	$21.00/lb

Recommended Rate: 15-18 lbs/acre
Please call for further information .

PLANT NAME	Common Name	1G		NOTES	5G		NOTES
GENUS AND SPECIES	CULTIVAR/COMMON	QTY	PRICE		QTY	PRICE	
Acer negundo var. californicum	California Box Elder	1	$9.95		13	$24.95	
Achillea	'Sonoma Coast'	4	$8.45				
Achillea	'Judity'	110	$8.45				
Achillea	'Heidi'	96	$8.45	blooming			
Achillea	'Apple Blossom'	128	$8.45	blooming			
Achillea	'Lilac Beauty'	100	$8.45				
Achillea millefolium	'La Luna'	4	$8.45				
Achillea millefolium	'Salmon Beauty'	40	$8.45	blooming			
Achillea millefolium	'Island Pink'	150	$4.25	blooming			
Achillea millefolium	Yarrow	200	$8.45	blooming			
Achillea tomentosa	Wooly Yarrow	40	$3.99	on SALE			
Acorus gramineus	'Ogon'	10	$7.95				
Aesculus californica	California Buckeye				33	$24.95	
Arctostaphylos	'Winterglow'	15	$8.95				
Arctostaphylos	'John dourley'	48	$8.95				
Arctostaphylos	'Pacific Mist'	45	$8.95		8	$24.95	
Arctostaphylos	'Emerald Carpet'	275	$8.95				
Arctostaphylos	'White Lanterns'				24	$24.95	
Arctostaphylos bakeri	'Louis Edmunds'	30	$8.95				
Arctostaphylos densiflora	'Sentinel'	60	$8.95				
Arctostaphylos densiflora	'Howard McMinn'	135	$8.95				
Arctostaphylos edmundsii	'Carmel Sur'	80	$8.95				
Arctostaphylos edmundsii	'Rosy Dawn'	117	$8.95				
Arctostaphylos hookeri	'Fiesta Way'	18	$8.95				
Arctostaphylos hookeri	'Monterey Carpet'	26	$8.95				
Arctostaphylos manzanita	'Dr. Hurd'	9	$8.95				
Arctostaphylos pumila	sandmat manzanita	33	$8.95				
Arctostaphylos rudis	'Vandenberg'	80	$8.95		15	$24.95	
Arctostaphylos uva-ursi	'Point Reyes'	4	$8.95				
Armeria maritima	Sea thrift	12	$8.95	blooming			
Artemisia	'Powis Castle'	12	$3.99	on SALE			
Artemisia californica	Calif. Sagebrush	88	$8.95				
Artemisia douglasiana	Mugwort	30	$3.99	on SALE			
Asarum caudatum	Wild Ginger	160	$8.95				
Asclepias speciosa	Showy Milkweed	18	$8.95				
Aster chilensis	'Purple Haze'	18	$8.45	blooming			
Aster chilensis	California Aster	35	$8.45				
Baccharis pilularis	Coyote Brush	42	$8.95				
Baccharis pilularis	'Pigeon Point'	220	$8.95				
Baccharis pilularis var. consangu	Upright Coyote Brush	45	$8.95				
Baumea rubiginosa	'Variegata'	7	$7.95				
Berberis aquifolium	'Compacta'				5	$24.95	
Berberis aquifolium	Oregon Grape				7	$24.95	small
Blechnum spicant	Deer fern	30	$9.95				
Bouteloua gracilis	Eyelash grass	95	$7.95				
Calamagrostis acutifolia	'Overdam'	83	$2.50	ON SALE			
Calamagrostis foliosa	Leafy Reed Grass	128	$7.95	blooming			
Calycanthus occidentalis	Spice Bush	22	$9.95				
Carex albula	Frosty Curls Sedge	67	$7.95				
Carex Barbarae	Santa Barbara Sedge	52	$7.95				
Carex dipsacea	Autumn sedge	39	$7.95				
Carex flagellifera	New Zealand Sedge	59	$7.95				
Carex pansa	Dune sedge	648	$3.99	on SALE			
Carex praegracilis	Meadow Sedge	98	$7.95				

PLANT NAME	Common Name	1G		NOTES	5G		NOTES
GENUS AND SPECIES	CULTIVAR/COMMON	QTY	PRICE		QTY	PRICE	
Carex spissa	San Diego Sedge	40	$7.95				
Carex testacea	'Coman's Bronze'	35	$7.95				
Carex testacea	Orange New Zealand Sedg	52	$7.95				
Carpenteria californica	'Elizabeth'	9	$10.95		35	$29.95	blooming
Ceanothus	'Concha'	100	$8.95				
Ceanothus	'Julia Phelps'	180	$8.95				
Ceanothus	'Ray Hartman'				54	$24.95	
Ceanothus	'Owlswood Blue'	4	$8.95		7	$24.95	
Ceanothus	'Joyce Coulter'	9	$8.95				
Ceanothus	'Joan Mirov'	20	$3.99	on SALE			
Ceanothus	'Dark Star'	75	$8.95				
Ceanothus	'Frosty Blue'				30	$24.95	
Ceanothus gloriosus v. exaltatus	'Emily Brown'	10	$8.95		10	$24.95	
Ceanothus gloriosus v. porrectus	Mt. Vision Ceanothus	44	$8.95				
Ceanothus griseus	'Kurt Zadnik'	12	$8.95				
Ceanothus griseus horizontalis	'Yankee Point'	230	$8.95		1	$24.95	
Ceanothus rigidus	'Snowball'	9	$8.95				
Ceanothus thyrsiflorus	Blue Blossom	31	$8.95		113	$24.95	
Ceanothus thyrsiflorus	'Skylark'	70	$8.95	blooming			
Ceanothus thyrsiflorus	'Arroyo de la Cruz'				1	$24.95	
Ceanothus thyrsiflorus	'Snow Flurry'				23	$24.95	blooming
Ceonothus gloriosus	'Heart's Desire'	31	$8.95				
Cephalanthus occidentalis var. c	California Button Willow				2	$24.95	
Cornus sericea ssp. sericea	'Flaviramea'	2	$8.95				
Cornus sericea ssp. sericea	American Dogwood	53	$8.95				
Cornus stolonifera (sericea)	Redtwig dogwood	48	$8.95				
Corylus cornuta var. californica	California Hazelnut	25	$9.95				
Deschampsia c. holciformis	'Jughandle'	46	$7.95				
Deschampsia cespitosa ssp. ces	Tufted hair grass	108	$7.95				
Deschampsia cespitosa ssp. ces	'Marin'	156	$7.95				
Dicentra formosa	'Sweetheart'	4	$8.45				
Dicentra formosa	Western Bleedin Heart	16	$8.45				
Dudleya cymosa	Canyon Dudleya	3	$9.95				
Echium fastuosum	Pride of Madeira	35	$9.95	young			
Encelia californica	'El Dorado'	10	$8.45				
Epilobium	'Sierra Salmon'	100	$8.45				
Epilobium canum	'Wayne's Silver	100	$8.45				
Epilobium canum	'Catalina'	30	$8.45				
Epilobium septentrionale	'Select Mattole'	125	$8.45				
Equisetum hyemale ssp. affine	Horsetail	12	$8.95				
Equisetum scirpoides	Dwarf Scouring Rush	11	$8.95				
Eragrostis spectabilis	Lovegrass	26	$6.95				
Erigeron glaucus	'Sea Breeze'	13	$8.45	blooming			
Erigeron glaucus	Seaside Daisy	36	$8.45	blooming			
Erigonum aborescens	Santa Cruz Island Buckwh	31	$8.95				
Eriogonum giganteum	St. Catherine's Lace				5	$21.95	
Eriogonum latifolium	Coast Buckwheat	91	$8.95				
Eriogonum parvifolium	Small-leaved Buckwheat	5	$8.95				
Festuca	'Siskiyou Blue'	519	$7.95				
Festuca californica	California Fescue	176	$7.95				
Festuca cinerea	'Elijah Blue'	8	$7.95				
Festuca idahoensis	Idaho Fescue	11	$7.95				
Festuca idahoensis	'Stony Creek'	32	$7.95				
Festuca occidentalis	Western Fescue	21	$2.50	On Sale			

PLANT NAME	Common Name	1G		NOTES	5G		NOTES
GENUS AND SPECIES	CULTIVAR/COMMON	QTY	PRICE		QTY	PRICE	
Festuca rubra	Red Fescue	12	$7.95				
Festuca rubra	'Jughandle'	161	$7.95				
Fragaria vesca	Wood Strawberry	16	$8.45				
Gaura lindheimeri	'Siskiyou Pink'	11	$8.45				
Heteromeles arbutifolia	Toyon	100	$10.95		1	$31.95	
Heteromeles arbutifolia	'Davis Gold'				11	$31.95	
Heterotheca villosa	'San Bruno Mtn.'	40	$8.45	blooming			
Heuchera	'Canyon Pink'	13	$8.45				
Heuchera	'Susanna'	11	$8.45	blooming			
Heuchera	'Wendy'	5	$8.45	blooming			
Heuchera	'Santa Ana Cardinal'	42	$8.45	blooming			
Heuchera cylindrica	'Greenfinch'	40	$8.45				
Heuchera hirsutissima	Shaggy-Haired Alumroot	17	$8.45				
Heuchera maxima	Alumroot	88	$8.45				
Heuchera micrantha	Small-flowered Alumroot	165	$8.45	blooming			
Heuchera sanguineum	'Cherry Bells'	5	$8.45	blooming			
Iris douglasiana	'Canyon Snow'	30	$9.95	blooming			
Iris douglasiana	Douglas Iris	220	$9.95	blooming			
Iris microsiphon	'Mt. Madonna'	30	$9.95	young			
Iris PCH	orange	5	$9.95	blooming			
Juncus	'Carmen's Japanese'	126	$8.95				
Juncus balticus	Baltic Rush	570	$3.99	on SALE			
Juncus effusus	'Spiralis'	9	$8.95				
Juncus effusus var. Pacificus	'Quartz Creek'	210	$8.95				
Juncus effusus var. Brunneus	Rush	30	$8.95				
Juncus patens	'Elk Blue'	150	$3.99	on SALE			
Juncus patens	Rush	140	$8.95				
Juncus xiphoides	Rush	36	$8.95				
Leymus condensatus	'Canyon Prince'	151	$7.95				
Leymus mollis	Wild Rye	46	$2.50	ON SALE!			
Leymus triticoides	Creeping Wild Rye	175	$2.50	ON SALE!			
Lilium pardalinum	Leopard Lily	4	$8.95	blooming			
Lobelia cardinalis	Scarlet Lobelia	74	$8.45				
Lobelia dunnii var. serrata	Dunn's Lobelia	20	$8.45				
Lonicera hispidula var. vacilans	Chaparral Honeysuckle	35	$8.95				
Lupinus densiflorus aureus	Golden Lupine	80	$3.99	on SALE			
Lupinus succulentus	Arroyo Lupine	40	$2.50	on SALE			
Malacothamnus fasciculatus	Bush Mallow				4	$24.95	
Mimlus moschatus	Musk Monkeyflower	30	$8.95	blooming			
Mimulus	'Alexandra'	2	$8.95	blooming			
Mimulus	'Eleanor'	75	$8.95	blooming			
Mimulus	'Trish'	6	$8.95	blooming			
Mimulus aurantiacus	Sticky Monkeyflower	190	$8.95	blooming			
Mimulus puniceus	Red Monkey Flower	40	$8.95	blooming			
Muhlenbergia rigens	Deer Grass	740	$3.99	on SALE			
Myrica californica	Pacific Wax Myrtle	160	$8.95		25	$24.95	
Nolina macrocarpa	Bear Grass	1	$8.95				
Oenothera speciosa var. berland	Mexican Evening Primrose	50	$8.45				
Pennisetum setaceum	'Cupreum'	33	$7.95				
Penstemon barbatus x strictus	'Prairie Dusk'	15	$8.45	blooming			
Penstemon heterophyllus	Foothill Penstemon	8	$8.45				
Penstemon heterophyllus	'Margarita BOP'	34	$8.45	young			
Penstemon heterophyllus	'Blue Springs'	60	$8.45	young			
Penstemon newberryi	Mountain Pride	16	$8.45				

PLANT NAME	Common Name	1G		NOTES	5G		NOTES
GENUS AND SPECIES	CULTIVAR/COMMON	QTY	PRICE		QTY	PRICE	
Penstemon rydbergii	Meadow Penstemon	20	$8.45	blooming			
Philadelphus lewisii	Mock Orange				44	$26.95	
Phormium	'Surfer Boy'	29	$8.95				
Phormium sp.		15	$8.95				
Physocarpus capitatus	Ninebark				1	$24.95	
Pinus ponderosa	Ponderosa pine	25	$9.95	treepot			
Prunus ilicifolia ssp. ilicifolia	Holly-Leafed Cherry	50	$8.95		5	$24.95	
Ranunculus californica	California Buttercups	3	$8.45	blooming			
Rhamnus californica	Coffeeberry	25	$8.95				
Rhamnus californica	'Mound San Bruno'	200	$8.95				
Rhamnus californica	'Eve Case'	500	$8.95				
Rhamnus californica	'Seaview'				5	$24.95	
Rhus integrifolia	Lemonade Berry	22	$9.95				
Ribes aureum	Golden Currant	100	$8.95				
Ribes indecorum	White Flowered Currant				2	$24.95	
Ribes malvaceum	Chaparral Current				5	$24.95	
Rosa californica	California Wild Rose				1	$15.95	
Rubus spectabilis	Salmon Berry	150	$3.99	on SALE	4	$24.95	
Rubus ursinus	California Blackberry	100	$8.95				
Salix lasiolepsis	Arroyo Willow	2	$15.95	2 GAL	1	$24.94	
Salvia	'Pacific Blue'	45	$8.95	young			
Salvia	'Dara's Choice'	308	$8.95	blooming	2	$21.95	
Salvia	'Bee's Bliss'	63	$8.95				
Salvia	Whirly Blue'	46	$8.95	young			
Salvia clevelandii	'Aromas'	73	$8.95				
Salvia leucophylla	Purple sage	7	$4.00	ON SALE			
Salvia mellifera	Black Sage	30	$8.95				
Salvia microphylla	'UCB Pink'	14	$8.95	blooming			
Salvia munzii	Munz's Sage				2	$21.95	
Sambucus mexicana	Blue Elderberry	100	$8.95				
Sedum spurium	'Red Carpet'	5	$8.95				
Sedum spurium	'Pink Jewel'	4	$8.95				
Sequoia sempervirens	'Soquel'				6	$24.95	
Sisyrinchium	'California Skies'	19	$8.45	blooming			
Sisyrinchium bellum	Blue eyed grass	18	$8.45	blooming			
Sisyrinchium bellum	'Blue Ice'	30	$8.45	blooming			
Sisyrinchium bellum	'Nanum'	64	$2.50	On Sale			
Sisyrinchium californicum	Yellow-Eyed Grass	5	$8.45	blooming			
Sisyrinchium californicum	'Yellowstone'	9	$8.45	blooming			
Solidago californica	California Goldenrod	10	$8.45	buds			
Symphoricarpos albus var.	Snowberry	100	$8.95				
Symphoricarpos albus var. laevi	Snowberry	20	$8.95				
Symphoricarpos x doorenbossi	Doorenbos Hybrid	48	$8.45				
Tellimia grandiflora	Fringe Cups	30	$8.45				
Tiarella trifoliata unifoliata	Sugar Scoops	34	$8.45				
Trichostema lanatum	Woolly Blue Curls	1	$9.95	blooming			
Typha Angustifolia	Narrow-leaved Cattail	3	$8.95		6	$24.95	
Umbellularia californica	California Bay Laurel				41	$24.95	
Vancouveria hexandra	Inside-out Flower	6	$8.95				
Viola glabella	Stream Violet	3	$8.45				
Vitis californica	California Grape	48	$8.95				
Woodwardia fimbriata	Giant Chain Fern				16	$29.95	
Yucca biccata	Banana Yucca				4	$24.95	

PLANT NAME	Common Name	1G		NOTES	5G		NOTES
GENUS AND SPECIES	CULTIVAR/COMMON	QTY	PRICE		QTY	PRICE	
Yucca whipplei	Our Lord's Candle	3	$9.95				

4" POTS		4"			
Achillea millefolium	Yarrow	32	$2.50	on SALE	
Armeria maritima	'Victor Reiter'	6	$3.95		
Calamagrostis foliosa	Leafy Reed Grass	200	$3.95		
Carex testacea	'Coman's Bronze'	10	$3.95		
Clarkia amoena	'Aura'	12	$3.95	blooming	
Clarkia amoena	'Gloria'	5	$3.95		
Clarkia amoena	'Whitney'	32	$3.95		
Clarkia speciosa	'Immaculata'	32	$3.95		
Claytonia sibirica	'Candyflower'	32	$3.95	blooming	
Deschampsia cespitosa ssp. ces	Tufted hair grass	96	$3.95		
Dichondra donelliana	Pony's Foot	58	$3.95		
Equisetum scirpoides	Dwarf Scouring Rush	40	$3.95		
Eschscholzia californica	'Alba'	14	$3.95		
Eschscholzia californica	'Rose Chiffron'	16	$3.95		
Eschscholzia californica	'Red Chief'	14	$3.95	blooming	
Eschscholzia californica	'Purple Gleam'	16	$3.95	blooming	
Eschscholzia californica var. ma	Coastal poppy	16	$3.95	blooming	
Festuca californica	California Fescue	736	$2.50	on SALE	
Festuca occidentalis	Western Fescue	300	$3.95		
Festuca rubra	Red Fescue	200	$3.95		
Fragaria chiloensis	'Aulon'	23	$3.95		
Fragaria vesca	Wood Strawberry	68	$3.95	fruits	
Gilia capitata	'Blue Thimble Flower'	16	$3.95	blooming	
Helianthus annus	Sunflower	8	$3.95		
Koeleria macrantha	June Grass	300	$3.95		
Juncus balticus	Baltic Rush	160	$3.95		
Lobelia dunnii var. serrata	Dunn's Lobelia	120	$2.50	on SALE	
Mimulus moschatus	Musk Monkeyflower	85	$3.95		
Platystemon californicus	'Cream Cups'	32	$3.95	blooming	
Prunella vulgaris var. lanceolata	'Self-Heal'	34	$3.95		
Ranunculus californica	Buttercup	32	$3.95	blooming	
Satureja douglasii	Yerba buena	21	$3.95		
Sedum spathulifolium purpureum		235	$3.95		
Sedum album	'Coral Carpet'	22	$3.95		
Sedum spathulifolium	'Cape Blanco'	378	$3.95		
Sedum spurium	'Pink Jewel'	9	$3.95		
Sisyrinchium	'Blue Ice'	12	$3.95	blooming	

15 GALLONS		15 G			
Cornus sericea ssp. sericea	American Dogwood	1	$99.95		
Carpenteria californica	'Elizabeth'	18	$45.00	on SALE	

To have this list emailed, send a message to:
nativerevival@sbcglobal.net

Call us if you have questions. Thanks!

on the web at www.nativerevival.com

2600 Mar Vista Drive Aptos, CA 95003 Phone/Fax 831-684-1811
Tues-Fri 8:30-5:00, Sat 10:00-4:00, Sun 10:00-4:00

SALES REP LIST

ROSENDALE NURSERY

July 2, 2007

Availability List

Abbreviation notes: Evrg = evergreen, Decd = deciduous, Sdec = semi-deciduous; Pe = perennial, Gr = grass or grass-like, Sh = shrub, Tr = tree, Vi = vine, Fe = fern, Su = succulent, Bi = biennial, An = annual, » = California native

		DESCRIPTION			FLOWER COLOR		1 gal	$	5 gal	$
Achillea 'Terracotta'		Sdec	Pe	2' x 2-3'	Rusty gold	**Bud**	**150**	3.55		11.25
Achillea millefolium 'Salmon Beauty'		Sdec	Pe	1-2'	Salmon	**Blm**	**80**	3.55		11.25
Achillea clavennae		Evgr	Pe	To 1'	White		**80**	3.55		11.25
Achillea millefolium 'Summerwine'		Sdec	Pe	2' x 2-3'	Burgundy	**Bud**	**80**	3.55		11.25
Achillea x kellereri		Evgr	Pe	1' x 1-2'	White	**Blm**	**20**	3.55		11.25
Adenophora latifolia		Decd	Pe	2'	Purple	**Bud**	**20**	3.55		11.25
Agapanthus 'Sea Foam'		Sdec	Pe	1' x 1'	White	**Bud**	**40**	3.95		12.50
Alchemilla molle 'Auslese'		Sdec	Pe	12" x 18"	Greenish Yellow		**60**	3.55		
Aloe saponaria		Evgr	Su	1' x 2'+	Pinkish red		**20**	4.25		13.50
Aloe x spinosissima		Evgr	Su	2-3'	Deep orange		**30**	4.25		13.50
Alstroemeria 'Casablanca'		Evgr	Pe	30"	White		**60**	4.75		14.00
Alstroemeria 'The Third Harmonic'		Sdec	Pe	3-4'	Orange		**40**	4.75		14.00
Alstroemeria hybrids		Sdec	Pe	2-3'	Mixed colors		**60**	4.75		14.00
Alyogyne huegelii 'White Swan'		Evgr	Sh	5-6'	White	**Blm**	**20**	3.80		11.50
Anisodontea 'Elegant Lady'		Evgr	Sh	4-5'	Raspberry pink	**Blm**	**40**	3.55		11.25
Antirrhinum molle		Sdec	Sh	10" x 1-2'	White	**Blm**	**30**	3.80		11.50
Arbutus 'Marina' Std		Evgr	Tr	25-40'	Pink			6.95	15gal **20**	55.00
Arctostaphylos 'Emerald Carpet'	»	Evgr	Sh	1' x 6'	Whitish pink		**100**	3.95		12.50
Arctostaphylos 'Pacific Mist'	»	Evgr	Sh	2-3' x 6'	White			3.95	**3**	12.50
Arctostaphylos bakeri 'Louis Edmunds'	»	Evgr	Sh	5-6'	Pink		**60**	3.95		12.50
Arctostaphylos densiflora 'Monica'	»	Evgr	Sh	5-8'	Pink		**30**	3.95	**10**	12.50
Arctostaphylos densiflora 'Sentinel'	»	Evgr	Sh	6-8'	Light pink			3.95	**4**	12.50
Arctostaphylos edmundsii var. parvifolia 'Bert	»	Evgr	Sh	1' x 6'	Pale pink		**20**	3.95		12.50
Arctostaphylos manzanita 'Dr. Hurd'	»	Evgr	Sh	8-15'	White			4.25	**5**	13.50
Arctostaphylos nummularia 'Small Change'	»	Evgr	Sh	5" x 18"	White		**20**	3.95		12.50
Arctostaphylos uva-ursi 'Radiant'	»	Evgr	Sh	1' x 10'	Pinkish white		**80**	3.95		12.50
Artemisia dracunculus		Decd	Pe	to 3'	Greenish white		**40**	3.55		11.25
Banksia 'Giant Candles'		Evgr	Sh	10-12'	Deep orange		**5**	6.95		18.75
Banksia integrifolia		Evgr	Sh	20'	Soft yellow			6.95	**20**	18.75
Banksia marginata		Evgr	Sh	6-10'	Soft yellow			6.95	**10**	18.75
Banksia menziesii - dwarf form		Evgr	Sh	6-8'	Red & gold			6.95	**5**	18.75
Banksia praemorsa - wine red form		Evgr	Sh	8-10'	Reddish maroon			6.95	**10**	18.75
Banksia spinulosa 'Schnapper Point'		Evgr	Sh	2-4' x 4-5'	Honey & red		**20**	5.45	2gal **20**	9.50
Billbergia nutans		Evgr	Pe	18" x 3'	Lime & blue		**40**	4.25		13.50
Boronia megastigma 'Lutea'		Evgr	Sh	3-4'	Yellow		**20**	4.75		14.00
Buddleia davidii 'Empire Blue'		Sdec	Sh	6-9'	Dark lavender blue	**Blm**		3.55	**5**	11.25
Buddleia davidii x lindleyana		Sdec	Sh	6'	Hanging Lavender		**100**	3.55		11.25
Bulbine frutescens		Evgr	Pe	1' x 2-3'	Yellow	**Blm**	**20**	3.55		11.25
Calamagrostis x acutiflora 'Karl Foerster'		Decd	Gr	4-5'	Pinkish	**Blm**	**60**	3.95		12.50

		DESCRIPTION			FLOWER COLOR		1 gal	$	5 gal	$
Campanula garganica 'Dickson's Gold'		Evgr	Pe	6" x 2'	Lavender blue	Blm	60	3.55		11.25
Campanula portenschlagiana		Evgr	Pe	6" x 2'	Violet blue	Blm	60	3.55		11.25
Canna x generalis 'Bengal Tiger'		Sdec	Pe	3-4'	Orange		30	3.95		12.50
Canna x generalis 'Wyoming'		Sdec	Pe	5'	Orange		60	3.95		12.50
Carex buchananii 'Red Rooster'		Evgr	Gr	2-3'	Inconspicuous		80	3.95		12.50
Carex comans 'Frosty Curls'		Evgr	Gr	18" x 2'	Inconspicuous		40	3.95		12.50
Carex dipsacea		Evgr	Gr	2-3'	Inconspicuous		30	3.95		12.50
Carex divulsa (tumulicola, Hort.)	»	Evgr	Gr	1' x 2-3'	Inconspicuous		200	3.95		12.50
Carex flagellifera		Evgr	Gr	18" x 2'	Inconspicuous		80	3.95		12.50
Carex testacea		Evgr	Gr	18" x 2'	Inconspicuous		80	3.95		12.50
Ceanothus 'Centennial'	»	Evgr	Sh	1' x 8'	Dark blue		60	3.95		12.50
Ceanothus 'Dark Star'	»	Evgr	Sh	6' x 8'	Cobalt blue		80	3.95		12.50
Ceanothus 'Julia Phelps'	»	Evgr	Sh	6' x 9'	Dark indigo blue		200	3.95		12.50
Ceanothus 'Ray Hartman'	»	Evgr	Sh	to 20'	Medium blue		100	3.95		12.50
Ceanothus arboreus 'Owlswood Blue'	»	Evgr	Sh	10' x 12'	Medium blue		30	3.95		12.50
Ceanothus griseus var. horizontalis 'Yankee	»	Evgr	Sh	3' x 10'	Medium blue		200	3.80		11.50
Ceanothus thyrsiflorus 'Snow Flurry'	»	Evgr	Sh	8' x 12'	White			3.95	10	12.50
Cerastium tomentosum		Evgr	Pe	8" x 3'	White	Bud	80	3.55		11.25
Cestrum elegans - rose red		Sdec	Sh	8'	Rose red	Bud	50	3.80		11.50
Cestrum elegans var. smithii		Sdec	Sh	8'	Light pink	Bud	40	3.80		11.50
Cistus salviifolius 'Prostratus'		Evgr	Sh	18" x 6'	White		40	3.80		11.50
Cistus x corbariensis		Evgr	Sh	3-4' x 5'	White		20	3.80		11.50
Cistus x purpureus		Evgr	Sh	4-5' x 6-7'	Dark pink		100	3.80		11.50
Clematis montana 'Freda'		Decd	Vi	to 25'	Cherry pink			4.25	15	13.50
Clematis montana 'Grandiflora'		Decd	Vi	to 20'	White			4.25	10	13.50
Clematis montana var. rubens		Decd	Vi	to 20'	Pink			4.25	10	13.50
Coleonema album		Evgr	Sh	5'	White		60	3.80		11.50
Coprosma 'Black Cloud'		Evgr	Sh	1-2'	Insignificant		20	3.95		12.50
Coprosma 'Roy's Red'		Evgr	Sh	3-4'	inconspicuous		80	3.95		12.50
Coprosma kirkii 'Variegata'		Evgr	Gr	12"-2' x	Creamy white		30	3.80		11.50
Coprosma repens 'Coppershine'		Evgr	Sh	6'	Insignificant		60	3.80		11.50
Coprosma repens 'Pink Splendor'		Evgr	Sh	6'	Insignificant		80	3.95		12.50
Coreopsis grandiflora 'Early Sunrise'		Sdec	Pe	2'	Semi-dbl lt. gold	Blm	100	3.55		11.25
Cornus stolonifera 'Flaviramea'	»	Decd	Sh	5-9'	White			3.80	5	11.50
Correa 'Carmine Bells'		Evgr	Sh	18" x 4'	Dusky red			3.95	7	12.50
Correa 'Wyn's Wonder'		Evgr	Sh	2-3' x 4-5'	Rose pink		30	4.25		13.50
Correa pulchella 'Pink Eyre'		Evgr	Sh	3'	Light pink		60	4.75		14.00
Correa pulchella 'Pink Flamingo'		Evgr	Sh	2-3'	Deep salmon pink		40	4.75		14.00
Correa pulchella 'White Gums'		Evgr	Sh	3-4'	Creamy white		80	4.75		14.00
Correa reflexa 'Cape Carpet'		Evgr	Sh	1.5' x 4'	red tubular, tipped		30	4.75		14.00
Cotyledon orbiculata var. oblonga		Evgr	Su	1-2' x 3'	Coral orange		20	4.25		13.50
Crocosmia 'His Majesty'		Decd	Pe	2'	Orange, red eye		40	3.95		12.50
Cupressus arizonica		Evgr	Tr				20	4.75	10	14.00
Cynara scolymus 'Globe'		Evgr	Pe	4'	Purple		60	3.55	2 GAL	11.25

		DESCRIPTION			FLOWER COLOR		1 gal	$	5 gal	$
Delphinium Magic Fountain - Mix		Decd	Pe	2-3'	Dk Blu, Sky Blu,	**Bud**	**20**	3.80		11.50
Delphinium grandiflorum 'Blue Butterfly'		Decd	Pe	14" x 12"	Deep Blue	**Blm**	**80**	3.80		11.50
Dodonaea sinuolata		Evgr	Sh	6' x 5'	Pink hops			3.95	**15**	12.50
Dryopteris erythrosora		Evgr	Fe	1-2'			**40**	4.75		14.00
Echeveria 'Fleur de Or'		Evgr	Su	4" X 1'	Golden	**Blm**	**20**	4.25		13.50
Echeveria x imbricata		Evgr	Su	8" X 1-2'	Pink & yellow		**40**	4.25		13.50
Echinacea purpurea 'White Swan'		Decd	Pe	3'	White	**Bud**	**60**	3.55		11.25
Echium fastuosum		Evgr	Sh	6'	Bluish purple			3.80	**6**	11.50
Elaeagnus pungens 'Fruitlandii'		Evgr	Sh	to 15'	Creamy white		**20**	3.80		11.50
Eryngium planum - blue flowers		Evgr	Pe	2-3'	Blue		**150**	3.55		11.25
Escallonia 'Compacta'		Evgr	Sh	2' x 3'	Dark pink		**20**	3.95		12.50
Festuca glauca 'Elijah Blue'		Evgr	Gr	6-12"	Silvery		**100**	3.95		12.50
Fremontodendron 'Pacific Sunset'	»	Evgr	Sh	to 25'	Orange yellow	**Blm**		4.75	**6**	14.00
Fremontodendron 'San Gabriel'	»	Evgr	Sh	20'	Yellow	**Blm**		4.75	**6**	14.00
Fremontodendron decumbens 'Ken Taylor'		Evgr	Sh		Yellow	**Blm**		4.75	**10**	14.00
Fuchsia 'Fanfare'		Sdec	Sh	6-10'	Hot pink			3.95	**3**	12.50
Fuchsia denticulata		Sdec	Sh	6-10'	Red orange			3.95	**8**	12.50
Fuchsia glazioviana		Sdec	Sh	4-5'	Bright pink		**100**	3.95		12.50
Fuchsia paniculata		Sdec	Sh	6-10'	Red purple	**Bud**	**20**	3.95	**10**	12.50
Gaillardia 'Goblin'		Sdec	Pe	12-16"	Yellow, red center	**Bud**	**100**	3.55		11.25
Galium odoratum		Sdec	Pe	1' x 3' +	White	**Blm**	**20**	3.95		12.50
Geranium macrorrhizum 'Ingwersen's Variety'		Evgr	Pe	1' x 3' +	Pale pink	**Blm**	**20**	3.80		11.50
Geranium x cantabrigiense 'Biokovo'		Evgr	Pe	8-12" x 3' +	Pinkish white	**Blm**	**100**	3.80		11.50
Geranium x riversleaianum 'Mavis Simpson'		Sdec	Pe	1' x 3'	Clear pink	**Blm**	**80**	3.95		12.50
Grevillea 'Ivanhoe'		Evgr	Sh	10' x 12'	Magenta red		**40**	4.25		13.50
Grevillea 'Poorinda Blondie'		Evgr	Sh	10' x 14'	Yellow & bronze		**30**	4.25		13.50
Grevillea 'Ruby Clusters'		Evgr	Sh	6' x 8'	Ruby red			4.25	**4**	13.50
Grevillea lanigera 'Coastal Gem'		Evgr	Sh	1' x 4-5'	Pinkish-red &		**20**	4.75	**5**	14.00
Grevillea lavandulacea 'Penola'		Evgr	Sh	6' x 8'	Red & cream		**20**	4.25		13.50
Grevillea rosmarinifolia 'Scarlet Sprite'		Evgr	Sh	3' x 5'	Red		**30**	4.25		13.50
Grewia caffra		Evgr	Sh	8'	Lavender	**Blm**	**50**	3.80		11.50
Hebe 'Wiri Spear'		Evgr	Sh	3'	Light purple		**30**	3.95		12.50
Hebe glaucophylla		Evgr	Sh	2'	White		**100**	3.95		12.50
Helichrysum italicum		Evgr	Pe	2'	Yellow	**Bud**	**100**	3.55		
Helichrysum bracteatum 'Dargan Hill		Evgr	Pe	2' x 4'	Yellow	**Blm**	**20**	3.55		11.25
Helichrysum petiolare		Evgr	Sh	4-30'	Tan	**Blm**	**150**	3.55		11.25
Hemizygia obermeyerae		Sdec	Sh	4-5'	Mauve pink	**Blm**	**30**	3.80		11.50
Heterocentron elegans		Evgr	Pe	6" x 2-3'	Magenta	**Blm**	**40**	3.80		11.50
Heuchera micrantha diversifolia 'Palace		Evgr	Pe	12-24"	Whitish		**80**	3.80		11.50
Hydrangea macrophylla - pink fls.		Decd	Sh	5-6'	Pink		**30**	3.95		12.50
Hydrangea macrophylla - red fls.		Decd	Sh	5-6'	Red		**30**	3.95		12.50
Hydrangea macrophylla - white flower		Decd	Sh	5-6'	White			3.95	**10**	12.50
Hydrangea macrophylla 'Nikko Blue'		Decd	Sh	4-5'	Blue			3.95	**10**	12.50
Hypericum x moserianum 'Tricolor'		Evgr	Sh	2' x 3'	Yellow	**Bud**	**60**	3.80		11.50

	DESCRIPTION			FLOWER COLOR		1 gal	$	5 gal	$	4
Lavandula angustifolia 'Twickel Purple'	Evgr	Sh	2-3'	Bright blue violet		**80**	3.80		11.50	
Lavandula stoechas 'Otto Quast'	Evgr	Sh	2-3'	PBlmurple violet	**Bud**	**100**	3.80		11.50	
Lavandula stoechas var. pedunculata 'Atlas'	Evgr	Sh	2-3'	Purple violet		**60**	3.80		11.50	
Lavandula x intermedia 'Grosso'	Evgr	Sh	1-2'	Violet purple		**60**	3.80		11.50	
Lavatera thuringiaca 'Barnsley'	Evgr	Sh	6'	Pale pink	**Bud**	**30**	3.80		11.50	
Lavatera thuringiaca 'Kew Rose'	Evgr	Sh	6-10'	Dark pink	**Bud**	**40**	3.80	**4**	11.50	
Leucadendron 'Crown Jubilee'	Evgr	Sh				**30**	5.45		15.75	
Leucadendron 'Pisa'	Evgr	Sh	6' x 5'	Silver & yellow		**30**	5.45		15.75	
Leucadendron 'Silvan Red'	Evgr	Sh	7' x 6'	Yellow & red		**60**	5.45		15.75	
Leucadendron discolor 'Flame Tip'	Evgr	Sh	6' x 6'	Red & yellow			5.45	**8**	15.75	
Leucadendron galpinii	Evgr	Sh	5' x 4'	Silvery gray		**20**	5.45		15.75	
Leucadendron meridianum 'More Silver'	Evgr	Sh	5-6'	Yellow		**20**	5.45		15.75	
Leucadendron salignum 'Golden Tulip'	Evgr	Sh	4' x 6'	Golden yellow			5.45	**3**	15.75	
Leucadendron salignum 'Red Cone'	Evgr	Sh	3-4' x 6-8'	Red & yellow		**20**	5.45		15.75	
Leucadendron salignum 'Red Tulip'	Evgr	Sh	4' x 5'	Cream & red			5.45	**5**	15.75	
Libertia peregrinans	Evgr	Pe	1' x 1-2'	White		**30**	4.25		13.50	
Liriope muscari	Evgr	Gr	18"	Lilac	**Blm**	**40**	3.95		12.50	
Lithodora diffusa 'Grace Ward'	Evgr	Pe	1' x 3-4'	Bright blue	**Blm**	**80**	3.80		11.50	
Lobelia laxiflora	Sdec	Pe	3'	Red & yellow	**Bud**	**60**	3.55		11.25	
Lonicera confusa	Sdec	Sh	8-10'	Cream	**Blm**		4.25	**5**	13.50	
Lycianthes rantonnetii 'Variegata'	Sdec	Sh	5-6'	Purple	**Blm**	**100**	3.80		11.50	
Michelia figo 'Port Wine'	Evgr	Sh	8-10'	Rose to maroon			4.25	**8**	13.50	
Microlepia strigosa	Evgr	Fe	3-4'			**20**	4.75		14.00	
Miscanthus sinensis 'Yaku Jima'	Decd	Gr	3-4'	Reddish tan		**20**	3.95		12.50	
Muhlenbergia rigens »	Evgr	Gr	5'	Tan		**40**	3.95		12.50	
Nepeta mussinii 'Blue Wonder'	Sdec	Pe	8-12" x 2-3	Blue	**Blm**	**100**	3.55		11.25	
Nepeta mussinii 'Walker's Low'	Sdec	Pe	4-6"	Lavender blue	**Blm**	**30**	3.55		11.25	
Nerine masonorum	Evgr	Pe	6-8"	Pink		**80**	3.95		12.50	
Oenothera 'Siskiyou'	Sdec	Pe	1' x 4-6' +	Pink	**Bud**	**150**	3.55		11.25	
Origanum 'Kent Beauty'	Sdec	Pe	6" x 2-3'	Pink	**Blm**	**40**	3.95		12.50	
Origanum dictamnus	Sdec	Pe	1' x 1-2'	Pink	**Blm**	**40**	3.95		12.50	
Origanum laevigatum 'Hopleys'	Evgr	Pe	30" x 2-3'	Red violet		**80**	3.80		11.50	
Origanum vulgare 'Variegatum'	Evgr	Pe	18" x 2'	Pinkish white		**100**	3.55		11.25	
Osteomeles schwerinae	Evgr	Sh	4-5'	White		**30**	3.95		12.50	
Pandorea pandorana	Evgr	Vi	20'	Creamy yellow			4.25	**6**	13.50	
Parahebe perfoliata	Sdec	Pe	3'	Purple	**Blm**	**60**	3.95		12.50	
Passiflora 'Coral Seas'	Evgr	Vi	to 30'	Coral pink	**Bud**		4.25	**10**	13.50	
Passiflora 'Lavender Lady'	Evgr	Vi	to 15'	Lavender purple	**Blm**		4.25	**8**	13.50	
Pelargonium 'Mrs. Taylor'	Evgr	Sh	2' x 3'	Bright orange red	**Blm**	**20**	3.80		11.50	
Pelargonium - hybrid - lime leaf scarlet sng	Evgr	Pe		Scarlet pink	**Bud**	**30**	3.80		11.50	
Pelargonium cordifolium	Evgr	Pe	3-4'	Lavender pink		**30**	3.80		11.50	
Pelargonium peltatum 'Variegatum'	Evgr	Sh	6" x 18"	Scarlet red	**Blm**	**30**	3.80		11.50	
Pellaea falcata	Evgr	Fe	1-2'			**80**	4.75		14.00	
Pennisetum orientale	Decd	Gr	2'	Pinkish cream	**Blm**	**80**	3.95		12.50	

		DESCRIPTION			FLOWER COLOR		1 gal	$	5 gal	$
Pennisetum setaceum 'Eaton Canyon'		Sdec	Gr	2'	Pinkish burgundy		**40**	3.95		12.50
Pennisetum setaceum 'Rubrum'		Sdec	Gr	4'	Pinkish burgundy		**200**	3.95		12.50
Penstemon cv. 'Bev Jensen'		Evgr	Pe	3'	Rose pink	**Bud**	**60**	3.55		11.25
Penstemon cv. 'Hidcote Pink'		Evgr	Pe	3'	Pink	**Bud**	**100**	3.55		11.25
Penstemon cv. 'Thorn'		Evgr	Pe	3'	White, rose mouth	**Bud**	**80**	3.55		11.25
Penstemon pinifolius 'Mersea Yellow'		Evgr	Pe	12" X 15"	Soft Yellow		**40**	3.70		
Phlomis italica		Evgr	Sh	3-4'	Lilac pink		**60**	3.80		11.50
Phormium cookianum		Evgr	Pe	4'	Yellowish			4.75	**10**	14.00
Phormium cookianum 'Cream Delight'		Evgr	Pe	2-3'	Yellowish			5.45	**5**	15.75
Phygelius x rectus 'Sensation'		Evgr	Pe	4-5'	Purplish rose	**Blm**	**40**	3.55		11.25
Physocarpus opulifolius 'Diabolo'		Decd	Sh	6'	White, pink buds		**60**	3.95		12.50
Polygala myrtifolia 'Grandiflora'		Evgr	Sh	6'	Magenta		**40**	3.80		11.50
Polygala x dalmaisiana		Evgr	Sh	3-5'	Magenta	**Blm**		3.80	**5**	11.50
Rehmannia elata		Sdec	Pe	2'	Dark rose		**80**	3.80		11.50
Rhamnus californica 'Mound San Bruno'	»	Evgr	Sh	4' x 6'	Greenish yellow	**Bud**		3.95	**10**	12.50
Ribes sanguineum var. glutinosum	»	Decd	Sh	6-10'	Pink			3.95	**10**	12.50
Rosa 'Darlow's Enigma'		Decd	Sh	6-8'h, 4	Semi-dbl. frag pure	**Blm**		4.25	**10**	13.50
Rosmarinus officinalis 'Blue Spires'		Evgr	Sh	3-4'	Dark blue		**60**	3.80		11.50
Rosmarinus officinalis 'Lockwood de Forest'		Evgr	Gr	1-2" x 6-8'	Pale Blue		**100**	3.80		11.50
Rosmarinus officinalis 'Majorca Pink'		Evgr	Sh	3' x 4'	Lavender pink		**30**	3.80		11.50
Rosmarinus officinalis 'Prostratus'		Evgr	Sh	2' x 5'	Light blue		**30**	3.80		11.50
Rosmarinus officinalis 'Tuscan Blue'		Evgr	Sh	4-5'	Dark blue		**100**	3.80		11.50
Rudbeckia fulgida 'Goldsturm'		Decd	Pe	2'	Golden yellow		**150**	3.55		11.25
Rudbeckia hirta 'Goldilocks'		Sdec	Pe	10-15"x1'	dbl, semi-dbl	**Blm**	**80**	3.55		11.25
Salix matsudana 'Tortuosa'		Decd	Tr	to 25'	Yellow			4.25	**3**	13.50
Salvia 'Bee's Bliss'	»	Evgr	Sh	18" x 3-5'	Lavender blue		**80**	3.95		12.50
Salvia 'Santa Cruz Dark'	»	Evgr	Sh	4-5'	Dark lavender blue	**Bud**		3.95	**8**	12.50
Salvia 'Whirly Blue'	»	Evgr	Sh	4-5'	Lavender blue			3.95	**5**	12.50
Salvia blepharophylla		Evgr	Pe	18" x 2-3'	Dark orange	**Bud**	**20**	3.55		11.25
Salvia guaranitica 'Argentina Skies'		Decd	Pe	4'	Pale blue		**150**	3.55		11.25
Salvia mellifera x 'Calamity Jane'		Evgr	Sh	3' x 4'	Light lavender blue			3.95	**10**	12.50
Salvia mexicana --black calyx		Sdec	Pe	5'	Blue	**Bud**	**60**	3.55		11.25
Salvia officinalis 'Berggarten'		Evgr	Pe	1-2'	Blue		**150**	3.55		11.25
Salvia officinalis 'Icterina'		Evgr	Pe	1-2'	Blue		**40**	3.55		11.25
Salvia officinalis 'Purpurascens'		Evgr	Pe	1-2'	Blue		**80**	3.55		11.25
Salvia officinalis 'Tricolor'		Evgr	Pe	1-2'	Blue		**100**	3.55		11.25
Sambucus nigra 'Madonna'		Decd	Sh	6'	White		**30**	4.25		13.50
Sambucus nigra 'Variegata'		Decd	Sh	6-8'	White			4.25	**5**	13.50
Satureja douglasii	»	Evgr	Pe	6" x 2-3'	White		**100**	3.95		12.50
Scabiosa caucasica 'Alba'		Sdec	Pe	18"	White	**Bud**	**80**	3.55		11.25
Scabiosa caucasica 'Fama'		Sdec	Pe	2'	Bright blue	**Bud**	**40**	3.55		11.25
Scaevola 'Mauve Clusters'		Evgr	Pe	10" x 3-4'	Lavender blue	**Blm**	**30**	3.80		11.50
Scleranthus biflorus		Evgr	Pe	5" x 30"	Green		**20**	3.80		11.50
Sedum 'Autumn Joy'		Decd	Su	2'	Dark pink	**Bud**	**80**	3.80		11.50

		DESCRIPTION			FLOWER COLOR		1 gal	$	5 gal	$
Sedum album 'Coral Carpet'		Evgr	Pe	3-6" x 2'	Light pink		**20**	3.80		11.50
Sedum oreganum	»	Evgr	Su	4" x 18-30"	Yellow		**40**	3.80		11.50
Sedum spurium 'Dragon's Blood'		Evgr	Su	4" x 2-3'	Dark rosy red		**40**	3.80		11.50
Sempervivum 'Giant Gray'		Evgr	Su	5" x 1-2'	Pink		**30**	3.95		12.50
Sempervivum 'Red Beauty'		Evgr	Su				**20**	3.95		12.50
Senecio serpens		Evgr	Su	1' x 2'	White		**20**	3.80		11.50
Senecio viravira		Evgr	Pe	3-4'	Cream	**Blm**	**60**	3.55		11.25
Solanum jasminoides 'Variegatum'		Sdec	Vi	to 15'	White		**60**	4.25		13.50
Solidago rugosa 'Fireworks'		Sdec	Pe	to 3'	Golden Yellow		**30**	3.55		11.25
Sollya heterophylla		Evgr	Sh	3', to 6-8'	Bright blue	**Blm**	**40**	3.95		12.50
Sollya heterophylla - white fl.		Evgr	Sh	3', to 6-8'	White	**Blm**	**60**	3.95		12.50
Spiraea nipponica 'Snowmound'		Decd	Sh	2-3' x 3-5'	White		**80**	3.80		11.50
Stachys byzantina 'Primrose Heron'		Evgr	Pe	5" x 3-4'	Pinkish		**20**	3.55		11.25
Stachys byzantina 'Silver Carpet'		Evgr	Pe	5" x 3-4'	Infrequent		**150**	3.55		11.25
Symphoricarpos albus	»	Decd	Sh	4-5'	Pinkish	**Blm**	**30**	3.95		12.50
Symphoricarpos x chenaultii 'Hancock'		Decd	Sh	1-2' x 3'	Pink flower become		**80**	3.80		11.50
Tagetes lucida		Sdec	Pe	1-2'	Golden yellow		**30**	3.55		11.25
Teucrium chamaedrys 'Compactum'		Evgr	Pe	6-12" x 3'	Purplish pink	**Blm**	**40**	3.55		11.25
Teucrium cossonii 'Majoricum'		Evgr	Pe	6" x 30"	Lavender purple	**Blm**	**80**	3.80		11.50
Teucrium fruticans 'Azureum'		Evgr	Sh	4' x 5'	Dark azure blue	**Blm**	**70**	3.80		11.50
Thunbergia alata		Sdec	Vi	to 6'	Dark eye, golden	**Bud**	**20**	4.25		13.50
Thymus 'Uncle Wayne'		Evgr	Pe	4" x 2-3'	Red purple	**Blm**	**150**	3.55		11.25
Tremandra stelligera 'Karri Violet'		Evgr	Sh		Violet Purple	**Blm**	**40**	4.75		14.00
Tulbaghia violacea		Evgr	Pe	30" x 2'	Lavender	**Blm**	**30**	3.80		11.50
Verbascum bombyciferum 'Arctic Summer'		Evgr	Pe	5'	Yellow		**30**	3.55		11.25
Verbena 'Homestead Purple'		Evgr	Pe	6" x 5'	Purple	**Blm**	**60**	3.55		11.25
Verbena 'Tapien Blue Violet'		Evgr	Pe	6" x 3-4'	Dark blue violet	**Blm**	**40**	3.55		11.25
Verbena lilacina 'De la Mina'		Sdec	Pe	18" x 2'	Lavender violet	**Blm**	**150**	3.55		11.25
Veronica austriaca 'Crater Lake Blue'		Sdec	Pe	1' x 2'	Blue		**50**	3.55		11.25
Vitex agnus-castus 'Alba'		Decd	Sh	10-15'	White		**30**	3.80		11.50
Vitis vinifera 'Purpurea'		Decd	Vi	15-20'	Yellowish			4.25	**8**	13.50
Weigela florida 'Variegata'		Decd	Sh	6-8'	Pink		**40**	3.80		11.50
Westringea fruticosa 'Jervis Gem'		Evgr	Sh	to 3'	Light lilac	**Bud**	**40**	3.80		11.50
Westringia fruticosa		Evgr	Sh	4-5'	White		**30**	3.80	**5**	11.50
Westringia fruticosa 'Smokey'		Evgr	Sh	3-4'	White		**40**	3.80		11.50
Zephyranthes candida		Evgr	Pe	1'	White		**80**	3.95		12.50
Zephyranthes flavissima		Evgr	Pe	1'	Yellow	**Blm**	**40**	3.95		12.50

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Native	Type	Botanical name	Common Name	4 inch	1 gallon	5 gallon	Other sizes	Comments
Y	Tree	Acer negundo	Boxelder			X		
Y	Per	Achillea millefolium	Yarrow		X			
N	Per	Achillea millefolium 'Island Pink'	Pink yarrow		X			
N	Per	Achillea millefolium 'Snowsport'	White yarrow		X			
N	G,S,R	Acorus gramineus 'Licorice'	Licorice Japanese sweet flag	X				
Y	Tree	Aesclus californica	Buckeye				X-TP	
N	Per	Agastache 'Apricot Sprite'	Apricot Sprite hummingbird mint		X			
Y	Tree	Alnus rhombifolia	White aster		X	X		
N	D	Andropogon gerardii	Big Bluestem				X-#2	
Y	Tree	Arbutus menziesii	Madrone		X			young
Y	Tree	Arbutus 'Marina'	Marina madrone		X			
Y	Shrub	Arctostaphylos densiflora 'Howard McMinn'	Howard McMinn's manzanita		X			
Y	Shrub	Arctostaphylos edmundsii 'Carmel Sur'	Carmel Sur manzanita		X			

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Native	Type	Botanical name	Common Name	4 inch	1 gallon	5 gallon	Other sizes	Comments
Y	Shrub	Arctostaphylos 'Emerald Carpet'	Emerald Carpet manzanita		X			
Y	Tree	Arctostaphylos manzanita "Dr. Hurd'	Dr. Hurd's manzanita		X	X		
Y	Shrub	Arctostaphylos 'Pacific Mist'	Pacific Mist manzanita		X			
Y	Shrub	Arctostaphylos pajaroensis 'Paradise'	Paradise manzanita				X-#7, #15	
Y	Shrub	Arctostaphylos pajaroensis 'Warren Roberts'	Warren Roberts manzanita			X		
Y	Shrub	Arctostaphylos uva-ursi 'Point Reyes'	Point Reyes bearberry			X		
Y	Shrub	Arctostaphylos x densiflora 'Austin Griffith'	Austin Griffith manzanita			X		
N	Per	Aristea ecklonii 'Sonya'	Blue stars		X			
N	Per	Armeria 'Joystick' red	Sea thrift		X			
N	Per	Armeria 'Joystick' lilac	Sea thrift		X			
Y	Per	Armeria maritima 'Cottontails"	Sea thrift		X			

Native	Type	Botanical name	Common Name	4 inch	1 gallon	5 gallon	Other sizes	Comments
Y	Per	Armeria maritima 'Splendens'	Sea thrift		X			
Y	Per	Artemesia douglasii	Mugwort		X			
Y	Per	Artemesia pycnocephala	Dune sagewort		X			
Y	Per	Artemesia pycnocephala 'David's Choice'	David's Choice dune sagewort		X			
Y	Per	Asclepia fascicularis	Narrow leafed milkweed		X			
Y	Per	Aster chilensis	California aster		X			
Y	Per	Asarum caudatum	Wild ginger		X			
N	Shrub	Baccharis 'Centennial'	Desert broom		X			
Y	Shrub	Baccharis pilularis 'Pigeon Point'	Pigeon Point dwarf coyote bush		X			
Y	Shrub	Baccharis salicifolia	Muleflat		X			
N	G,S,R	Baumea rubiginosa variegata	Variegated striped rush		X			
Y	G,S,R	Calamagrostis nutkaensis 'Karl Foerster'	Karl Foerster Pacific reed grass		X			

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Native	Type	Botanical name	Common Name	4 inch	1 gallon	5 gallon	Other sizes	Comments
Y	G,S,R	Carex conica 'Marginata'	Miniature variegated sedge		X			
Y	G,S,R	Carex densa	Dense sedge		X			
Y	G,S,R	Carex pansa	Dune sedge		X			
Y	G,S,R	Carex tumulicola	Foothill sedge	X	X			
Y	G,S,R	Carex x 'The Beatles'	Mop headed sage		X			
Y	Shrub	Ceanothus 'Concha'	Concha's ceanothus		X			
Y	Shrub	Ceanothus 'Dark Star'	Dark Star ceanothus		X			
Y	Shrub	Ceanothus 'Frosty Blue'	Frosty Blue ceanothus		X			
Y	Shrub	Ceanothus gloriosus 'Anchor Bay'	Anchor Bay ceanothus		X	X		
Y	Shrub	Ceanothus gloriosus 'Emily Brown'	Emily Brown ceanothus			X		
Y	Shrub	Ceanothus griseus var. horizontalis 'Yankee Point'	Yankee Point ceanothus		X			
Y	Shrub	Ceanothus rigidus 'Snowball'	Snowball ceanothus			X		
Y	Shrub	Ceanothus thyrsiflorus 'Skylark'	Skylark ceanothus		X	X		

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Native	Type	Botanical name	Common Name	4 inch	1 gallon	5 gallon	Other sizes	Comments
Y	Per	Chlorogalum pomeridianum	Soap root		X			
Y	Vine	Clematis ligustifolia	Virgin's Bower		X			
Y	Tree	Cornus nuttallii	Pacific dogwood			X		
Y	Tree	Corylus cornuta var. californica	Hazelnut			X		young
Y	Tree	Cupressus macrocarpa	Monterey cypress		X			small
N	Per	Cynara scolymus 'Green Globe'	Green Globe artichoke		X			
Y	G,S,R	Cyperus eragrostis	Nutsedge, Umbrella sedge		X			
Y	G,S,R	Danthonia californica	California oatgrass		X			
Y	G,S,R	Deschampsia beringensis	Bering's tufted hairgrass		X			
Y	G,S,R	Deschampsia cespitosa ssp. Holciformus 'Jughandle'	Jughandle tufted hairgrass		X			
N	Per	Diascia barberea 'Eliot'			X			
Y	Per	Encelia californica	California brittle-bush		X			

Native	Type	Botanical name	Common Name	4 inch	1 gallon	5 gallon	Other sizes	Comments
Y	Per	Epilobium canum 'Wayne's Silver'	Wayne's Silver California fuchsia		X			
Y	G,S,R	Equisetum hyemale	Scouring rush		X			
Y	Per	Erigeron glaucus 'Seabreeze"	Seabreeze seaside daisy		X			
N	Per	Erodium reichardii 'Bishop's Form'	Baby Swiss geranium, Cranesbill		X			
Y	Per	Eriogonum fasiculatum	California buckwheat		X			
Y	Per	Eriogonum grande var. rubescens	Pink buckwheat		X			
Y	Shrub	Eriogonum latifolium	Coast buckwheat		X	X		
Y	Shrub	Eriogonum parvifolium	Dune buckwheat		X			
Y	Per	Eriophyllum staechadifolium	Lizardtail		X			
Y	G,S,R	Festuca californica	California fescue		X			
Y	Per	Frageria chiloensis	Beach strawberry		X			small
Y	Tree	Fraxinus latifolia	Oregon ash		X	X		
Y	Shrub	Garrya elliptica 'Evie'	Evie silk tassel			X		

Native	Type	Botanical name	Common Name	4 inch	1 gallon	5 gallon	Other sizes	Comments
y	Per	Grindelia hirsutula	Gumplant		X			
Y	Per	Grindelia stricta	Gumplant		X			
N	Shrub	Hebe 'Amy'			X			
Y	G,S,R	Helicototricho n sempervirens	Blue oat grass		X			
Y	Per	Helenium bigelovii	Bigelow's sneezeweed		X			
Y	Shrub	Heteromeles arbutifolia	Toyon		X			
N	Per	Heuchera 'Harvest Burgundy'	Harvest Burgundy alum root		X			
N	Per	Heuchera 'Palace Purple'	Palace Purple alum root		X			
N	Per	Heuchera 'Harvest Silver'	Harvest Silver alum root		X			
Y	Per	Horkelia californica	California horkelia		X			
Y	Per	Iris douglasiana	Douglas iris		X			
Y	Per	Iris douglasiana 'Canyon Snow'	Canyon Snow Douglas' iris		X			
Y	Per	Iris innominata Purple	Del Norte iris		X			

Native	Type	Botanical name	Common Name	4 inch	1 gallon	5 gallon	Other sizes	Comments
Y	Per	Iris PCH - Lavender	Lavender Pacific Coast Hybrid iris		X			
Y	Per	Iris PCH mixed colors	Mixed color Pacific Coast Hybrid iris		X			
Y	Per	Iris PCH - Purple and White	Purple and White Pacific Coast Hybrid iris		X			
Y	Per	Iris PCH 'Silver Moon'	Silver Moon Pacific Coast Hybrid iris		X			
Y	Per	Iris PCH - Yellow	Yellow Pacific Coast Hybrid iris		X			
Y	Per	Iris pseudoacorus 'Roy Davidson'	Roy Davidson iris			X		
Y	Tree	Juglans californica var. hindsii	California black walnut			X		
Y	G,S,R	Juncus balticus	Baltic rush		X			
Y	G,S,R	Juncus effusus 'Carmen's Japanese'	Carmen's Japanese rush		X			
Y	G,S,R	Juncus effusus var. pacificus	Quartz Creek common rush		X			
Y	G,S,R	Juncus patens	Gray rush, Spreading rush		X			

Native	Type	Botanical name	Common Name	4 inch	1 gallon	5 gallon	Other sizes	Comments
Y	G,S,R	Juncus patens 'Carmen's Gray'	Carmen's gray rush		X			
N	Per	Lavandula 'Munstead'	Otto Quast lavender			X		
Y	G,S,R	Leymus condensatus	Giant wildrye		X			
Y	G,S,R	Leymus mollis	American dunegrass		X			
Y	G,S,R	Leymus triticoides	Creeping wildrye		X			
N	G,S,R	Libertia peregrinans	New Zealand Iris		X			
N	Per	Lithadora 'Heavenly Blue'	Heavenly Blue lithadora		X			
Y	Shrub	Lonicera involucrata	Twinberry		X	X		
Y	Tree	Lyonothamnus floribundus ssp. Asplenifolius	Fern leaved Catalina ironwood			X	#15	
Y	Shrub	Mahonia aquifolium	Oregon grape		X	X		#5 young
Y	G,S,R	Melica californica	California melica		X			
Y	Shrub	Mimulus cardinalis	Scarlet monkeyflower			X		
Y	Per	Mimulus guttatus	Golden or seep monkey flower		X			

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Native	Type	Botanical name	Common Name	4 inch	1 gallon	5 gallon	Other sizes	Comments
Y	Per	Mimulus lewisii	Great purple monkeyflower		X			
Y	G,S,R	Miscanthus sinensis 'Morning Light'	Morning light maiden grass		X			
Y	G,S,R	Muhlenbergia rigens	Deer grass	X				small
Y	Shrub	Myrica californica	Pacific Wax Myrtle		X	X		
N	G,S,R	Ophiopogon clarkii	Clark lily turf		X			
N	G,S,R	Ophiopogon planiscarpus	Mondo grass		X			in bloom
N	G,S,R	Pennisetum messiacum 'Red Bunny Tails'	Red Bunny tails fountain grass		X			
N	G,S,R	Pennisetum 'Fairy Tales'	Fairy Tails fountain grass		X			
N	G,S,R	Pennisetum alopecuroides 'Hamelin'	Chinese fountain grass		X			
N	G,S,R	Pennisetum spatheolatum	Rye puffs		X			
N	Per	Penstemon 'Apple Blossom'	Apple Blossom penstemon		X			
Y	Per	Penstemon barbatus coccineus'Jingle Bells'	Jingle Bells scarlet bugler		X			

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Native	Type	Botanical name	Common Name	4 inch	1 gallon	5 gallon	Other sizes	Comments
N	Per	Penstemon barbatus 'Navigator'	Navigator beardtongue		X			
N	Per	Penstemon 'Firebird'	Firebird beardtongue		X			
N	Per	Penstemon 'Garnet'	Garnet beardtongue		X			
Y	Per	Penstemon 'Margarita BOP'	Margarita BOP beardtongue		X			
N	Per	Penstemon 'Midnight'	Midnight penstemon		X			
N	Per	Penstemon smallii 'Violet Dusk'	Violet Dusk beardtongue		X			
N	Per	Penstemon strictus 'Bandiera'	Rocky mountain beardtongue		X			
Y	Per	Phacelia californica	California scorpionweed		X			
N	Shrub	Phlomis grandiflora	Jeruselum sage		X			
N	Shrub	Physocarpus capitatus	Ninebark			X		
Y	Tree	Platanus racemosa	Sycamore			X		
Y	Shrub	Podocarpus macrophylla	Japanese yew		X			
Y	Per	Polemonium occidentale	Western polemonium		X			
Y	Tree	Quercus douglasii	Blue oak		X			

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Native	Type	Botanical name	Common Name	4 inch	1 gallon	5 gallon	Other sizes	Comments
Y	Tree	Quercus lobata	Valley oak		X			young
Y	Shrub	Rhamnus californica	Coffeeberry		X	X		
Y	Shrub	Rhamnus californica 'Eve Case'	Eve Case coffeeberry			X		
Y	Shrub	Rhamnus californica 'Leatherleaf'	Leatherleaf coffeeberry			X		
Y	Shrub	Rhamnus tomentella	Chaparral coffeeberry			X		
Y	Shrub	Rhus integrifolia	Lemonadeberry		X			
Y	Shrub	Ribes aureum var. gracillimumm	Golden currant		X	X		
Y	Shrub	Ribes malvaceum	Chaparral currant		X	X		
Y	Shrub	Ribes malvaceum 'Montara Rose'	Montara rose chapparal currant		X	X		
Y	Shrub	Ribes viburnifolium	Evergreen currant		X		#15	
Y	Shrub	Rosa californica	California rose			X		
N	Shrub	Rosemarinus 'Huntington Blue'	Huntington Blue rosemary		X			small
Y	Shrub	Rubus parviflorus	Thimbleberry			X		

Native	Type	Botanical name	Common Name	4 inch	1 gallon	5 gallon	Other sizes	Comments
Y	Tree	Salix exigua (syn. Hindsiana)	Narrow leafed willow		X			
Y	Tree	Salix laevigata	Red willow		X			
Y	Shrub	Salvia apiana	White sage		X			
Y	Shrub	Salvia 'Aromas'	Aromas sage			X		
N	Shrub	Salvia 'Hot Lips'	Hot Lips sage		X			
Y	Shrub	Salvia leucophylla	Grey/Purple sage		X	X		
Y	Shrub	Salvia mellifera	Black sage		X	X		
N	Shrub	Salvia mexicana 'Limelight'	Limelight Mexican sage		X	X		
Y	Shrub	Salvia 'Starlight'	Starlight sage			X		
N	Shrub	Salvia uglinosa	Bog sage		X			
Y	Per	Satureja douglasii	Yerba buena, Indian mint		X			
N	G,S,R	Scirpus americanus	Olney's bulrush		X			
Y	G,S,R	Scirpus californicus	California bulrush	X	X			
Y	G,S,R	Scirpus robustus	Salt marsh bulrush		X			
Y	Per	Sedum spurium 'Dragon's Blood'	Dragon's Blood stonecrop		X			

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Native	Type	Botanical name	Common Name	4 inch	1 gallon	5 gallon	Other sizes	Comments
Y	Tree	Sequoia sempervirens	Coastal redwood			X		
Y	Per	Sidalcea malvaeflora	Checkerbloom		X			
N	G,S,R	Spartina bakeri	Switchgrass			X	#2	
Y	Shrub	Spirea douglasii	Western spirea			X		
N	G,S,R	Stipa tennusisima	Mexican hair grass		X			
Y	Shrub	Symphoricarpus albus var. laevigata	Snowberry			X		
Y	Per	Tellima grandiflora	Fringe cups		X			
N	Per	Tolmeia menzeisii	Piggyback plant		X			
N	Per	Thymus citrodorus 'Silver Queen'	Silver queen thyme		X			
N	Per	Thymus praecox 'Pink Chintz'	Pink Chintz thyme		X			
Y	Tree	Umbellularia californica	California bay		X	X	TP	
Y	Per	Vancouveria hexandra	Inside out flower		X			
N	Per	Verbena lilacina 'De La Mina'	De La Mina verbena			X		
Y	Per	Veronica americana	American speedwell		X			