



PURISIMA CREEK REDWOODS PHOTO INTERPRETATION AND MAPPING CLASSIFICATION REPORT

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CLASS

Formation

Series – (Code ending in a zero)

Association – Mapping Units (Code ending in 1-9)

1000 – FORESTS

1140 – Tanoak – (California Bay) Multiple Series Mapping Unit

Distribution:

- Uncommon, in small to medium stands generally in redwood forests or mixed redwood-tanoak forests primarily in Purisima Creek Preserve. Madrone may be a minor component to the hardwood canopy.

Environmental Characteristics:

- Pure stands possibly a result of earlier logging efforts; severity of sudden oak death within the stands varies.

Description:

- Small stands of pure tanoak occur within coast redwood, and generally do not follow topographic variables such as slope steepness or aspect but may be a reflection of previous logging.

Photo Interpretation Signature:

- Usually has an olive green color, and the hardwood trees are shorter than the conifers that occur in close proximity.



Tanoak mixed with a small amount of coast redwood.



Stand of tanoak with a few emergent Douglas-fir and coast redwood.

1150 – *Eucalyptus* Series

Distribution:

- Abundant in a wide variety of stand structure and stand size, especially at lower elevations below the redwood forests. Many stands are in or near areas of urban disturbance such as residential areas or along roads but extensive patches occur in settings away from urbanization.

Environmental Characteristics:

- No slope or environmental correlations can be determined in this study.

Description:

- Usually found in linear patterns near homes or along roads, although some stands are too small to be mapped. Blue gum is often the dominant and the only species distinguishable on the aerial photography.

Photo Interpretation Signature:

- Eucalyptus trees appear tall and range from a dark brown to a dark green color on the imagery, depending on leaf conditions.



***Eucalyptus* stand mixed with a few Monterey cypress trees.**



***Pure eucalyptus* stand near a farm.**

1151– *Acacia* Series

Distribution:

- Local and uncommon adjacent to urban areas; one significant stand located off Skyline Boulevard and on Mill Creek Open Space Preserve (mostly found outside of study area boundary).

Environmental Characteristics:

- Disturbance related

Description:

- Blackwood acacia often dominates.

Photo Interpretation Signature:

- Photo interpretation signature was not established.



An acacia stand (south of eucalyptus stand) located west of Skyline Boulevard, in Mills Creek Open Space Preserve.

1180 – Giant Chinquapin

Distribution:

- Predominantly found in upper elevations. Only one polygon was mapped: along North Ridge Trail on Purisima Creek Open Space Preserve. Numerous small stands of chinquapin on Bald Knob are mapped as 1224 (Douglas-fir/chinquapin association).

Environmental Characteristics:

- Adjacent to redwood forests in small patches; also an understory component to Douglas-fir.

Description:

- Small dense stands of chinquapin dominate; evergreen huckleberry and less often manzanita may be a component to the shrub layer.

Photo Interpretation Signature:

- Clone like circular with narrow crowns

1200 – Temperate Needleleaf Evergreen Forests

1201 – Planted Stands of Pine

Distribution:

- Fairly common in small to medium stands; often in rows especially near the coast and along Skyline Boulevard; often mixing with blue gum.

Environmental Characteristics:

- Generally found in disturbance related settings adjacent or near blue gum stands.

Description:

- Planted stands of non-native exotic species located along roads and close to homes. Some stands are below the minimum mapping unit (mmu). Density is high, close to 90% crown cover in most cases. Most species include Monterey pine and/or Monterey cypress.

Photo Interpretation Signature:

- Trees are variable in crown shape and size but generally form linear patterns often occurring along road and property boundaries. Shades of green vary according to what species of pine has been planted.



Stand of Monterey pine above an arroyo willow run and open coyote brush.



Stand of Monterey pine surrounded by coyote brush and grass.

1210 – Redwood Series

Distribution:

- Uncommon; generally redwood stands have a tanoak component (see type 1211).

Environmental Characteristics:

- Although very limited, all the stands mapped in this study are located on north trending slopes in riparian areas at lower elevations.

Description:

- Stands are very dense, and generally young. Stands are small and located in mesic settings on north facing slopes.

Photo Interpretation Signature:

- Coast redwoods are an olive green color on both the aerial photos and DOQQs. Trees are tall, often emergent to the main canopy and have a variable crown shape. Larger more mature trees often have solid dense crowns with fuzziness towards the crown edge. Younger trees often form clonal looking patterns of several individuals.



Coast redwood (foreground) mixed with some Douglas-fir and tanoak trees (background).



Small stand of mature coast redwood trees adjacent to coyote brush.

1211 – Redwood / Tanoak Association

Distribution:

- By far the most common and extensive tree association in the study. Purisima Creek Preserve has the highest percentage of forested land dominated by redwoods. Common especially in the northeastern portion of the study.

Environmental Characteristics:

- Found in riparian settings at lowest elevations and at mid elevations extending on to north facing slopes and occurring on all but the most exposed xeric slopes at higher elevations where fog drip forms a significant component of the total annual precipitation.

Description:

- Although coast redwoods dominate the canopy, tanoak is a subordinate or co-dominant tree; California bay or madrone may be present. Alder or maple may also be a subordinate species under the canopy along the stream edges. Douglas-fir may be a minor component to one or more layers of the canopy.

Photo Interpretation Signature:

- Coast redwoods are an olive green color on both the aerial photos and DOQQs. Trees are tall, often emergent to the main canopy and have a variable crown shape. Larger more mature trees often have solid dense crowns with fuzziness towards the crown edge. Younger trees often form clonal looking patterns of several individuals. Tanoak also has an olive green color, but has a tighter crown and is shorter than the coast redwoods.



Stand dominated by coast redwood and tanoak with a minor component of Douglas-fir.



A stand of dense coast redwood – tanoak forest along a slope.

1220 – Douglas-fir Series

1221 – Douglas-fir - / Mixed Hardwoods Mapping Unit

Distribution:

- Uncommon; occurs at higher elevations in small to medium stands often adjacent to redwood forests.

Environmental Characteristics:

- Generally found in more xeric settings adjacent (usually upslope) to redwood-Douglas-fir mixed conifer forests.

Description:

- Douglas-fir dominates the forest canopy with hardwood species generally occurring as a minor component, depending on elevation as well as environmental aspect. At lower elevations coast live oak is often a subordinate species on xeric slopes, while tanoak, madrone and California bay will occur on the more mesic sites. Mapped where Douglas-fir makes up at least 80% of the relative conifer canopy cover and hardwoods make up at least 10-20% of the overall tree canopy. When Douglas-fir falls below a 10-20% conifer component to associated hardwoods, it will be mapped as a hardwood type.

Photo Interpretation Signature:

- Signature has the multiple green colors of mixed hardwoods, with the dark green (nearly blue green) color of the Douglas-fir emergent to the mixed hardwoods. Hardwoods are visible in the stand generally as a tight mosaic in the secondary canopy layer. Understory hardwood individuals are often not detectable.



Stand of Douglas-fir and tanoak mixed with a few coast redwoods.



A stand of Douglas-fir/mixed hardwoods adjacent to mesic shrubs and coyote brush.

1223 – Douglas-fir – Coast Redwood Association

Distribution:

- Uncommon; adjacent to redwood or mixed conifer forests at higher elevations in the study.

Environmental Characteristics:

- Generally found on drier slopes (upslope or on southwest to southeast aspects adjacent to redwood forests).

Description:

- Relatively uncommon, these two conifers do not mix in extensive areas. Mapped where either conifer contains at least 10-20% relative canopy cover. Hardwood species are more common in the understory tree layer.

Photo Interpretation Signature:

- Douglas-fir trees are tall; more mature trees have a branching crown and have a dark green to blue green color. Coast redwood trees are also tall, but their crown has a fuller shape and they are a much lighter color of green than the Douglas-fir tree. Older individuals of either species are more difficult to distinguish, as their colors are less distinct.



Douglas-fir - coast redwood mix along a ridge.



A stand of Douglas-fir - coast redwood on a slope.

1224 – Douglas-fir / Chinquapin Association

Distribution:

- Uncommon; generally downslope from the summit along Skyline Boulevard and on Bald Knob.

Environmental Characteristics:

- Similar settings to Douglas-fir pure stands (see type 1220).

Description:

- Dense to open stands of Douglas-fir with dense patches of chinquapin adjacent to Douglas-fir or chinquapin forming an understory layer to Douglas-fir.

Photo Interpretation Signature:

- Photo interpretation signature was not established.



***Stand of Douglas-fir/ chinquapin on Bald Knob.
Douglas-fir dominates and chinquapin is patchy
throughout.***

1300 – Temporarily Flooded Cold Season Deciduous Forests

1310 – Mixed Willow Series Mapping Unit

Distribution:

- Probably less common than pure stands of arroyo willow. Found close to the coastal edge of the study.

Environmental Characteristics:

- Probably found in wetter settings on larger stream courses than pure stands of arroyo willow.

Description:

- At least two species of willow dominate; mapping unit is used when arroyo willow cannot be modeled based on environment.

Photo Interpretation Signature:

- Generally bright green and shorter in stature than other vegetation in this study.



A stand of mixed willow in a riparian area.

1330 – Arroyo Willow Series

Distribution:

- Widely distributed throughout the study area.

Environmental Characteristics:

- Common in riparian settings that are at least temporarily flooded.

Description:

- Arroyo willow is a component to most stands. Usually occurs in drainages that feed into larger creeks containing riparian tree species such as red alder. Alder and maple may be a minor component to willow drainages, generally less than 10% relative cover.

Photo Interpretation Signature:

- Generally bright green and shorter in stature than other willow species in this study.



An arroyo willow run along Highway 1.



Arroyo willow between stands of coyote brush.

1340 – Red Alder Series (mixed willow) Series

Distribution:

- Found throughout the study area in riparian areas not dominated by redwood forests.

Environmental Characteristics:

- Common along perennial stream courses throughout the study generally yielding to redwood riparian at slightly higher elevations.

Description:

- Stand cover is generally closed, but may be broken by small areas not containing alder. Big-leaf maple, box elder and willow may occur in close proximity to the red alder series.

Photo Interpretation Signature:

- Tall, narrow, bright green trees with tight crowns in major riparian areas. PI signature on the early spring aerial photography is usually separable from adjacent upland hardwoods but is more difficult on the late season DOQQ's where the leaf is mature.



***Red alder - willow mix
occurring between 2 farms.***



***Red alder – mixed willow run
surrounded by mesic
deciduous shrubs.***

2000 – WOODLANDS

2100 – Xeric Sclerophyll Evergreen Woodlands

2110 – *Coast Live Oak Series*

Distribution:

- Uncommon

Environmental Characteristics:

- Although rare in the study area, can be found at mid elevations on dry south facing slopes.

Description:

- Stands noted were small and adjacent to grasslands, or mixed hardwood conifer types.

Photo Interpretation Signature:

- Trees appear to be a dark green color, with broad crowns in a uniform canopy.



Coast live oak located on a slope.



Stand of coast live oak stand adjacent to mesic coyote brush on a slope.

2340 – Box Elder Series

Distribution:

- Several patches noted along Purisima Creek.

Environmental Characteristics:

- Found in riparian areas, and is similar to red alder along major streams.

Description:

- Small stands of box elder dominate the stand with other species, including red alder and willow.

Photo Interpretation Signature:

- Time of photography yields a yellow-green color. It has a similar canopy structure to alder.



A stand of box elder in drainage adjacent to willow and alder.

3000 – SHRUBLANDS

3100 – Temperate Broadleaf Sclerophyll Evergreen Shrublands

3101 – Chaparral – Coastal Scrub Transition (*Manzanita* spp. – *Blue-blossom* – *Coffeeberry* – *Toyon* – *Coyote Brush* – *Wax Myrtle*)

Distribution:

- Fairly common at mid elevations generally east of the Coast Highway and below the Redwood forest zone.

Environmental Characteristics:

- Generally found in settings transitional to coastal sage scrub types and mesic chaparral.

Description:

- This is transitional between northern coastal scrub and chaparral types. The presence of blue blossom ceanothus was a helpful indicator for mapping this type. Mapped where chaparral species make up at least 25% of the relative cover of shrubs. Stands may have a significant component of coyote brush generally not exceeding 50% relative cover. Driest settings may support a significant component of monkey flower to the shrub layer. Poison oak is often a component to these types. Stands in the Purisima study area have little or no manzanita component.

Photo Interpretation Signature:

- Highly variable depending on component of chaparral; blue blossom shows up a dark green; coffeeberry as an emergent white signature.



A mixed stand of coyote brush, sticky monkeyflower, yellow lupine, and blue blossom located on a ridge.



The darker green signature is sparse blue blossom.

3104 – Blue Blossom (- Jimbrush) Mapping Unit

Distribution:

- Fairly common although pure stands are generally small.

Environmental Characteristics:

- Located on ridges, or convexities in rather dry settings. Often invades abandoned unpaved roads and fire breaks.

Description:

- Rarely found in pure stands in this study area, but may be more common in post fire situations. Blue blossom is the only *Ceanothus* species present in this study area. Jimbrush occurs in similar habitats farther from the coast.

Photo Interpretation Signature:

- Smooth, uniform dark green signature.



Close up picture of a blue blossom bush.



Linear stand of blue blossom adjacent to mesic deciduous shrubs.

3200– Temperate Microphyllous Evergreen Shrubland

3201 – Coastal Bluff Scrub Habitat (sparsely vegetated coastal bluffs: Coyote Brush – Seaside Woolly Sunflower – Iceplant)

Distribution:

- Limited to the coastal bluffs adjacent to the intertidal zones.

Environmental Characteristics:

- Located on steep bluffs.

Description:

- Extremely sparse stands along cliff faces and in the sand along the base of the cliffs. Ice plant, dwarf coyote brush, sea rocket, seaside woolly sunflower (also known as lizard tail), silvery beachweed, and yellow sand-verbena are the most common species present.

Photo Interpretation Signature:

- Mix of sparse tan and brown signature, usually surrounded by rocks.



Coastal bluff scrub (including iceplant, annual forbs and lizard tail) found along a steep cliff.



Very sparse coastal bluff scrub located on the bluff between the water and coyote brush (green signature).

3220 – Coyote Brush Series

3221 – Coyote Brush Mesic Stands (Coyote Brush – Ocean Spray – Blackberry – Poison Oak – Cape Ivy)

Distribution:

- The most common and extensive coyote brush type within the study.

Environmental Characteristics:

- Found in mesic settings on north trending slopes on all aspects and settings. Also found on south trending aspects restricted to swales and lower slopes.

Description:

- Mapped where Coyote Brush dominates with subordinate species including one or more of the following: poison oak, blackberry, golden yarrow, or ocean spray. Generally found in dense stands

Photo Interpretation Signature:

- Coyote brush has a variable green color with a textured appearance, while the mesic shrubs that co-dominate this series have a smooth, lighter green signature.



A stand of coyote brush, bracken fern and poison oak.



Mesic coyote brush on a gentle slope.

3222 – Coyote Brush Xeric Stands (Coyote Brush – California Sagebrush – Sticky Monkey Flower; Coyote Brush, Successional Stage)

Distribution:

- Much less common than mesic coyote brush; but generally found on dry slopes below the redwood forest belt.

Environmental Characteristics:

- Found only in the most xeric settings on steep mid and upper convex to neutral south to southwest trending slopes.

Description:

- Mapped where coyote brush dominates with subordinate species including both of the following: California sagebrush and sticky monkey flower. Generally found in open to dense stands.

Photo Interpretation Signature:

- Coyote brush has a variable green color with a textured appearance, while the xeric shrubs that co-dominate this series have a tan or brown signature.



Coyote brush mixed with California sagebrush (in foreground).



Xeric coyote brush on a slope.

3223 – Coyote Brush Open Stands (Coyote Brush / California Annual Grasslands)

Distribution:

- Common throughout the study in disturbed settings.

Environmental Characteristics:

- Found in highly variable settings, generally following disturbance.

Description:

- Open stands with a significant component of annual grasses; California blackberry may be a co-dominant shrub.

Photo Interpretation Signature:

- Generally dark green, somewhat textured signature found near roads and in, or close to annual grasses and forbs.



Sparse coyote brush over California annual grasslands.



Stand of open coyote brush over grass.

3224 – Coyote Brush Coastal Fringe (Coyote Brush – Lizardtail – Yellow Bush Lupine)

Distribution:

- Uncommon, limited to the coastal fringe and generally adjacent to the coastal bluff scrub habitat.

Environmental Characteristics:

- Fairly steep settings adjacent to the coastal bluffs and steeper swales.

Description:

- Quite diverse with dense to moderately dense stands of coyote brush with a co-dominance or presence of lizard-tail, yellow bush lupine, beach strawberry, and/or goldenbush. Other species often present include: seaside daisy, cutleaf plantain, coast buckwheat, iceplant, seaside woolly sunflower, powdery dudleya, and California blackberry.

Photo Interpretation Signature:

- Similar to mesic coyote brush (see type 3221), but the texture is a bit smoother.



Stand of coastal fringe coyote brush located along the coast in the northern part of the study area.



Coastal fringe coyote brush on a steep coastal cliff.

3225 – Dwarf Coyote Brush Prairie

Distribution:

- Limited to the coastal plain adjacent to the coastal bluffs.

Environmental Characteristics:

- Minimal to nearly level slopes adjacent to the coastal bluffs and is exposed to strong ocean winds.

Description:

- Open stands of dwarf coyote brush with a component of native bunch grasses and forbs.

Photo Interpretation Signature:

- Dwarf coyote brush generally yields a brighter green signature and has a smoother texture than the taller coyote brush communities found further inland. Dense native grasses such as California wild oats may cause some greenness in the signature.



Dwarf coyote brush prairie stand located near the coast.

3400 – Temperate Broadleaf Cold Season Deciduous Shrubland

3410 – Poison Oak Series

Distribution:

- Found throughout the study in small stands.

Environmental Characteristics:

- Pure stands of poison oak are found in mesic environments near coyote brush on north facing slopes adjacent to riparian areas and other deciduous shrubs (see code 3430).

Description:

- Poison oak is found abundantly in the study area. Mapped to alliance level, it is rarely the sole component of a stand. Coyote brush, California blackberry, chaparral species and even isolated mixed hardwoods emerge from the dense canopy..

Photo Interpretation Signature:

- Signature varies on the DOQQ due to the time of the year they were taken. In the upper elevations, poison oak yields a mixture of dark red, yellow and light green colors, while at the lower elevations it has a mixture of pink and light green color. In all cases, it is extremely smooth.



Poison oak stand in the concavity. There is a variability in color that correlates with the different stages leaf vigor.



Dense stand of poison oak close to a riparian area.

3430 – Mesic Deciduous Shrubs (Dogwood – Ocean Spray – Poison Oak- Blackberry- Elderberry- Blue Blossom - Hazelnut)

Distribution:

- Common throughout the study area below the redwood belt.

Environmental Characteristics:

- Found on low slope north facing concavities adjacent to riparian areas, next to poison oak (see code 3410) and downslope from coyote brush.

Description:

- Western creek dogwood usually dominates. Other common deciduous shrubs include: poison oak, California blackberry, ocean spray, blue blossom, coyote brush, elderberry, golden yarrow, hazelnut, and thimbleberry.

Photo Interpretation Signature:

- Varying tones and shades of green – mixing with gray or brown representing small components of poison oak or coyote brush.



Mesic deciduous shrubs on a north facing slope above an arroyo willow run. The mesic shrubs tend to show a bright green color in this environment.

4000 – HERBACEOUS

4100 – Saturated Temperate Perennial Graminoids

4101 – Undifferentiated Marsh (Cattail, Bulrush)

Distribution:

- Uncommon, but found adjacent to small ponds and reservoirs in the study.

Environmental Characteristics:

- Edge of water in permanently flooded conditions.

Description:

- May contain scirpus species (bulrush) and/or cattail.

Photo Interpretation Signature:

- Photo interpretation signature was not established.



Mix of cattail and bulrush around an ephemeral pond.

4110 – Cattail Series

Distribution:

- Uncommon, but found adjacent to small ponds and reservoirs in the study.

Environmental Characteristics:

- Found in seasonally to permanently flooded settings, generally surrounding lakes and ponds.

Description:

- Cattails generally dominate.

Photo Interpretation Signature:

- Signature is usually smooth or uniform and has a green color in a mesic setting. Die-off of last year's growth is a yellow-brown stipple texture.



Water surrounded by cattail.

4120 – Bulrush Series

Distribution:

- Uncommon, but found adjacent to small ponds and reservoirs in the study.

Environmental Characteristics:

- Similar but slightly wetter than cattail (see type 4110).

Description:

- Similar to cattail Series (see type 4110).

Photo Interpretation Signature:

- Dark green but highly variable.



Stand of bulrush with some Typha surrounding a small ephemeral pond.



Green signature around the water is bulrush; the brown signature is cattail.

4300 – Tall Temperate Annual Graminoids

4310 – California Annual Grasslands Series

Distribution:

- Common; stands vary in size throughout the study.

Environmental Characteristics:

- Located along roads, on ridges and on convex slopes.

Description:

- Common and extensive throughout the region. Nearly all stands are highly disturbed and contain a significant component of forbs along with annual grasses. The weed Bristly ox-tongue is especially common in these coastal grasslands. May contain a small native grass component not separable with the aerial photography.

Photo Interpretation Signature:

- Variable from yellowish brown to bright green depending on species and growing season.



Annual grasses found along road.



Open area of annual grasses in the study area.

4340 – *Poison Hemlock*

Distribution:

- Mapped based on plot data only.

Environmental Characteristics:

- Mapped based on plot data only.

Description:

- Mapped based on plot data only.

Photo Interpretation Signature:

- Photo interpretation signature was not established. Mapped based on plot data only.

4400 – Tall Temperate Perennial Graminoids

4410 – Harding Grass Series

Distribution:

- Uncommon in study area.

Environmental Characteristics:

- Occurs in or near California annual grasslands.

Description:

- Perennial harding grass dominates along with other exotic perennials and annual forbs and grasses.

Photo Interpretation Signature:

- Photo interpretation signature was not established.

4600 – Tidally Flooded Grasslands

4601 – *Estuarine Marsh Habitat (Saltgrass – Pickleweed – Cordgrass)*

Distribution:

- Rare in the Purisima study area, but found in the intertidal zone.

Environmental Characteristics:

- Intertidal zone

Description:

- Species in this type include: salt grass, pickleweed, and/or cordgrass in varying densities in low to high tidal marsh settings.

Photo Interpretation Signature:

- Variable depending on species composition and density.



Open Water estuarine habitat

9000 – LAND USE / UNVEGETATED

9800 – WATER

9100 – Government Related Facilities

9200 – Agriculture

9201 – Abandoned Orchards

9202 – Orchard

9210 – Rangeland – Pastureland

9220 – Olive Groves

9230 – Christmas Tree Farm

9240 – Plantation Pines

9300 – Built-up / Urban Disturbance

9302 – Quarry

9400 – Sparsely Vegetated or Unvegetated Areas

9410 – Landslides

9420 – Cliffs – Rock Outcrops

9500 – Vegetation Restoration Sites

9810 – Reservoirs

9820 – Small Ephemeral Ponds

9999 – Field questions

Species Mentioned in Text

Trees:

Arroyo Willow (*Salix lasiolepis*)
Blue Gum (*Eucalyptus globulus*)
Big-leaf Maple (*Acer macrophyllum*)big leaf maple (*Acer macrophyllum*)
Blackwood Acacia (*Acacia melanoxylon*)
Box Elder (*Acer negundo* var. *californicum*)
California Bay (*Umbellularia californica*)
Coast Live Oak (*Quercus agrifolia*)
Coast Redwood (*Sequoia sempervirens*)
Chinquapin (*Chysolepis chrysophylla*)
Douglas-fir (*Pseudotsuga menziesii*)
Eucalyptus (*Eucalyptus* spp.)
Madrone (*Arbutus menziesii*)
Monterey Cypress (*Cupressus macrocarpa*)
Monterey Pine (*Pinus radiata*)
Pine (*Pinus* spp.)
Red Alder (*Alnus rubra*)
Tanoak (*Lithocarpus densiflorus*)
Willow (*Salix* spp.)

Shrubs, Herbs:

Blackberry (*Rubus* spp.)
Blue Blossom (*Ceanothus thyrsiflorus*)
Beach Strawberry (*Fragaria chiloensis*)
Bristly Ox-tongue (*Picris echioides*)
Bulrush (*Scirpus* spp.)
Sticky Monkey Flower (*Mimulus aurantiacus*)
California Blackberry (*Rubus ursinus*)
California Sagebrush (*Artemisia californica*)
Cape Ivy (*Senecia mikanioides*)
Cattail (*Typha* spp.)
Coffeeberry (*Rhamnus californica*)
Coyote Brush (*Baccharis pilularis*)
Coast Buckwheat (*Eriogonum latifolium*)
Cordgrass (*Spartina* spp.)
Cutleaf Plantain (*Plantago coronopus*)
Dwarf Coyote Brush (*Baccharis pilularis*)
Elderberry (*Sambucus* sp.)
Golden Yarrow (*Eriophyllum confertiflorum*)
Hazelnut (*Corylus cornuta* var. *californica*)
Harding Grass (*Phalaris aquatica*)
Iceplant (*Carpobrotus* spp.)
Jim Brush (*Ceanothus oliganthus* var. *sorediatus*)
Manzanita (*Arctostaphylos* spp.)
Ocean Spray (*Holodiscus discolor*)
Pickleweed (*Salicornia* spp.)
Poison-hemlock (*Conium maculatum*)
Powdery Dudleya (*Dudleya farinosa*)
Poison Oak (*Toxicodendron diversilobum*)
Rush (*Juncus* spp.)
Saltgrass (*Distichlis spicata*)
Sea Rocket (*Cakile maritima*)
Seaside Daisy (*Erigeron glaucus*)
Seaside Woolly Sunflower (Lizard Tail) (*Eriophyllum staechadifolium*)

Silvery Beachweed (*Ambrosia chamissonis*)
Thimbleberry (*Rubus parviflorus*)
Toyon (*Heteromeles arbutifolia*)
Wax Myrtle (*Myrica californica*)
Western Creek Dogwood (*Cornus sericea* ssp. *occidentalis*)
Yellow Bush Lupine (*Lupinus arboreus*)
Yellow Sand-verbena (*Abronia latifolia*)

**Midpeninsula Regional Open Space District Preliminary Vegetation Classification
(Mapping Short Form)
Revised 11-28-05 for Purisima Creek Redwoods**

Classification of Vegetation Types (CNPS Series Level)

CLASS

Formation

Series – (Code ending in a zero)

Association – Mapping Units (Code ending in 1-9)

1000 – FORESTS

1100 – Temperate Broadleaf Sclerophyll Evergreen Forests

1101 – Lower Elevation Mixed Broadleaf Hardwoods (California Bay – Tanoak – Madrone - Coast Live Oak) Mapping Unit

1102 – Higher Elevation Mixed Broadleaf Hardwoods (California Bay - Tanoak, Madrone - Coast Live Oak - Canyon Live Oak) Mapping Unit

1110 – California Bay Series

1111 – California Bay Association

1120 – California Bay – Coast Live Oak Multiple Series Mapping Unit

1130 – California Bay – Canyon Live Oak Multiple Series Mapping Unit.

1140 – Tanoak – (California Bay) Multiple Series Mapping Unit

1150 – Eucalyptus Series

1151 – Acacia Series

1170 – Mixed Oak Mapping Unit (Including broad-leaf evergreen component of madrone & bay)

1180 – Giant Chinquapin

1200 – Temperate Needleleaf Evergreen Forests

1201 – Planted Stands of Pine (Monterey Pine – Monterey Cypress – other spp.)

1210 – Redwood Series

1211 – Redwood / Tanoak Association

1220 – Douglas-fir Series

1221 – Douglas-fir - / Mixed Hardwoods Mapping Unit

1222 – Douglas-fir – California Bay Association

1223 – Douglas-fir – Coast Redwood Association

1224 – Douglas-fir – Chinquapin Association

1230 – Foothill Pine Series

1231 – Foothill Pine – Canyon Live Oak Association

1232 – Foothill Pine / Big Berry Manzanita Association

1240 – Knobcone Pine Series

1300 – Temporarily Flooded Cold Season Deciduous Forests

1310 – Mixed Willow Series Mapping Unit (contains Arroyo Willow, Red Willow)

1320 – White Alder Series

1330 – Arroyo Willow (Arroyo willow identified as dominant component; other willow may occur)

1340 – Red Alder Series (mixed willow)

1400 – Cold Season Deciduous Forests

1410 – Black Oak Mapping Unit

2000 – WOODLANDS

2100 – Xeric Sclerophyll Evergreen Woodlands

2110 – Coast Live Oak Series

2200 – Cold Season Deciduous Woodlands

2210 – *Blue Oak Series*

2211 – *Blue Oak / California Annual Grasslands Association*

2212 – *Blue Oak Woodland Mapping Unit*

2220 – *California Buckeye Series*

2230 – *Valley Oak Series*

2300 – Temporarily Flooded Cold Season Deciduous Woodlands

2310 – *California Sycamore Series*

2320 – *Big-leaf Maple Series*

2330 – *Fremont Cottonwood Series*

2340 – Box Elder Series

3000 – SHRUBLANDS

3100 – Temperate Broadleaf Sclerophyll Evergreen Shrublands

3101 – I Chaparral – Coastal Scrub Transition (Manzanita spp. – Blue-blossom – Coffeeberry – Toyon – Coyote Brush – Wax Myrtle)

3102 – *Scrub Oak- (Manzanita – Wedge-leaf Ceanothus – Chamise - Scrub Interior Oak - Rhamnus Croc. - Toyon) Mapping Unit*

3103 – *Mixed Xeric Chaparral (Chamise – Sticky Monkey flower – Toyon – Sagebrush)*

3104 – Blue Blossom-Jimbrush Mapping Unit

3106 – *Brittleleaf Manzanita Mapping Unit*

3110 – *Chamise Series*

3111 – *Chamise – Leather Oak – (Garraya) – Serpentine Mapping Unit*

3120 – *Chamise – Wedge-leaf Ceanothus Series*

3130 – *Chamise – Mixed Manzanita Multiple Series Mapping Unit*

3140 – *Chamise – Mixed Oak Multiple Series Mapping Unit*

3150 – *Birch-leafed Mountain Mahogany – Mesic Chaparral Mapping Unit*

3160 – *Big Berry Manzanita Series*

3170 – *Manzanita – Mixed Oak Multiple Series Mapping Unit*

3180 – *Chamise – Woollyleaf Manzanita Series*

3190 – *Chamise - California Sagebrush (Sticky Monkey Flower) Series*

3200 – Temperate Microphyllous Evergreen Shrubland

3201 – Coastal Bluff Scrub Habitat (sparsely vegetated coastal bluffs: Coyote Brush - Dune Sagebrush – Goldenbush – Iceplant)

3210 – *Broom Series*

3220 – Coyote Brush Series

3221 – *Coyote Brush Mesic Stands (Coyote Brush – Ocean Spray – Blackberry – Poison Oak – Cape Ivy)*

3222 – *Coyote Brush Xeric Stands (Coyote Brush – California Sagebrush – Sticky Monkey Flower; Coyote Brush, Successional Stage)*

3223 – *Coyote Brush Open Stands (Coyote Brush / California Annual Grasslands)*

3224 – *Coyote Brush Coastal Fringe (Coyote Brush – Lizardtail – Yellow Bush Lupine – Goldenbush)*

3225 – *Dwarf Coyote Brush Prairie*

3230 – Coyote Brush – California Sagebrush – Sticky Monkey Flower Series

3300 – Temperate Xeric Mixed Drought-Deciduous Evergreen Shrubland

3310 - *California Sagebrush Series*

3400 – Temperate Broadleaf Cold Season Deciduous Shrubland

3410 – Poison Oak Series

3420 – *Bitter Cherry series – field verification only*

3430 – Mesic Deciduous Shrubs (Dogwood – Ocean Spray – Poison Oak- Blackberry- Elderberry- Blue Blossom – Hazelnut)

4000 – HERBACEOUS

4001 – Bracken Fern Stands

4100 – Saturated Temperate Perennial Graminoids

4101 – Undifferentiated Marsh (cattail, bulrush)

4110 –Cattail Series

4120 – Bulrush Series

4200 – Seasonally or Temporarily Flooded Graminoids

4210 –Sedge – *Juncus Meadow Mapping Unit*

4300 – Tall Temperate Annual Graminoids

4310 – California Annual Grasslands Series

4320 – *California Annual Grasslands with a Native Component Mapping Unit*

4330 – *Yellow Star-thistle Series*

4340 – Poison Hemlock (mapped based on plot data only)

4400 – Tall Temperate Perennial Graminoids

4401 – *Weedy Ruderal (Harding Grass – Velvet Grass – Thistle spp.)*

4410 – Harding Grass Series

4420 – *Meadow Barley Series*

4500 – Native Temperate Perennial Grasslands

4510 – *Mixed California Annual Grassland – Purple Needlegrass Association*

4520 - *Tufted Pine Grass - Purple Needlegrass Association*

4530 – *Purple Needlegrass Association*

4600 – Tidally Flooded Grasslands

4601- Estuarine Marsh Habitat (Saltgrass – Pickleweed – Cordgrass)

9000 – LAND USE / UNVEGETATED

9800 – WATER

9100 – Government Related Facilities

9200 – Agriculture

9201 – Abandoned Orchards

9202 – Orchard

9210 – Rangeland – Pastureland

9220 – Olive Groves

9230 – Christmas Tree Farm

9240 – Plantation Pines

9300 – Built-up / Urban Disturbance

9302 – Quarry

9400 – Sparsely Vegetated or Unvegetated Areas

9410 – Landslides

9420 – Cliffs – Rock Outcrops

9500 – Vegetation Restoration Sites

9810 – Reservoirs

9820 – Small Ephemeral Ponds

9999 – Field questions

COVER CLASS DENSITY VALUES

1 = >60%

2 = 40-60%

3 = 25-40%

4 = 10-25%

5 = 2-10%

9 = Not Applicable

Field Check Values

0 = No field check necessary

1 = Flagged for Field check

2 = Verified in the field

4 = Verified on field recon trip

5 = Reviewed with JM

6 = Sent as field questions, but not verified

8 = JM changed during prelim QC, and AH reviewed and made changes