

## APPENDIX C

TABLE 1: VASCULAR PLANT SPECIES OBSERVED WITHIN THE BONNY DOON QUARRY BOUNDARY EXPANSION AREA, SANTA CRUZ COUNTY, CALIFORNIA

Note:

\* - Non-native plant species

FAMILY NAME	SCIENTIFIC NAME	COMMON NAME
<b>Aceraceae</b>	<i>Acer macrophyllum</i>	Big-leaf maple
<b>Anacardiaceae</b>	<i>Toxicodendron diversilobum</i>	Poison-oak
<b>Apiaceae (Umbelliferae)</b>	<i>Foeniculum vulgare</i>	Fennel *
	<i>Lomatium dasycarpum</i>	Lomatium
	<i>Osmorhiza chilensis</i>	Sweet-cicely
	<i>Sanicula crassicaulis</i>	Pacific sanicle
	<i>Torilis arvensis</i>	Torilis
<b>Asteraceae (Compositae)</b>	<i>Achillea millefolium</i>	Yarrow
	<i>Adenocaulon bicolor</i>	Trail plant
	<i>Anaphalis margaritacea</i>	Pearly everlasting
	<i>Artemisia douglasiana</i>	Mugwort
	<i>Aster chilensis</i>	Aster
	<i>Baccharis pilularis</i>	Coyote brush
	<i>Centaurea melitensis</i>	Tocalote *
	<i>Cirsium vulgare</i>	Bull thistle *
	<i>Conyza canadensis</i>	Canadian horseweed
	<i>Erechtites minima</i>	Fireweed
	<i>Helenium puberulum</i>	Sneezeweed
	<i>Heterotheca grandiflora</i>	Telegraph weed
	<i>Hieracium albiflorum</i>	Hawkweed
	<i>Hypochaeris glabra</i>	Smooth cat's ear *
	<i>Lactuca serriola</i>	Prickly lettuce *
	<i>Leontodon taraxacoides</i>	Hawkbit
	<i>Madia elegans</i>	Slender tarweed
	<i>Madia madioides</i>	Common tarweed
<i>Madia sativa</i>	Tarweed	
<i>Picris echioides</i>	Ox-tongue daisy *	
<i>Senecio</i> sp.	Butterweed	
<i>Sonchus oleraceus</i>	Sow thistle *	
<b>Betulaceae</b>	<i>Corylus cornuta</i>	Hazelnut
<b>Boraginaceae</b>	<i>Myosotis discolor</i>	Forget-me-not *

<b>FAMILY NAME</b>	<b>SCIENTIFIC NAME</b>	<b>COMMON NAME</b>
<b>Brassicaceae (Cruciferae)</b>	<i>Cardamine oligosperma</i> <i>Raphanus sativus</i>	Bittercress Wild radish *
<b>Campanulaceae</b>	<i>Campanula prenanthoides</i>	Harebell
<b>Caprifoliaceae</b>	<i>Lonicera hispidula</i> <i>Lonicera subspicata</i> var. <i>denudate</i> <i>Sambucus racemosa</i> <i>Symphoricarpos mollis</i>	Honeysuckle Honeysuckle Black elderberry Snowberry
<b>Caryophyllaceae</b>	<i>Cerastium glomeratum</i>	Mouse-ear chickweed
<b>Cyperaceae</b>	<i>Carex</i> sp.	Sedge
<b>Dennstaedtiaceae</b>	<i>Pteridium aquilinum</i>	Bracken fern
<b>Dryopteridaceae</b>	<i>Athyrium filix-femina</i> <i>Polystichum munitum</i>	Lady fern Sword fern
<b>Ericaceae</b>	<i>Arbutus menziesii</i> <i>Vaccinium ovatum</i>	Pacific madrone Black huckleberry
<b>Equisetaceae</b>	<i>Equisetum arvense</i>	Common horsetail
<b>Fabaceae (Leguminosae)</b>	<i>Cytisus scoparius</i> <i>Lathyrus odoratus</i> <i>Lathyrus vestitus</i> var. <i>vestitus</i> <i>Lotus purshianus</i> var. <i>pursh.</i> <i>Lotus scoparius</i> <i>Medicago polymorpha</i> <i>Melilotus albus</i> <i>Trifolium</i> spp. <i>Vicia sativa</i>	Scotch broom Sweet pea * Native pea Trefoil California broom Bur-clover White sweet-clover * Clover Vetch
<b>Fagaceae</b>	<i>Lithocarpus densiflorus</i> <i>Quercus agrifolia</i> <i>Quercus chrysolepis</i>	Tan oak Coast live oak Canyon live oak
<b>Gerianaceae</b>	<i>Erodium cicutarium</i>	Filaree
<b>Iridaceae</b>	<i>Iris douglasiana</i>	Douglas iris
<b>Juncaceae</b>	<i>Juncus balticus</i> <i>Juncus bufonius</i> <i>Juncus effusus</i> <i>Juncus patens</i>	Baltic rush Toad rush Common rush Rush
<b>Lamiaceae</b>	<i>Satureja douglasii</i> <i>Stachys ajugoides</i> var. <i>ajugoides</i>	Yerba buena Hedge nettle

<b>FAMILY NAME</b>	<b>SCIENTIFIC NAME</b>	<b>COMMON NAME</b>
<b>Liliaceae</b>	<i>Disporum smithii</i>	Fairy bells
	<i>Chlorogalum pomeridianum</i>	Soap plant
	<i>Clintonia andrewsiana</i>	Clintonia
	<i>Smilicina racemosa</i>	False Solomon's seal
	<i>Trillium chloropetalum</i>	Wakerobin
<b>Linaceae</b>	<i>Linum bienne</i>	European flax *
<b>Myricaceae</b>	<i>Myrica californica</i>	California waxmyrtle
<b>Onagraceae</b>	<i>Epilobium ciliatum</i>	Fireweed
<b>Orchidaceae</b>	<i>Cypripedium sp.</i>	Coralroot
	<i>Epipactis gigantea</i>	Streamside orchid
	<i>Piperia transversa</i>	Piperia
<b>Oxalidaceae</b>	<i>Oxalis oregana</i>	Redwood sorrel
<b>Pinaceae</b>	<i>Pinus attenuata</i>	Knobcone pine
	<i>Pinus ponderosa</i>	Ponderosa pine
	<i>Pseudotsuga menziesii</i>	Douglas-fir
<b>Plantaginaceae</b>	<i>Plantago coronopifolia</i>	Cut-leaved plantain *
	<i>Plantago lanceolata</i>	European plantain *
<b>Poaceae (Gramineae)</b>	<i>Aira caryophyllea</i>	European silver hairgrass *
	<i>Avena barbata</i>	Wild oats *
	<i>Briza maxima</i>	Large rattlesnake grass*
	<i>Briza minima</i>	Small rattlesnake grass*
	<i>Bromus diandrus</i>	Ripgut *
	<i>Bromus hordeaceus</i>	Soft chess *
	<i>Bromus sterilis</i>	Sterile brome *
	<i>Calamagrostis koeleriodes</i>	Reedgrass
	<i>Cortaderia jubata</i>	Pampas grass *
	<i>Cynosurus echinatus</i>	Dogstail grass *
	<i>Elymus glaucus</i>	Blue wildrye
	<i>Festuca occidentalis</i>	Western fescue
	<i>Holcus lanatus</i>	Velvet grass *
	<i>Lolium multiflorum</i>	Annual ryegrass *
	<i>Melica imperfecta</i>	Oniongrass
<i>Nassella cernua</i>	Nodding needlegrass	
<i>Polypogon monspeliensis</i>	Rabbitsfoot grass *	
<i>Vulpia microstachys</i>	Annual fescue	
<b>Polemoniaceae</b>	<i>Navarretia squarrosa</i>	Skunkweed
<b>Polygonaceae</b>	<i>Rumex acetosella</i>	Sheep sorrel *
	<i>Rumex crispus</i>	Curly dock

<b>FAMILY NAME</b>	<b>SCIENTIFIC NAME</b>	<b>COMMON NAME</b>
<b>Primulaceae</b>	<i>Anagallis arvensis</i> <i>Trientalis latifolia</i>	Scarlet pimpernel * Starflower
<b>Pteridaceae</b>	<i>Pentagramma triangularis</i>	Goldback fern
<b>Ranunculaceae</b>	<i>Actaea rubra</i>	Baneberry
<b>Rhamnaceae</b>	<i>Ceanothus integerrimus</i> <i>Ceanothus thyrsiflorus</i> <i>Rhamnus californica</i> <i>Rhamnus purshiana</i>	Deer brush Blue blossom California coffeeberry Cascara
<b>Rosaceae</b>	<i>Fragaria vesca</i> <i>Heteromeles arbutifolia</i> <i>Rosa gymnocarpa</i> <i>Rubus discolor</i> <i>Rubus leucodermis</i> <i>Rubus parviflorus</i> <i>Rubus ursinus</i>	Woodland strawberry Toyon Wood rose Himalaya berry * Blackcap raspberry Thimbleberry California blackberry
<b>Rubiaceae</b>	<i>Galium porrigens</i> <i>Galium sp.</i>	Climbing bedstraw Bedstraw
<b>Salicaceae</b>	<i>Salix lasiandra</i> <i>Salix lasiolepis</i> <i>Salix sitchensis</i>	Shining willow Arroyo willow Sitka willow
<b>Scrophulariaceae</b>	<i>Digitalis purpurea</i> <i>Mimulus aurantiacus</i> <i>Mimulus guttatus</i> <i>Scrophularia californica</i> <i>Verbascum thapsus</i>	Foxglove Sticky monkeyflower Common monkeyflower California beeplant Mullein
<b>Taxodiaceae</b>	<i>Sequoia sempervirens</i>	Coast redwood
<b>Urticaceae</b>	<i>Hesperocnide tenellus</i> <i>Urtica dioica</i>	Dwarf nettle Stinging nettle
<b>Verbenaceae</b>	<i>Verbena lasiostachys</i>	Vervain

Source: TRA Environmental Sciences, Inc. 2006.

## APPENDIX C

TABLE 2: WILDLIFE SPECIES OBSERVED OR EXPECTED TO OCCUR WITHIN THE BONNY DOON QUARRY BOUNDARY EXPANSION AREA, SANTA CRUZ COUNTY, CALIFORNIA

Notes:

# - Species observed during field surveys

\* - Special status species

	SCIENTIFIC NAME	COMMON NAME
<b>Amphibians</b>	<i>Hyla regilla</i>	Pacific tree frog
	<i>Taricha granulosa</i>	Rough-skinned newt
	<i>Taricha torosa</i>	California newt
	<i>Aneides lugubris</i>	Arboreal salamander
<b>Reptiles</b>	<i>Gerrhonotus multicarinatus</i>	Southern alligator lizard#
	<i>Pituophis catenifers</i>	Gopher snake
	<i>Sceloporus occidentalis</i>	Western fence lizard
	<i>Thamnophis couchii atratus</i>	Santa Cruz garter snake#
	<i>Thamnophis sirtalis</i>	Common garter snake
	<i>Thamnophis elegans terrestris</i>	Coast garter snake
<b>Birds</b>	<i>Accipiter cooperii</i>	Cooper's hawk*
	<i>Accipiter striatus</i>	Sharp-shinned hawk*
	<i>Aquila chrysaetos</i>	Golden eagle*
	<i>Cathartes aura</i>	Turkey vulture
	<i>Buteo jamaicensis</i>	Red-tailed hawk
	<i>Buteo lineatus</i>	Red-shouldered hawk
	<i>Circus cyaneus</i>	Northern harrier
	<i>Elanus leucurus</i>	White-tailed kite*
	<i>Falco sparverius</i>	American kestrel#
	<i>Callipepla californica</i>	California quail#
	<i>Zenaida macroura</i>	Mourning dove
	<i>Asio otus</i>	Long-eared owl*
	<i>Bubo virginianus</i>	Great horned owl
	<i>Tyto alba</i>	Barn owl
	<i>Calypte anna</i>	Anna's hummingbird
	<i>Slasphorus sasin</i>	Allen's hummingbird#
	<i>Picoides nuttallii</i>	Nuttall's woodpecker
	<i>Melanerpes formicivorus</i>	Acorn woodpecker#
	<i>Colaptes auratus</i>	Northern flicker
	<i>Contopus cooperi</i>	Olive-sided flycatcher
	<i>Empidonax difficilis</i>	Pacific-slope flycatcher#
	<i>Myiarchus cinerascens</i>	Ash-throated flycatcher
	<i>Sayornis nigricans</i>	Black phoebe
	<i>Tachycineta thalassina</i>	Violet-green swallow
	<i>Aphelocoma coerulescens</i>	Scrub jay
	<i>Baeolophus inornatus</i>	Oak titmouse

	SCIENTIFIC NAME	COMMON NAME
<b>Birds (continued...)</b>	<i>Psaltriparus minimus</i>	Bushtit#
	<i>Sitta carolinensis</i>	White-breasted nuthatch
	<i>Certhia americana</i>	Brown creeper#
	<i>Vireo huttoni</i>	Hutton's vireo#
	<i>Corvus americanus</i>	American crow
	<i>Corvus corax</i>	Common raven#
	<i>Poecile rufescens</i>	Chestnut-backed chickadee#
	<i>Thryomanes bewickii</i>	Bewick's wren#
	<i>Troglodytes troglodytes</i>	Winter wren
	<i>Chamaea fasciata</i>	Wrentit#
	<i>Regulus calendula</i>	Ruby-crowned kinglet#
	<i>Turdus migratorius</i>	American robin
	<i>Mimus polyglottos</i>	Northern mockingbird
	<i>Vermivora celata</i>	Orange-crowned warbler#
	<i>Dendroica coronata</i>	Yellow-rumped warbler
	<i>Dendroica townsendi</i>	Townsend's warbler#
	<i>Wilsonia pusilla</i>	Wilson's warbler#
	<i>Pipilo crissalis</i>	California towhee#
	<i>Pipilo maculatus</i>	Spotted towhee#
	<i>Melospiza melodia</i>	Song sparrow
	<i>Zonotrichia leucophrys</i>	White-crowned sparrow
	<i>Junco hyemalis</i>	Dark-eyed junco#
	<i>Icterus bullockii</i>	Bullock's oriole
	<i>Sturnella neglecta</i>	Western meadowlark
	<i>Molothrus ater</i>	Brown-headed cowbird
<i>Carpodacus mexicanus</i>	House finch	
<i>Carduelis psaltria</i>	Lesser goldfinch	
<b>Mammals</b>	<i>Didelphus virginiana</i>	Opossum
	<i>Lepus californicus</i>	Black-tailed jackrabbit
	<i>Sylvilagus bachmannii</i>	Brush rabbit
	<i>Spermophilus beecheyi</i>	California ground squirrel
	<i>Sciurus griseus</i>	Western grey squirrel#
	<i>Sorex ornatus</i>	Ornate shrew
	<i>Thomomys</i> sp.	Pocket gopher
	<i>Peromyscus californicus</i>	California mouse
	<i>Peromyscus maniculatus</i>	Deer mouse
	<i>Neotoma fuscipes annectens</i>	San Francisco dusky-footed woodrat#*
	<i>Rattus rattus</i>	Black rat
	<i>Microtus californicus</i>	California vole
	<i>Eptesicus fuscus</i>	Big brown bat
	<i>Myotis evotis</i>	Long-eared myotis
	<i>Myotis volans</i>	Long-legged myotis
	<i>Myotis thysanodes</i>	Fringed myotis
	<i>Tadarida brasiliensis</i>	Mexican free-tailed bat
	<i>Lasiurus blossevillii</i>	Western red bat
	<i>Canis latrans</i>	Coyote
	<i>Urocyon cinereoargenteus</i>	Gray fox
<i>Procyon lotor</i>	Raccoon	

**SCIENTIFIC NAME**

**COMMON NAME**

*Lynx rufus*

Bobcat

*Felis concolor*

Mountain lion

*Odocoileus hemionus*

Black-tailed deer

Source: TRA Environmental Sciences, Inc. 2006.

## APPENDIX C

### TABLE 3: SPECIAL-STATUS SPECIES AND HABITATS CONSIDERED

The following table includes a list of special status species and habitats that are known to occur or potentially occur in the ~~Biological Study~~ Davenport 7.5-minute U.S.G.S. Quadrangle Area, with an assessment of their potential to occur in the Boundary Expansion Area.

Species	Listing Status Federal/ State/ CNPS Listing	General Habitat	Potential to Occur in the Expansion Area	Period of Identification / Blooming Period
<b>Invertebrates</b>				
<u>Ohlone tiger beetle</u> <u>(<i>Cicindela ohlone</i>)</u>	<u>FE/--/--</u>	<u>Forages, breeds and digs larval burrows along sunny narrow trails and roads in coast terrace native grasslands. Known from 5 populations in Santa Cruz County near UCSC and adjacent parklands.</u>	<u>None. Coastal terrace native grassland not present.</u>	<u>January-April</u>
<u>Smith's blue butterfly</u> <u>(<i>Euphilotes enoptes smithi</i>)</u>	<u>FE/--/--</u>	<u>Forages and breeds on coastal buckwheat plants in coastal dunes, dune scrub and coastal chaparral in the Monterey, Santa Cruz and San Mateo Counties.</u>	<u>None. Suitable habitat not present.</u>	<u>June-September</u>
<u>Mount Hermon June Beetle</u> <u>(<i>Polyphylla barbata</i>)</u>	<u>FE/--/--</u>	<u>Known only from the Sandhills Community near Mt. Hermon in Santa Cruz County. Typically associated with ponderosa pine communities in this localized area.</u>	<u>None. Suitable habitat not present.</u>	<u>May-July</u>
<u>Zayante band-winged grasshopper</u> <u>(<i>Trimerotropis infantilis</i>)</u>	<u>FE/--/--</u>	<u>Endemic to isolated sandstone deposits in the Santa Cruz Mountains (Zayante Sandhills Ecosystem). Associated with ponderosa pine-silverleaf manzanita communities.</u>	<u>None. Suitable habitat not present.</u>	<u>May - October</u>
<u>Monarch butterfly</u> <u>(<i>Danaus plexippus</i>)</u>	<u>NA</u>	<u>Migrates from Mexico in the fall to overwinter along the Central California coast. Prefers Eucalyptus and Monterey Cypress Groves for colonies.</u>	<u>None. Suitable habitat not present.</u>	<u>October-February</u>
<b>Fish</b>				
<u>Central Coast steelhead</u> <u>(<i>Onchorhynchus mykiss irideus</i>)</u> (Central Coast ESU)	<u>FT/--/--</u>	<u>Ranges from the Russian River, south to Soquel Creek and to, but not including the Pajaro River. Also occurs in the San Francisco and San Pablo Bay basins.</u>	<u>No habitat present within the Expansion Area; however, this species occurs in the lower reaches of Liddell Creek downstream of the project.</u>	<u>September-February</u>
<u>Tidewater goby</u> <u>(<i>Eucyclogobius newberryi</i>)</u>	<u>FE/CSC/--</u>	<u>Shallow lagoons and lower stream reaches where the water is brackish (salinities usually &lt;10 ppt) to fresh and slow-moving or fairly still but not stagnant</u>	<u>No habitat occurs in the Expansion Area. Low potential to occur at the mouth of Liddell Creek downstream of project.</u>	<u>Year round</u>

Species	Listing Status Federal/ State/ CNPS Listing	General Habitat	Potential to Occur in the Expansion Area	Period of Identification / Blooming Period
Coho salmon ( <i>Onchorhynchus kisutch</i> ) (Central California ESU)	FE/--/--	Ranges from Punta Gorda in Humboldt County, south to the San Lorenzo River in Santa Cruz County.	Habitat, not present in the Expansion Area. Not known to occur in Liddell Creek (NMFS, 2004) downstream of the project. Occurs in San Vicente Creek downstream of the Shale Quarry.	September-February
<b>Reptiles</b>				
Western pond turtle ( <i>Clemmys marmorata</i> )	--/CSC/--	Rivers and streams with some canopy cover.	No habitat occurs in the Expansion Area. Limited habitat occurs within the Study Area in sediment ponds associated with mining activities. The species has not been observed in the Study Area.	Year round, excluding winter
<b>Amphibians</b>				
California red-legged frog ( <i>Rana aurora draytonii</i> )	FT/CSC/--	Occurs in a broad range of freshwater and associated upland habitats throughout the Coast Range, Sierra Nevada and foothills, often found in perennial to seasonal drainages with dense vegetation	Suitable breeding or harbor habitat is not present in the Expansion Area; however, CRLF are documented to use settlement ponds in the Limestone Quarry for breeding.	April-October
Foothill yellow-legged frog ( <i>Rana boylei</i> )	FSC/CSC/--	Occurs in and around streams, creeks and other aquatic habitats	No habitat present in the Expansion Area. Has been observed approximately one mile downstream of the Shale Quarry in San Vicente Creek, and thus is expected in the watershed of the Shale Quarry (McGinnis, 1999).	Year-round
<u>California tiger salamander</u> ( <u><i>Ambystoma californiense</i></u> )	<u>FT/CSC/--</u>	<u>Annual grasslands and grassy understory of hardwood habitats; need underground refuges (i.e., ground squirrel burrows); need seasonal water sources for breeding.</u>	<u>No Suitable breeding habitat in the Expansion Area. Does not occur in the Limestone Quarry or the Shale Quarry Settlement Basins.</u>	<u>October-April</u>
<b>Birds</b>				
Marbled Murrelet ( <i>Brachyramphus marmoratus</i> )	FT/CE/--	Forages along coastline and offshore, nests in older stands of coastal redwood and Douglas-fir forest within approximately 30 miles of the coast. Nests are created in moss and leaf litter on large diameter branches.	Low, though the Expansion Area supports redwood forest vegetation, the size of these trees is not large enough for this species to nest. The species was not observed during wildlife surveys. Could occur in the biological study area.	Year round
<u>Western snowy plover</u> ( <u><i>Charadrius alexandrinus nivosus</i></u> )	<u>FT/CSC/--</u>	<u>Forages and nests along sandy beach and dune habitats along coast and inland along estuaries and lakes. Nests in depressions in sand.</u>	<u>None. Habitat not present in the Expansion Area.</u>	<u>Year round</u>
Cooper's hawk ( <i>Accipiter cooperii</i> )	--/CSC/--	Dense stands of live oak, riparian deciduous, or other forest habitats near water used most frequently	Low. Forest habitat suitable, but not adjacent to a water source. Expected to occur in the study area.	Year-round

Species	Listing Status Federal/ State/ CNPS Listing	General Habitat	Potential to Occur in the Expansion Area	Period of Identification / Blooming Period
American peregrine falcon ( <i>Falco peregrinus anatum</i> )	<del>FE</del> Delisted/--/--	Forages in marshes and grasslands. Nesting habitat includes high, protected cliffs and ledges near water.	Low. No suitable nesting habitat within the Expansion Area. Suitable habitat may occur in the study area.	May-August
<u>Bald eagle (<i>Haliaeetus leucocephalus</i>)</u>	<u>FT/SE/--</u>	<u>Ocean shorelines, lake margins, and river courses for both nesting and wintering.</u>	<u>Suitable nesting habitat not present in the Expansion Area.</u>	<u>August-January</u>
Tricolored blackbird ( <i>Agelaius tricolor</i> )	FSC/CSC/--	Nomadic resident of Sacramento-San Joaquin Valley and low foothills; nests in colonies within vicinity of fresh water/ marshy areas. Colonies prefer heavy growths of cattails and tules.	Suitable habitat not present in the Expansion Area. Limited nesting and foraging habitat occurs for this species in the study area. Species occurs within 2 miles of the project.	Year round
<u>Northern harrier (<i>Circus cyaneus</i>)</u>	<u>--/CSC/--</u>	<u>Nests in coastal freshwater and saltwater marshes; forages in grasslands, agricultural fields, and marshes.</u>	<u>Suitable nesting habitat not present in the Expansion Area. Species not observed during field surveys.</u>	<u>Year-round</u>
White-tailed kite ( <i>Elanus leucurus</i> )	FSC/CP/--	Nests in dense oak, willow, or other tree stand near open grasslands meadows, farmlands, and emergent wetlands.	Low, nesting and foraging habitat occurs in the coast live oak forest in the Expansion Area. Species not observed during field surveys.	Year-round
<u>Burrowing owl (<i>Athene cucularia</i>)</u>	<u>--/CSC/--</u>	<u>Open, dry grassland and desert habitats, and in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats</u>	<u>None. Habitat for this species is not present in the Expansion Area.</u>	<u>Year-round</u>
Little willow flycatcher ( <i>Empidonax trailii brewsteri</i> )	FSC/SE/--	Nests in dense riparian cover. Summer migrant in the project area. Suitable habitat is present in the biological study area.	None. Habitat not present in the Expansion Area.	Summer
<u>Black swift (<i>Cypseloides niger</i>)</u>	<u>--/CSC/--</u>	<u>Nests in moist crevice or cave on sea cliffs above the surf, or on cliffs behind, or adjacent to, waterfalls in deep canyons.</u>	<u>None. No nesting habitat for this species is available in the Expansion Area or the Study Area.</u>	<u>March to September</u>
Saltmarsh common yellowthroat ( <i>Geothlypis trichas sinuosa</i> )	--/CSC/--	Fresh and saltwater marshes. Requires thick, continuous cover down to water surface for foraging, tall grasses and willows for nesting	Low. No suitable habitat present in the Expansion Area. Possible habitat at the Settlement Basins and riparian habitat in the Study Area.	Year-round
Golden Eagle ( <i>Aquila chrysaetos</i> )	CNDDB G5, S3	Rolling foothills, mountain areas, sage-juniper flats and desert. Cliff-walled canyons and large trees in open areas provide nesting habitat in most parts of its range.	Low. Forest habitat suitable. Expected to occur in the study area.	Year-round

Species	Listing Status Federal/ State/ CNPS Listing	General Habitat	Potential to Occur in the Expansion Area	Period of Identification / Blooming Period
Long-eared owl ( <i>Asio otus</i> )	CNDDB G5, S3	Mature riparian bottoms that have grown to tall willows and cottonwoods; also belts of live oak paralleling creeks. Requires adjacent open land and the presence of old nests of crows, hawks, and magpies for breeding. Suitable habitat is present in the biological study area.	Low. Riparian habitat is not present in the Expansion Area, but known from the study area; could forage in the Expansion Area.	Year-round
Sharp-shinned hawk ( <i>Accipiter striatus</i> )	CNDDB G5, S3	Ponderosa pine, black oak, riparian, mixed conifer and Jeffrey pine habitats. Prefers riparian areas. North facing slopes with plucking perches are critical requirements. Usually nest within 275 feet of water. Suitable habitat is present in the biological study area.	Low. Riparian habitat and water sources not available; could forage in the Expansion Area.	Year-round
<b>Mammals</b>				
Townsend's big-eared bat ( <i>Coryrhinus townsendii</i> )	FSC/CSC/--	Occurs throughout California in a wide variety of habitats. Most common in mesic sites. Colony roosts in the open, hanging from walls and ceilings in caves, buildings. Often associated with mines. Identified in Big Basin quadrangle in association of second growth redwood, Douglas fir, madrone, tanoak, live oak and manzanita. Could occur in the biological study area.	Low. Extremely rare in Santa Cruz County, however the Expansion Area contains suitable habitat. No roost sites (buildings, caves) were found during site surveys.	Year-round
San Francisco dusky-footed woodrat ( <i>Neotoma fuscipes annectens</i> )	--/CSC/--	Deciduous and mixed woodlands, scrub	Present in the Expansion Area.	Year-round
American badger ( <i>Taxidea taxus</i> )	--/CSC/--	Friable soils and relatively open, uncultivated ground. Grasslands, savannas, and mountain meadows near timberline are preferred.	Low. Grassland occurs adjacent to the Expansion Area.	Year-round
<b>Plants</b>				
<u>Marsh sandwort (<i>Arenaria paludicola</i>)</u>	<u>FE/CE</u>	<u>Bogs and fens, marshes and swamps (freshwater). Known from only two occurrences in Mendocino and San Luis Obispo Counties.</u>	<u>None. The species is highly restricted in its distribution and no habitat occurs in the Expansion Area.</u>	<u>May-August</u>
<u>Ben Lomond spineflower (<i>Chorizanthe pungens</i> var. <i>hartwegiana</i>)</u>	<u>FE/--/IB</u>	<u>Lower montane coniferous forest (maritime ponderosa pine sandhills). Known only from sandhill parklands in Santa Cruz County</u>	<u>None. Suitable habitat not present in the Expansion Area.</u>	<u>April-July</u>

Species	Listing Status Federal/ State/ CNPS Listing	General Habitat	Potential to Occur in the Expansion Area	Period of Identification / Blooming Period
<u>Scott's valley spineflower</u> ( <u><i>Chorizanthe robusta</i> var. <i>hartwegiana</i></u> )	<u>FE/--/1B</u>	<u>Meadows and seeps, valley and foothill grasslands. Known from three occurrences in Scotts Valley.</u>	<u>None. Suitable habitat not present within the Expansion Area.</u>	<u>April-July</u>
Robust spineflower ( <i>Chorizanthe robusta</i> var. <i>robusta</i> )	FE/--/1B	Cismontane woodland openings, coastal dunes, coastal scrub/ typically on sandy or gravelly sites	Low. Marginal habitat in the coast live oak and mixed evergreen forest in the Expansion Area. The species may have been observed in grasslands near the Shale Quarry during surveys conducted for the previous (1996) EIR. Not observed during surveys of the Expansion Area.	April-September
Santa Cruz cypress ( <i>Cupressus abramsiana</i> )	FE/CE/1B	Closed-cone coniferous forests, chaparral, lower montane coniferous forest, typically sandstone or granitic. Suitable habitat occurs in the study area.	None. The species was not observed in the study area during historic or current surveys.	Year-round
Santa Cruz wallflower ( <i>Erysimum teretifolium</i> )	FE/CE/1B	Chaparral, lower montane coniferous forest/inland marine sands. Occurs in nearby Bonny Doon Ecological Preserve.	Low. Limited marginal habitat in Expansion Area; species not observed during surveys.	March-July
Santa Cruz tarplant ( <i>Holocarpha macradenia</i> )	FT/CE/1B	Coastal prairie, coastal scrub, valley and foothill grassland, often on clay or sand	Low. Though limited habitat for this species occurs in the Expansion Area, the species was not observed during surveys conducted in the blooming period.	June-October
<u>White-rayed pentachaeta</u> ( <u><i>Pentachaeta bellidiflora</i></u> )	<u>FE/CE/1B</u>	<u>Valley and foothill grassland (often on serpentinite)</u>	<u>None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.</u>	<u>March-May</u>
<u>San Francisco popcorn flower</u> ( <u><i>Plagiobothrys diffusus</i></u> )	<u>FSC/CE/1B</u>	<u>Coastal prairie, valley and foothill grassland. Known from fewer than ten occurrences in Alameda and Santa Cruz Counties</u>	<u>None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.</u>	<u>March-June</u>
<u>Scott's Valley polygonum</u> ( <u><i>Polygonum hickmanii</i></u> )	<u>PE/--/1B</u>	<u>Valley and foothill grassland (mudstone and sandstone)</u>	<u>None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.</u>	<u>May-October</u>
<u>Bent-flowered fiddleneck</u> ( <u><i>Amsinckia lunaris</i></u> )	<u>--/--/1B</u>	<u>Coastal bluff scrub, valley and foothill grassland</u>	<u>None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.</u>	<u>March-June</u>
Santa Cruz manzanita ( <i>Arctostaphylos andersonii</i> )	--/--/1B	Open sites and edges of chaparral, coniferous and evergreen forests. Suitable habitat may occur in the study area.	None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.	November-April
Pajaro manzanita ( <i>Arctostaphylos pajaroensis</i> )	--/--/1B	Chaparral (sandy). Suitable habitat may occur in the study area.	None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.	December-March
Bonny Doon manzanita ( <i>Arctostaphylos silvicola</i> )	--/--/1B	Closed-cone coniferous forest, chaparral	Low. Limited marginal habitat in the Expansion Area; species was not found during surveys.	February-March

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San Francisco collinsia ( <i>Collinsia multicolor</i> )	--/--/1B	Closed-cone coniferous forest, sometimes serpentinite. Suitable habitat occurs in the study area.	None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.	March-May
<u>Ben Lomond buckwheat</u> ( <i>Eriogonum nudum</i> var. <i>decurrens</i> )	<u>--/--/1B</u>	<u>Chaparral, maritime ponderosa pine sandhills, sandy</u>	<u>None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.</u>	<u>June-October</u>
Kellogg's horkelia ( <i>Horkelia cuneata</i> spp. <i>sericea</i> )	--/--/1B	Closed-cone coniferous forest, chaparral (maritime), sandy or gravelly, open	Low. Limited marginal habitat in Expansion Area; species not found during surveys.	April-September
<u>Point Reyes horkelia</u> ( <i>Horkelia marinensis</i> )	<u>--/--/1B</u>	<u>Coastal dunes</u>	<u>None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.</u>	<u>May-September</u>
Marsh microseris ( <i>Microseris paludosa</i> )	--/--/1B	Closed cone forest, valley and foothill grasslands. Suitable habitat present in the study area.	None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.	April-July
Santa Cruz Mountains beardtongue ( <i>Penstemon rattanii</i> var. <i>kleei</i> )	--/--/1B	Chaparral. Habitat occurs in the study area.	None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.	May-June
<u>Monterey pine</u> ( <i>Pinus radiata</i> )	<u>--/--/1B</u>	<u>Closed cone coniferous forest</u>	<u>Low. Limited marginal habitat in Expansion Area; species not found during surveys.</u>	<u>April</u>
<u>Santa Cruz clover</u> ( <i>Trifolium buckwestiorum</i> )	<u>--/--/1B</u>	<u>Broadleafed upland forest</u>	<u>None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.</u>	<u>April-October</u>
Schreiber's manzanita ( <i>Arctostaphylos glutinosa</i> )	--/--/1B	Closed-cone coniferous forest, chaparral	Low. Limited marginal habitat in Expansion Area; species not found during surveys.	November
Santa Cruz Mountains pussypaws ( <i>Calyptidium parryi</i> var. <i>hesseae</i> )	--/--/3	Chaparral. Habitat occurs in the study area.	None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.	May-July
<u>San Francisco gumplant</u> ( <i>Grindelia hirsutula</i> var. <i>maritime</i> )	<u>--/--/1B</u>	<u>Coastal bluff scrub, valley and foothill grassland, sandy or serpentine</u>	<u>None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.</u>	<u>June-September</u>
<u>Smooth Lessingia</u> ( <i>Lessingia micradenia</i> var. <i>glabrata</i> )	<u>--/--/1B</u>	<u>Chaparral, serpentinite, often roadsides</u>	<u>None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.</u>	<u>July-November</u>
Mt. Diablo cottonweed ( <i>Micropus amphibolus</i> )	--/--/3	Broadleaf upland forest, chaparral, valley foothill grassland. Habitat occurs in the study area.	None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.	March-May
Choris's popcorn flower ( <i>Plagiobothrys chorizianus</i> var. <i>chorizianus</i> )	--/--/1B	Chaparral. Habitat occurs in the study area.	None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.	March-June
San Francisco campion ( <i>Silene verecunda</i> spp. <i>verecunda</i> )	--/--/1B	Coastal bluff scrub, chaparral, valley foothill grassland. Habitat occurs in the study area.	None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.	March-August

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Santa Cruz microseris ( <i>Stebbinsoseris decipiens</i> )	--/--/1B	Broadleaved upland forest, chaparral, valley foothill grassland area, sometimes serpentine. Habitat occurs in the study area.	None. Habitat for this species is not present in the Expansion Area; species was not found during surveys.	April-May
<b>Habitats</b>				
<u>Coastal Brackish Marsh</u>	<u>CNDDB G2, S2.1</u>	<u>Usually supports a complex mosaic including multiple dominant species such as <i>Distichlis spicata</i>, <i>Salicornia</i> species, and <i>Scirpus</i> species.</u>	<u>None. Does not occur in Expansion Area.</u>	<u>Year-round</u>
<u>Maritime Coast Range Ponderosa Pine Forest</u>	<u>CNDDB G1, S1.1</u>	<u>Ponderosa pine sole, dominant, or important tree with black oak or incense-cedar in canopy; canyon live oak, Coulter pine, Douglas-fir, interior live oak, Jeffrey Pine, sugar pine, and/or white fir may be present.</u>	<u>None. CNDDB lists this habitat along both sides of Martin Road, north of Bonny Doon. This habitat not found within Expansion Area during field surveys and habitat mapping.</u>	<u>Year-round</u>
<u>Monterey Pine Forest</u>	<u>CNDDB G1, S1.1</u>	<u>Three native stands of Monterey Pine now occur in the world. One in San Luis Obispo, one in Monterey County and one near Waddell Creek in Santa Cruz County.</u>	<u>None. Does not occur in the Expansion Area.</u>	<u>Year-round</u>
North Central Coast California Roach/Stickleback/Steelhead Stream	CNDDB Unranked	Associated with native fish including: steelhead, coho salmon (rare), California Roach, 3-spine stickleback, Pacific lamprey, and ruffle and prickly sculpin.	This habitat does not occur in the Expansion Area, but does occur downstream of the project. Steelhead occur in the lower reaches of Liddell Creek below the project area.	Year-round
<u>North Central Coast Drainage Sacramento Sucker/Roach River</u>	<u>CNDDB Unranked</u>	<u>Associated with native fish including: steelhead, coho salmon, Pacific lamprey, Sacramento sucker, California roach, speckled dace, 3-spine stickleback, and sculpin spp.</u>	<u>None. This habitat does not occur in the Expansion Area. Known to occur in San Lorenzo Creek and its tributaries, and Kings, Boulder, Bear, Fall, Zavante, and Bean Creeks.</u>	<u>Year-round</u>
North Central Coast Short-Run Coho Stream	CNDDB Unranked	Usually coho salmon and steelhead spawning streams. Also found with stickleback, sculpin spp. and Pacific lamprey.	No suitable habitat in the Expansion Area. Coho salmon is known to spawn in San Vicente Creek, approximately 1 mile north of the project area. Known to occur in Scott and Waddell Creeks. The species is not known to occur in Liddell Creek. (NMFS, 2004).	Year-round
<u>Northern Coastal Salt Marsh</u>	<u>CNDDB G3, S3.2</u>	<u>A complex and annually variable mosaic of multiple species such as <i>Spartina</i> species, <i>Salicornia</i> species, <i>Distichlis spicata</i>, <i>Jaumea carnosa</i>, and <i>Grindelia stricta</i> var. <i>angustifolia</i>.</u>	<u>None. This habitat was not found during field surveys and habitat mapping.</u>	<u>Year-round</u>

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<a href="#">Northern Interior Cypress Forest</a>	<a href="#">CNDDB G2, S2.2</a>	<a href="#">Santa Cruz cypress sole or dominant tree in canopy; canyon live oak, knobcone pine, and/or ponderosa pine may be present. Nearest occurrence of <i>Cupressus abramsiana</i> is at the Bonny Doon Ecological Reserve (CNDDB).</a>	<a href="#">None. This habitat was not found during field surveys and habitat mapping.</a>	<a href="#">Year-round</a>
Northern Maritime Chaparral	CNDDB G1, S1.2	Scrub oak sole or dominant shrub in canopy; blue blossom, California coffeeberry, chamise, chaparral pea, chaparral whitethorn, hollyleaf redberry, interior live oak, manzanita, poison oak, red shank, and/or toyon may be present.	None. This habitat was not found in the Expansion Area during field surveys and habitat mapping.	Year-round
Coastal Scrub	County of Santa Cruz	Plants are generally under six feet tall and include buckwheat, sagebrush, yarrow, lupine, coyote bush, poison oak, coffeeberry.	Present in the northern portion of the Boundary Expansion Area	Year-round
Native Grassland	County of Santa Cruz	Grassland dominated by native needlegrass, fescue, melic, wildrye, and bluegrass species. Occurs in the study area.	None. Not present in the Expansion Area	Year-round

**United States Fish and Wildlife Service classifications:**

- FE = Species in danger of extinction throughout all or significant portion of its range.
- FT = Species likely to become endangered within foreseeable future throughout all or significant portion of its range.
- PE = Species proposed endangered.
- PT = Species proposed threatened.
- FC = Candidate information now available indicates that listing may be appropriate with supporting data currently on file.
- FSC = Species of special concern.

**California Department of Fish and Game classifications:**

- CE = State listed as endangered. Species whose continued existence in California is jeopardized.
- CT = State listed as threatened. Species, although not presently threatened with extinction, may become endangered in the foreseeable future.
- CR = State listed as rare. Plant species, although not presently threatened with extinction, may become endangered in the foreseeable future.
- CSC = California species of special concern. Animal species with California breeding populations that may face extinction in the near future.
- CP = Fully protected by the State of California under Section 3511 and 4700 of the CDFG Code.

**California Native Plant Society classifications:**

- List 1A = Plants that are presumed extinct in California.
- List 1B = Plants that are Rare, Threatened, or Endangered in California and elsewhere.
- List 2 = Plants that are Rare, Threatened or Endangered in California but more common elsewhere.
- List 3 = Plants for which more information is needed.
- List 4 = Plants of limited distribution.

**California Natural Diversity Rankings:**

- Global rank (G) reflects overall condition (rarity and endangerment) of an element throughout its range.
- G1 = Less than 6 Element Occurrences (EO) OR less than 1,000 individuals OR less than 2,000 acres
- G2 = 6 - 20 EOs OR 1,000 - 3,000 individuals OR 2,000 - 10,000 acres
- G3 = 21 - 100 EOs OR 3,000 - 10,000 individuals OR 10,000 - 50,000 acres
- State rank (S) reflects overall condition (rarity and endangerment) of an element within the State of California.
- S1 = Less than 6 Element Occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres:
- S1.1 = Very threatened
- S1.2 = Threatened

S2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres:  
S2.1 = Very threatened  
S2.2 = Threatened  
S3 = 21-100 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres:  
S3.2 = Threatened

**County of Santa Cruz,**  
Section 16.32 of the County Code, Sensitive Habitat Protection.

Sources: CDFG, 2007; CNPS, 2001; USFWS, 2003, County of Santa Cruz 1994.