

Background Report: Biology and Environment of the Trinidad Planning Area



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for
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TABLE OF CONTENTS	PAGE
I.) INTRODUCTION	4
II.) CLIMATE	6
PRECIPITATION	6
OCEAN TEMPERATURE	6
AIR TEMPERATURE, WINDS AND HUMIDITY	6
III.) LAND USE	8
IV.) TERRESTRIAL (SOILS/GEOLOGY)	8
V.) HYDROLOGY	11
VI.) VEGETATION AND HABITAT TYPES	14
COASTAL SCRUB	14
GRASSLANDS	14
RIPARIAN VEGETATION	15
CONIFER FORESTS	15
VII.) RARE, THREATENED OR ENDANGERED SPECIES	18
CNPS LISTS	18
CALIFORNIA NATURAL DIVERSITY DATABASE SPECIES AND DESCRIPTIONS	24
VIII.) SUMMARY OF CONCERNS	35
IX.) RECOMMENDATIONS	36
X.) REFERENCES	43

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List of Figures	Page
Figure 1.)The general Trinidad Planning Area as addressed in this report	5
Figure 2.) Average Monthly Temperatures	7
Figure 3.) Slopes in the Trindad Area.	10
Figure 4.) Watersheds and Mapped Wetlands of the Trinidad Planning Area	13
Figure 5.) Vegetation Covertypes in the Trinidad Planning Area.	17
Figure 6.) Map of CNDDDB Occurrences in the Trinidad Planning Area (add information /planning area and doublecheck for updates)	25

List of Tables	Page
Table 1.) Plants Listed in the CNPS Online Inventory for the Trinidad Planning Area	21
Table 2.) Rare Threatened or Endangered Species Listed in the CNPS Online Inventory for the Trinidad Planning Area.	31

I.) INTRODUCTION

Trinidad is a coastal town located in Humboldt County, CA. The area is characterized by a steep, rugged coastline and the climate heavily influenced by the topography, vegetation and marine factors. The primary developed area of Trinidad is relatively flat, but the surrounding area contains steep watersheds and coastal bluffs. The city itself covers an area of about 312 acres (TGPU 2008). The Trinidad planning area contains several habitats which support diverse and unique wildlife, both within the city limits and in the surrounding areas. Some of these areas are considered Environmentally Sensitive Habitat Areas (ESHAs). The Kelp beds around Trinidad Head, wetland and riparian habitats and residual patches of Sitka spruce communities represent areas of special biological concern and are given special protection.

The purpose of this report is to summarize the most recent information pertaining to the biological and environmental concerns in the Trinidad Planning Area. The Trinidad Planning Area is located within the Trinidad and Crannell USGS Quadrangles and is delimited by the watershed boundaries of Burris Creek to the north and Two Creeks to the south (Figure 1.). The information provided in this report will be used to update the Conservation, Safety, and Open Space Elements of the City's General Plan.

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Figure 1.)The general Trinidad Planning Area as addressed in this report

II.) CLIMATE

Precipitation

The Trinidad Planning Area climate is dominated by marine factors due to its proximity to the Pacific Ocean. During summer months, a region of high pressure lies off of the coast which generates northwesterly winds and coastal fog. The high pressure zone moves southward and is replaced by a low pressure zone off the coast. Cool, moist air masses move toward the coast during winter months, and upon contacting the hills, are uplifted and cooled causing copious precipitation. This results in a winter climate typically consisting of days of high cool cloudiness accompanied by precipitation, and on cloudless days, with morning frost and ground fog. Measurable rainfall occurs on 118 days each year at Humboldt Bay and on 190 days in the mountains. The annual average precipitation at Trinidad is 38.10 inches. Winter months tend to be wetter than summer months; December has an average rainfall of 6.35 Inches. Very occasionally snow or hail falls in Trinidad, though it rarely persists.

Ocean Temperature

There is another California weather characteristic that results from the location of the Pacific high. The steady flow of air from the northwest during the summer helps to drive the California Current of the Pacific Ocean as it sweeps southward almost parallel to the California coastline. However, since the mean drift is slightly offshore, there is a band of upwelling immediately off the coast as water from deeper layers is drawn into the surface circulation. The water from below the surface is colder than the semi-permanent band of cold water just offshore, which ranges from 25 to 50 miles in width.

The temperature of water reaching the surface from deeper levels varies from about 49° F in winter to 55° F in late summer along the northern California coast. At a distance of 200 to 300 miles offshore, surface water temperatures range from 51 ° to 65 ° F. Thus, the water near the coastline is as much as 10° colder during the summer than is the water farther west.

Air Temperature, Winds and Humidity

Trinidad is located in the temperate zone of California. Warm winters, cool summers, small daily and seasonal temperature ranges are characteristic of this area. Largely as a result of the proximity of the cool Pacific Ocean, the adjoining coastal area has one of the coolest, most stable temperature regimes to be found anywhere. The warmest month of the year is August with an average maximum temperature of 63.90 degrees Fahrenheit, while the coldest month of the year is December with an average minimum temperature of 40.60 degrees Fahrenheit. Temperature variations between night and day tend to be fairly limited during summer with a difference that can

reach 11 degrees Fahrenheit, and fairly limited during winter with an average difference of 14 degrees Fahrenheit.

During most of the year, the prevailing wind is from the southwest or west. However, even in the middle of winter, such wet periods often alternate with times of fair weather, when the winds will switch back around to the north. Strong southerly winds are usually the result of winter storm systems and their associated cold fronts. Extreme wind velocities on the coast can be expected to reach 50 mph at least once in two years; 60 to 30 mph once in 50 years; and 80 mph once in 100 years.

The maritime climate of coastal Humboldt County is characterized by high relative humidity the entire year and is maintained throughout the dry season (May through September) by fog and clouds. Because of the moisture and moderate temperature the average relative humidity is high.

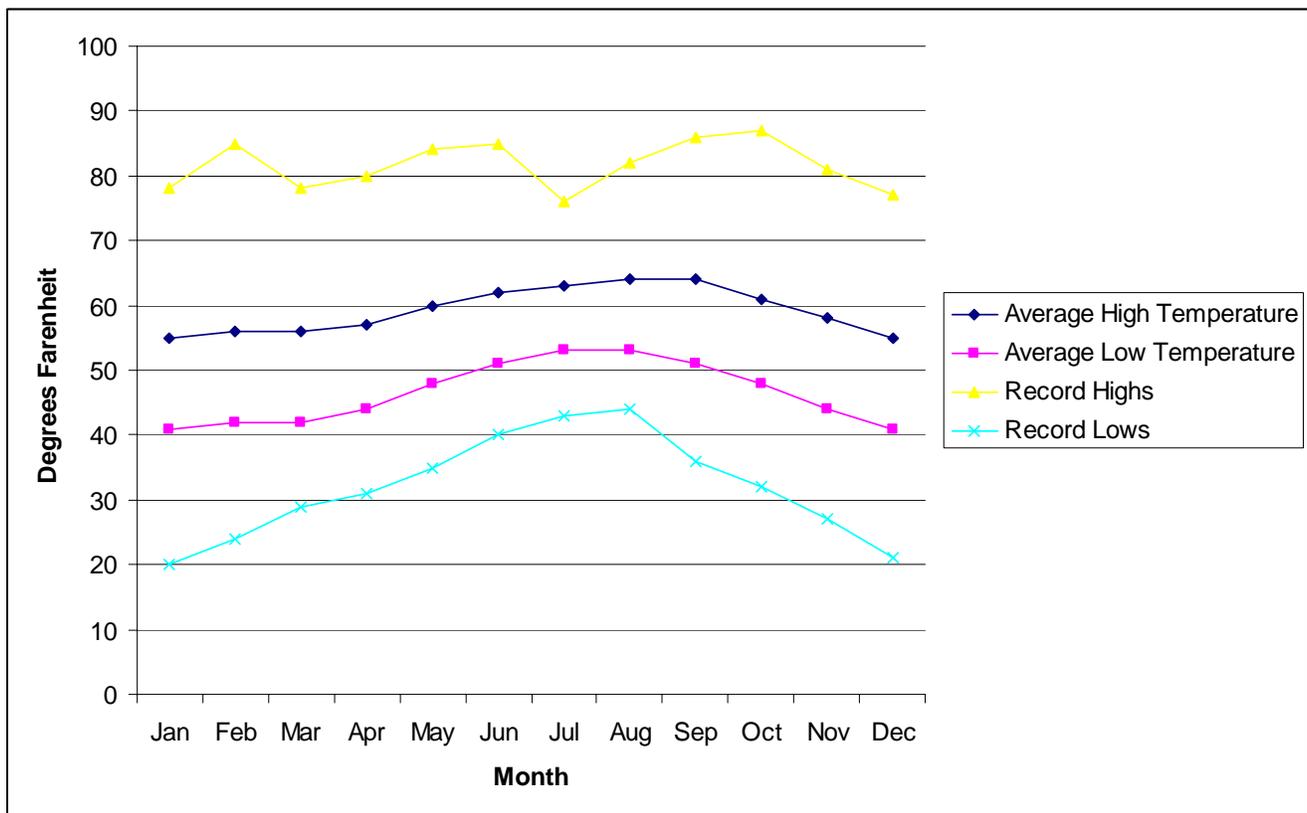


Figure 2.)Average Monthly Temperatures (Data for figure was obtained from The Weather Channel website <http://www.weather.com/weather/wxclimatology/monthly/USCA1160> accessed October 15, 2009

III.) LAND USE

Overall, Trinidad's land use is characterized by dense residential and commercial areas on the western side of town and lower-density residential areas east of the freeway. Commercial services are mainly located along the primary traffic route from the freeway interchange down to the harbor. Areas near the edges of City limits are mainly reserved for open space and resource preservation. Trinidad has eight zoning designations that are identical to General Plan designations: Open Space, Suburban Residential, Urban Residential, Special Environment, Planned Development, Commercial Public and Religious, and Visitor Services.

Nearly the whole of Trinidad is within the California Coastal Zone. The State Coastal Commission must certify every general plan and zoning ordinance drafted by jurisdictions in the Coastal Zone. The Trinidad Harbor area is the only part of town where the City's zoning and General Plan designations have not been certified by the California Coastal Commission. Consequently, the Coastal Commission retains permitting authority over approximately 10 acres of land in this area. The present zoning of the harbor area is unclear. The City drafted and adopted a Harbor zoning designation in 1992, but the designation was rejected by the Coastal Commission. The Harbor zoning would have been applied to about 10 acres of land and 33 acres of water. Trinidad's application to the Coastal Commission was denied on the basis that the Harbor zone would not provide sufficient protection of coastal resources and coastal-dependent uses. Currently harbor-area lands are presently considered to fall under the Open Space and Commercial zoning designations.

IV.) TERRESTRIAL (SOILS/GEOLOGY)

The entire Trinidad Planning Area is underlain by a geologic unit commonly referred to as the Franciscan Formation, or Franciscan Complex. Franciscan rocks have their origins in the deep sea, where they were formed by turbidity currents that deposited sand, mud, gravel, and silica from the shells of marine creatures. These substances accumulated over tens of millions of years and hardened to form sandstone, shale, conglomerate, greenstone, and chert. Geologists refer to this formation as a *mélange* because of its mixture of different rock types. Over time, these rocks have been uplifted by seismic activity to their present location above sea level. Seismic activity has also caused breakage and deformation of these rocks. As a result, the Franciscan Formation consists of blocks of resistant sedimentary and metamorphic rock within a matrix of sheared, deformed, and highly erodible rock.

Local topography is characterized by a series of marine terraces, which in cross-section have the appearance of wide stair-steps. These gently sloping surfaces were formed in the geologic past

by wave erosion and deposition, and have been moved above sea level due to periodic sea-level changes and uplifting of the coastline. The terrace surfaces range in elevation from about 140 feet at the western edge of town, to 600 feet at the eastern edge of the Trinidad Planning Area. Most of the ground surface in Trinidad has a slope of 15% or less, but steeper slopes are found at sea cliffs, stream banks, and the boundaries between marine terraces (Figure 2).

Alluvial deposits have accumulated on the terraces over time; they are typically composed of sand, silt, and gravel. These deposits range in thickness from a few inches to more than 100 feet. Information on specific soil types will not be available until an official soil survey is completed from Humboldt County.

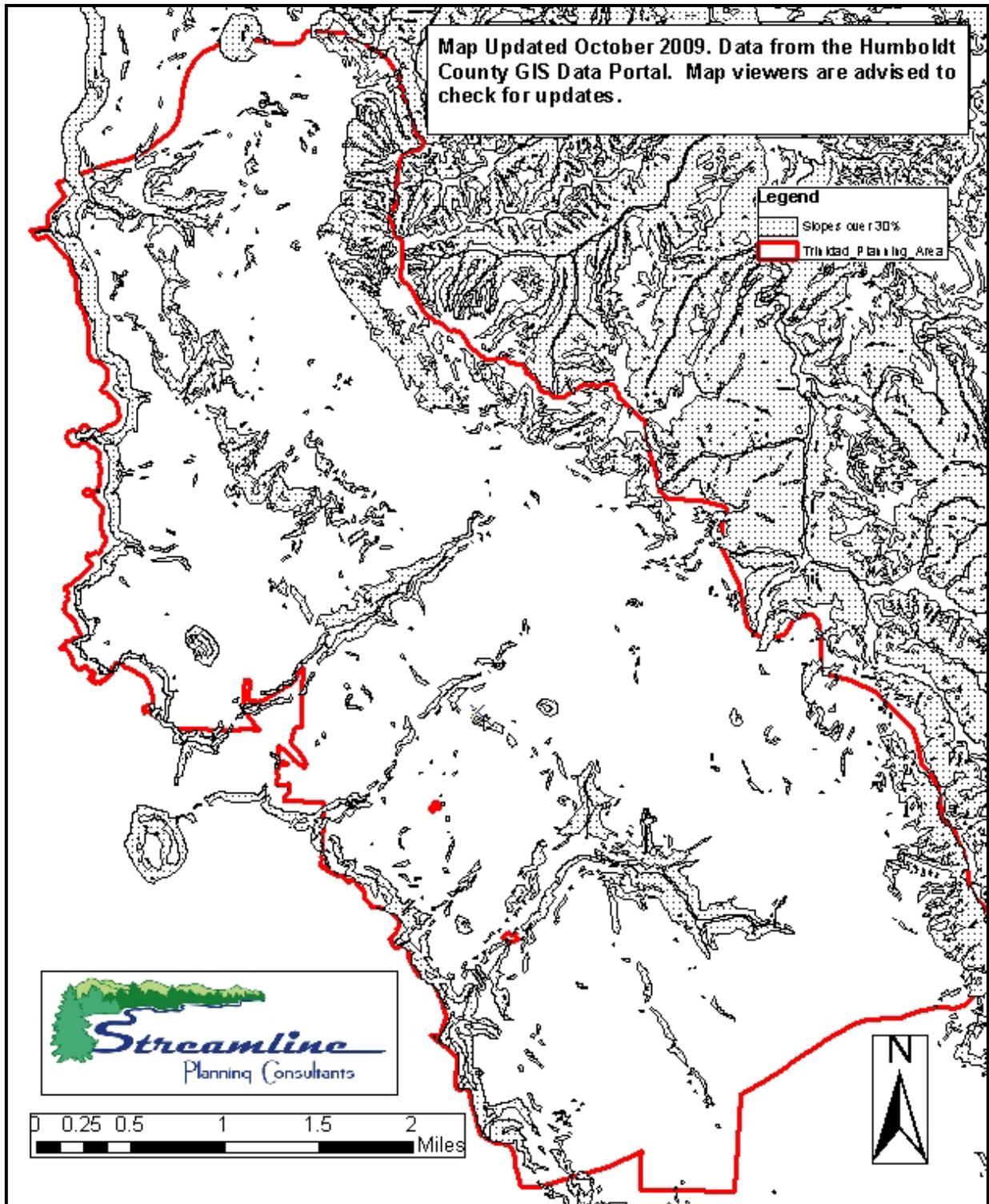


Figure 3.) Slopes in the Trinidad Area.

V.) HYDROLOGY

Rivers and Streams

The Trinidad Planning Area contains the watersheds of thirteen perennial coastal streams. The entire city of Trinidad is within the designated Coastal Zone and as such is also subject to protection and regulation under the Coastal Zone Management Act. The major coastal streams in the City are Mill Creek, McConnahas Mill Creek, and Parker Creek. Little information, however, is available regarding stream flow rates in Trinidad. The Trinidad Planning Area watersheds generally have high drainage densities, and thus are quite variable in flow rates, both seasonally and in response to individual storms.

Luffenholtz Creek, the most sensitive watershed because it is Trinidad's water supply, is 1.7 miles south of Trinidad, outside of City boundaries. The City of Trinidad removes approximately 100,000 gallons of water daily for its water use in the dry months, or about 10% of the total flow. Mill Creek is the historical water supply source and the City's secondary supply.

Trinidad's water quality has been an issue of concern. As stated in the Tsurai Management Plan:

Water quality issues have previously been identified in past water sampling and monitoring of the three streams that flow through the Tsurai Study Area (TSA) and into the protected Bay. Preliminary water sampling has detected the presence of fecal coliform in the streams that pass through the TSA, but its source is not yet known. In addition, erosion and sedimentation within site and beach areas may be affecting water quality in the Bay.¹⁵

To monitor and assess the creeks and rivers, Trinidad secured a Proposition 50: Clean Beaches Grant which is being implemented until 2011.

Other Wetlands

Wetlands are areas where water covers the soil, or is present either at or near the surface of the soil all year or for varying periods of time during the year, including during the growing season. Water saturation (hydrology) largely determines how the soil develops and the types of plant and animal communities living in and on the soil. Wetlands may support both aquatic and terrestrial species. The prolonged presence of water creates conditions that favor the growth of specially adapted plants (hydrophytes) and promote the development of characteristic wetland (hydric) soils (ACOE 1987)

Wetlands vary widely because of regional and local differences in soils, topography, climate, hydrology, water chemistry, vegetation, and other factors, including human disturbance. Two

general categories of wetlands are recognized: coastal or tidal wetlands and inland or non-tidal wetlands.

Coastal wetlands in the United States, as their name suggests, are found along the Atlantic, Pacific, Alaskan, and Gulf coasts. They are closely linked to our nation's estuaries, where sea water mixes with fresh water to form an environment of varying salinities. The salt water and the fluctuating water levels (due to tidal action) combine to create a rather difficult environment for most plants. Consequently, many shallow coastal areas are unvegetated mud flats or sand flats. Some plants, however, have successfully adapted to this environment. Certain grasses and grasslike plants that adapt to the saline conditions form the tidal salt marshes that are found along the Atlantic, Gulf, and Pacific coasts. Some tidal freshwater wetlands form beyond the upper edges of tidal salt marshes where the influence of salt water ends. There are numerous coastal wetlands just north of the planning area including Stone Lagoon and Big Lagoon.

Inland wetlands are most common on floodplains along rivers and streams (riparian wetlands), in isolated depressions surrounded by dry land (for example, playas, basins, and "potholes"), along the margins of lakes and ponds, and in other low-lying areas where the groundwater intercepts the soil surface or where precipitation sufficiently saturates the soil (vernal pools and bogs). Inland wetlands include marshes and wet meadows dominated by herbaceous plants, swamps dominated by shrubs, and wooded swamps dominated by trees. Due to the steep topography and high channelization of the streams in the Trinidad Planning Area, many of these inland wetland types are not present. The Trinidad Planning Area has numerous isolated forested spring and seeps along the steep coastal terraces however, and these wetlands can be difficult to detect with aerial photography and remote sensing. Field surveys and ground truthing are often necessary to adequately identify wetland habitats in this region.

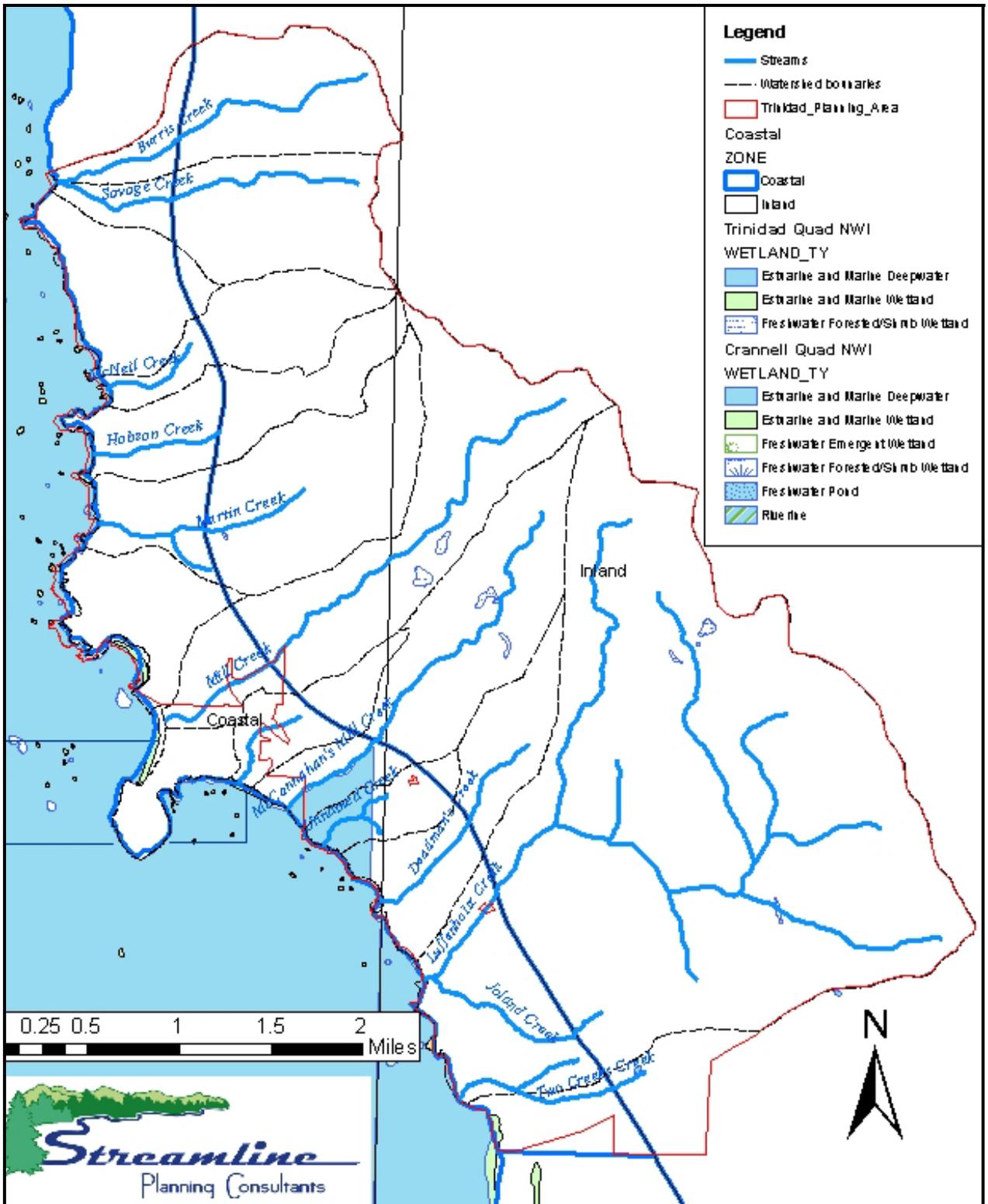


Figure 4.)Watersheds and Mapped Wetlands of the Trinidad Planning Area

VI.) VEGETATION AND HABITAT TYPES

Trinidad and the surrounding area is primarily composed of Northern (Franciscan) Coastal Scrub, Northern Coastal Bluff Scrub, Non-Native Grassland, Sitka Spruce-Douglas Fir Forest, Red Alder Riparian Forest and Riparian Scrub. Vegetation types have been described using various sources including, but not limited to, Holland's 1986 Preliminary Descriptions of Natural Communities and A Manual of California Vegetation (Sawyer 1995).

Coastal Scrub

Northern (Franciscan) Coastal Scrub is characterized by low shrubs, up to 2 meters tall, in dense patches. This vegetation type occurs on windy, exposed sites with shallow, rocky soils. Dominant species include Cascara (*Frangula purshiana*), Blue blossom (*Ceanothus thyrsiflorus*), Twinberry (*Lonicera involucrata*) and Silk tassel (*Garrya elliptica*). Associated native species include Douglas Iris (*Iris douglasiana*), Sticky monkey flower (*Mimulus aurantiacus*), Evergreen huckleberry (*Vaccinium ovatum*), Bracken fern (*Pteridium aquilinum* var. *pubescens*), Bee plant (*Scrophularia californica*), and Wild cucumber (*Marah oreganum*). Northern Coastal Bluff Scrub is less abundant and occurs on sites that are even more exposed sites with nearly constant winds and high salt content. Soil is rocky and poorly developed. This community type is characterized by similar species as Northern Coastal Scrub, but the plants are low and often prostrate (5-50cm high) and form continuous mats. In addition to dwarf shrubs, this community contains herbaceous perennials, annuals and varying degrees of succulents. Common native species include Coyote brush (*Baccharis pilularis*), Salal (*Gaultheria shallon*), leather fern (*Polypodium scoleri*), beach strawberry (*Fragaria chiloensis*), Pacific stonecrop (*Sedum spathulifolium*), Ocean bluff blue grass (*Poa unilateralis*), California bentgrass (*Agrostis densiflorus*), and Alumroot (*Heuchera micrantha*).

The area also has Northern Coastal Bluff Scrub along the coastal bluffs. Northern Coastal Bluff Scrub is similar to Northern Coastal Scrub, however it is much shorter and is highly influenced by the high winds and salinity of the ocean. Shrubs and trees are generally dwarfed and deformed and there are large patches of exposed rock and soil as well as smaller herbaceous plants, grasses and succulents interdispersed with the shrub and tree species.

Grasslands

Many disturbed or degraded areas that were originally native grasslands or scrub have now been replaced with Non-native grasslands. These areas have dense to sparse cover of annual grasses with flowering culms up to 1 meter high. These areas are often associated with numerous species of showy-flowered, native annual forbs ("wildflowers"), especially in years of favorable rainfall. Most plants grow in spring and summer and die back in the fall, persisting as

seeds. This community type generally exists on soils that are fine-textured, clay-dominated and often waterlogged during the rainy season, but drier in summer and fall. Dominant species include Wild oats (*Avena* sp.), Sweet vernal grass (*Anthoxanthum odoratum*), Rattlesnake grass (*Briza* sp.), Lupine (*Lupinus* sp.), Ox-eyed daisy (*Leucanthemum vulgare*), Cudweed (*Gnaphalium* sp.), Flax (*Linum bienne*), European hairgrass (*Aira caryophylla*), Bentgrass (*Agrostis* sp.), Brome Bromus sp. (brome), Storksbill (*Erodium* sp.), Ryegrass (*Lolium* sp.), Black medick (*Medicago lupulina*), Foxtail fescue (*Vulpia* sp.) and Trefoil (*Lotus* sp.)

The area likely contained other native grassland types such as Coastal Prairie historically, but many of these areas have been developed or degraded by invasive species. Isolated areas of relatively intact grasslands and prairies exist just outside of the area near Patrick's Point and in the Redwood Creek drainage.

Riparian Vegetation

North Coast Riparian Scrub is also present near streams and other wet to mesic areas. This community type is an early seral, broad-leafed deciduous riparian thicket usually dominated by any of several *Salix* species, together with several other fast growing shrubs and vines. This type is found on sand and gravel bars along and at the mouths of streams, within the coastal fog incursion zone. In addition to Willows (*Salix* sp.), this community type has a large component of the following species: Big leaf maple (*Acer macrophyllum*), Wax myrtle (*Myrica californica*), Red elderberry (*Sambucus racemosa*) and Twinberry (*Lonicera involucrata*). The understory is generally sparse and contains hydrophytic species including ferns, rushes, sedges and herbaceous plants.

Areas near watercourses and steep areas with seeps or springs are generally dominated by Red Alder Riparian Forest. This community type is mesic, dense, broad-leafed forest up to 25 meters tall and heavily dominated by Red alder (*Alnus rubra*). The understory varies from site to site, but is often dense and dominated by shrubs. Soils are generally richer here, but are often poorly aerated. Species which are commonly associated with this forest type include Willow (*Salix* sp.), Lady fern (*Athyrium filix-femina*), Horsetail (*Equisetum arvense*), Velvet grass (*Holcus lanatus*), Bitter cherry (*Prunus emarginata*), Cow parsnip (*Heracleum lanatum*), Blackberry (*Rubus* sp.) and Seep monkeyflower (*Mimulus guttatus*). There is often a large component of non-vascular species (fungus, mosses, liverworts and lichens) on the ground and on tree trunks and downed woody debris.

Conifer Forests

The entire area contains patches of Sitka Spruce-Grand Fir Forest, which is dense forest dominated by coniferous evergreen trees up to 35 meters tall. Stands are usually shorter and wind-pruned on exposed headlands. There is often a dense understory of broadleaved trees,

shrubs and perennial herbs, including several species of ferns. This community type occurs on moist, well-drained soils of seaward slopes and coastal headlands, with strong sea winds, frequent fogs, and small annual temperature fluctuation. In addition to Sitka spruce (*Picea sitchensis*) and Grand fir (*Abies grandis*), this community also contains Douglas fir (*Pseudotsuga menziesii* var. *menziesii*), Hemlock (*Tsuga heterophylla*), Western red cedar (*Thuja plicata*) and Bishop pine (*Pinus muricata*), False Solomon's seal (*Smilacena racemosa*), False lily of the Valley (*Maianthemum dilatatum*), bedstraw (*Galium* sp.), Redwood sorrel (*Oxalis oregana*), and hedgenettle (*Stachys ajugoides*). Canopy cover is often dense and the understory ranges from moderate to sparse.

The Planning area also contains patches of Redwood Forest which is dominated by Coast redwood (*Sequoia sempervirens*), Douglas fir (*Pseudotsuga menziesii* var. *menziesii*), California bay (*Umbellularia californica*), Bracken fern (*Pteridium aquilinum* var. *pubescens*), Chain fern (*Woodwardia fimbriata*), Oregon grape (*Berberis nervosa*), Redwood sorell, Sword fern (*Polystichum munitum*), and Trillium (*Trillium ovatum*),

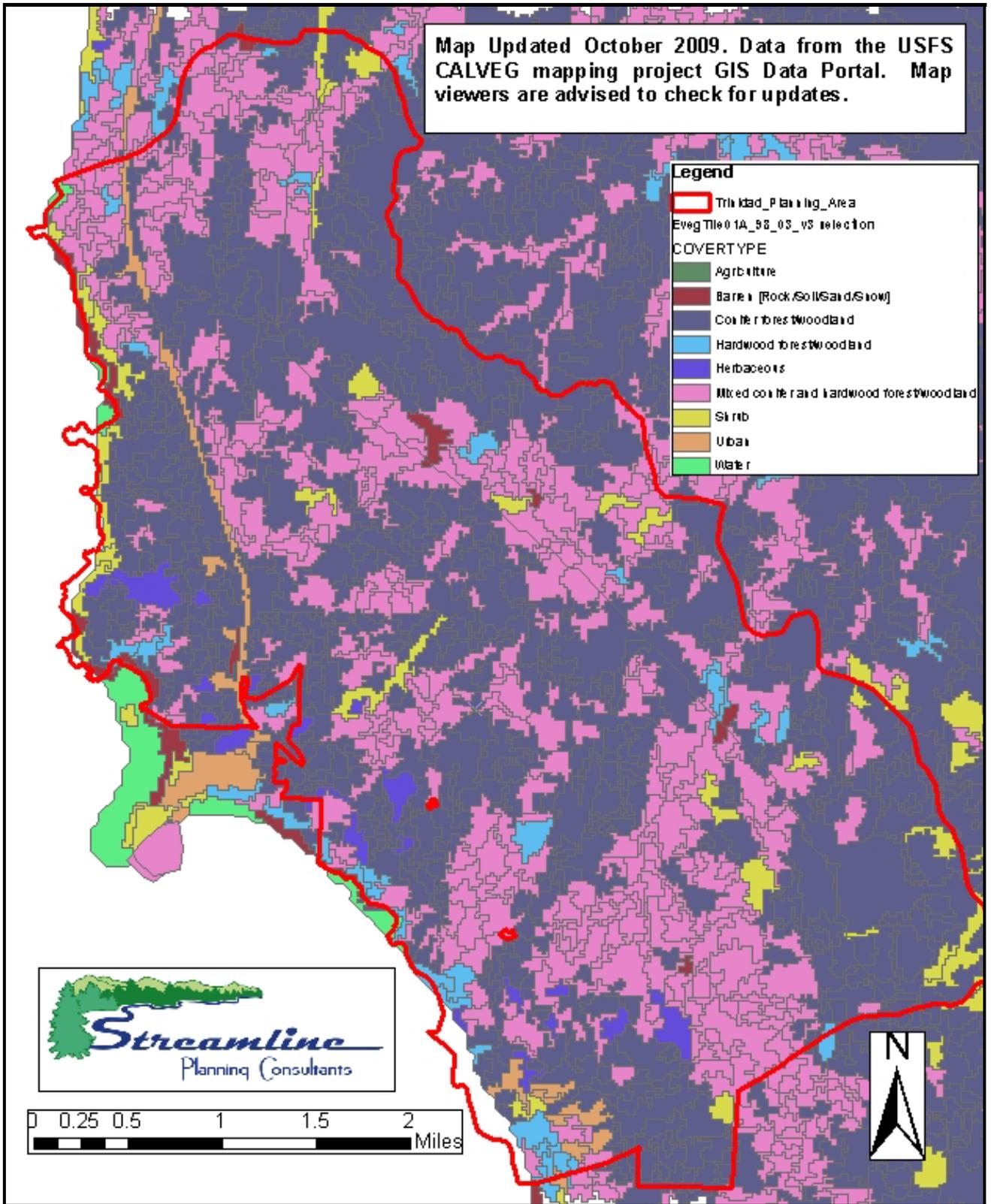


Figure 5.)Vegetation Covertypes in the Trinidad Planning Area.

VI.) ENVIRONMENTALLY SENSITIVE HABITAT AREAS (ESHAS)

An environmentally habitat sensitive area is an area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments (PRC Division 20 CCA § 30107.5). Protection of ESHAs is one of the essential aspects of the Coastal Act. Trinidad has several ESHAs including, but not limited to, portions of coastal bluffs, biologically rich tide pools, nesting grounds, kelp beds, wetlands, riparian habitats, and rare, threatened, or endangered plants or plant communities. The definition of what constitutes an ESHA has been expanded to include the following

- •Any habitat area that is rare or especially valuable because of its special nature or role in an ecosystem and is easily degraded or disturbed by human activities or developments.
- •Any habitat area of plant or animal species designated as rare, threatened, or endangered under State or Federal law.
- •Any habitat area of species designated as Fully Protected or Species of Special Concern under State law or regulations.
- •Any habitat area of plant species for which there is compelling evidence of rarity, for example, those designated 1b (Rare or endangered in California and elsewhere) or 2 (rare, threatened or endangered in California but more common elsewhere) by the California Native Plant Society.

Approximate locations of wetland and riparian areas are shown above in Figure **x**

VII.) RARE, THREATENED OR ENDANGERED SPECIES

The following rare, threatened or endangered (RTE) species are known to occur in the Trinidad Planning Area. This list was compiled using the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDDB) for the Trinidad Quadrangle on August 6, 2009 (Figure 1). The California Native Plant Society (CNPS) has created five "lists" in an effort to categorize degrees of concern for plant species. Please see the Online Inventory for information about the number of plant taxa in each category and for more information about the species tracked as rare by CNPS. The CNPS lists are described as follows:

CNPS Lists

CNPS has created five "lists" in an effort to categorize degrees of concern. Please see the Online Inventory for information about the number of plant taxa in each category and

for more information about the species tracked as rare by CNPS. The CNPS lists are described as follows:

➤ **List 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere**

The plants of List 1B are rare throughout their range with the majority of them endemic to California. Most of the plants of List 1B have declined significantly over the last century. List 1B plants constitute the majority of the plants in CNPS' Inventory with more than 1,000 plants assigned to this category of rarity. All of the plants constituting List 1B meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

➤ **List 2: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere**

Except for being common beyond the boundaries of California, the plants of List 2 would have appeared on List 1B. From the federal perspective, plants common in other states or countries are not eligible for consideration under the provisions of the Endangered Species Act. Until 1979, a similar policy was followed in California. However, after the passage of the Native Plant Protection Act, plants were considered for protection without regard to their distribution outside the state. With List 2, we recognize the importance of protecting the geographic range of widespread species. In this way we protect the diversity of our own state's flora and help maintain evolutionary process and genetic diversity within species. All of the plants constituting List 2 meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

➤ **Threat Ranks**

The CNPS Threat Rank is an extension added onto the CNPS List and designates the level of endangerment by a 1 to 3 ranking, with 1 being the most endangered and 3 being the least endangered. A

- 0.1-Seriously threatened in California (high degree/immediacy of threat)
- 0.2-Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3-Not very threatened in California (low degree/immediacy of threats or no current threats known)

Table 1.) Plants Listed in the CNPS Online Inventory for the Trinidad Planning Area

scientific	life form	blooming	communities	elevation (m)	CNPS
<u>Abronia umbellata</u> ssp. <u>breviflora</u>	perennial herb	Jun-Oct	•Coastal dunes (CoDns)	0 - 10	List 1B.1
<u>Carex arcta</u>	perennial herb	Jun-Sep	•Bogs and fens (BgFns) •North Coast coniferous forest (NCFrs)(mesic)	60 - 1400	List 2.2
<u>Carex lenticularis</u> var. <u>limnophila</u>	perennial herb	Jun-Aug	•Bogs and fens (BgFns) •Marshes and swamps (MshSw) •North Coast coniferous forest (NCFrs)/shores, beaches; often gravelly	0 - 6	List 2.2
<u>Carex leptalea</u>	perennial rhizomatous herb	Mar-Jul	•Bogs and fens (BgFns) •Meadows and seeps (Medws)(mesic) •Marshes and swamps (MshSw)	0 - 700	List 2.2
<u>Carex lyngbyei</u>	perennial rhizomatous herb	May-Aug	•Marshes and swamps (MshSw)(brackish or freshwater)	0 - 10	List 2.2
<u>Carex saliniformis</u>	perennial rhizomatous herb	Jun(Jul)	•Coastal prairie (CoPrr) •Coastal scrub (CoScr) •Meadows and seeps (Medws) •Marshes and swamps (MshSw)(coastal salt)/mesic	3 - 230	List 1B.2
<u>Carex viridula</u> var. <u>viridula</u>	perennial herb	Jun-Nov	•Bogs and fens (BgFns) •Marshes and swamps (MshSw)(freshwater) •North Coast coniferous forest (NCFrs)(mesic)	0 - 1600	List 2.3
<u>Castilleja affinis</u> ssp. <u>litoralis</u>	perennial herb	Jun	•Coastal bluff scrub (CBScr) •Coastal dunes (CoDns) •Coastal scrub (CoScr)/sandy	15 - 100	List 2.2
<u>Castilleja ambigua</u> ssp. <u>humboldtiensis</u>	annual herb hemiparasitic	Apr-Aug	•Marshes and swamps (MshSw)(coastal salt)	0 - 3	List 1B.2
<u>Castilleja mendocinensis</u>	perennial herb hemiparasitic	Apr-Aug	•Coastal bluff scrub (CBScr) •Closed-cone coniferous forest (CCFr) •Coastal dunes (CoDns) •Coastal prairie (CoPrr) •Coastal scrub (CoScr)	0 - 160	List 1B.2
<u>Cordylanthus maritimus</u> ssp.	annual herb	Jun-Oct	•Marshes and swamps (MshSw)(coastal salt)	0 - 10	List

scientific	life form	blooming	communities	elevation (m)	CNPS
<u>palustris</u>	hemiparasitic				1B.2
<u>Discelium nudum</u>	ephemeral moss		•Coastal bluff scrub (CBScr)(soil, on clay banks)	Oct-50	List 2.2
<u>Empetrum nigrum ssp. hermaphroditum</u>	perennial evergreen shrub	Apr-Jun	•Coastal bluff scrub (CBScr)	10 - 200	List 2.2
<u>Erigeron bloomeri var. nudatus</u>	perennial herb	Jun-Jul	•Coastal prairie (CoPrr)		
			•Lower montane coniferous forest (LCFrS)	600 - 2300	List 2.3
			•Upper montane coniferous forest (UCFrS)/serpentinite		
<u>Erysimum menziesii ssp. eurekaense</u>	perennial herb	Mar-Apr	•Coastal dunes (CoDns)	0 - 10	List 1B.1
<u>Fissidens pauperculus</u>	moss		•North Coast coniferous forest (NCFrS)(damp coastal soil)	10 - 1024	List 1B.2
<u>Gilia capitata ssp. pacifica</u>	annual herb	Apr-Aug	•Coastal bluff scrub (CBScr)	5 - 869	List 1B.2
			•Chaparral (Chprl)(openings)		
			•Coastal prairie (CoPrr)		
			•Valley and foothill grassland (VFGrs)		
<u>Gilia millefoliata</u>	annual herb	Apr-Jul	•Coastal dunes (CoDns)	Feb-30	List 1B.2
<u>Juncus nevadensis var. inventus</u>	perennial rhizomatous herb	Apr-Nov	•Bogs and fens (BgFns)	0 - 10	List 2.2
<u>Lathyrus japonicus</u>	perennial rhizomatous herb	May-Aug	•Coastal dunes (CoDns)	30-Jan	List 2.1
<u>Lathyrus palustris</u>	perennial herb	Mar-Aug	•Bogs and fens (BgFns)	1 - 100	List 2.2
			•Coastal prairie (CoPrr)		
			•Coastal scrub (CoScr)		
			•Lower montane coniferous forest (LCFrS)		
			•Marshes and swamps (MshSw)		
			•North Coast coniferous forest (NCFrS)/mesic		
<u>Lavia carnosa</u>	annual herb	Mar-Jul	•Coastal dunes (CoDns)	0 - 60	List 1B.1
			•Coastal scrub (CoScr)(sandy)		
<u>Lycopodiella inundata</u>	perennial rhizomatous herb	Jun-Sep	•Bogs and fens (BgFns)(coastal)	5 - 1000	List 2.2
			•Lower montane coniferous forest (LCFrS)(mesic)		
			•Marshes and swamps (MshSw)(lake margins)		
<u>Oenothera wolfii</u>	perennial herb	May-Oct	•Coastal bluff scrub (CBScr)	3 - 800	List 1B.1
			•Coastal dunes (CoDns)		

scientific	life form	blooming	communities	elevation (m)	CNPS
<u>Packera bolanderi</u> var. <u>bolanderi</u>	perennial rhizomatous herb	Feb-Jul	<ul style="list-style-type: none"> •Coastal prairie (CoPrr) •Lower montane coniferous forest (LCFr)s/sandy, usually mesic •Coastal scrub (CoScr) •North Coast coniferous forest (NCFr)s/sometimes roadsides 	30 - 650	List 2.2
<u>Piperia candida</u>	perennial herb	May-Sep	<ul style="list-style-type: none"> •Broadleafed upland forest (BUFr)s •Lower montane coniferous forest (LCFr)s •North Coast coniferous forest (NCFr)s/sometimes serpentinite 	30 - 1310	List 1B.2
<u>Polemonium carneum</u>	perennial herb	Apr-Sep	<ul style="list-style-type: none"> •Coastal prairie (CoPrr) •Coastal scrub (CoScr) •Lower montane coniferous forest (LCFr)s 	0 - 1830	List 2.2
<u>Romanzoffia tracyi</u>	perennial herb	Mar-May	<ul style="list-style-type: none"> •Coastal bluff scrub (CBScr) •Coastal scrub (CoScr)/rocky 	15 - 30	List 2.3
<u>Sidalcea malviflora</u> ssp. <u>patula</u>	perennial rhizomatous herb	May-Aug	<ul style="list-style-type: none"> •Coastal bluff scrub (CBScr) •Coastal prairie (CoPrr) •North Coast coniferous forest (NCFr)s/often roadcuts 	15 - 878	List 1B.2
<u>Sidalcea oregana</u> ssp. <u>eximia</u>	perennial herb	Jun-Aug	<ul style="list-style-type: none"> •Lower montane coniferous forest (LCFr)s •Meadows and seeps (Medws) •North Coast coniferous forest (NCFr)s 	5 - 1340	List 1B.2
<u>Trichodon cylindricus</u>	moss		<ul style="list-style-type: none"> •Broadleafed upland forest (BUFr)s •Meadows and seeps (Medws) •Upper montane coniferous forest (UCFr)s/sandy, exposed soil, roadbanks 	50 - 2002	List 2.2
<u>Viola palustris</u>	perennial rhizomatous herb	Mar-Aug	<ul style="list-style-type: none"> •Bogs and fens (BgFns)(coastal) •Coastal scrub (CoScr)(mesic) 	0 - 150	List 2.2

California Natural Diversity Database Species and Descriptions

The following descriptions are for those species listed by the CNDDDB for the Trinidad quadrangle. Many of the plant species encountered on the CNPS list are also found on this list. Where the CNPS lists are generated primarily through known habitat requirements and available habitat, the CNDDDB lists are based solely on recorded observations. The agencies work closely together to provide accurate scoping lists, however there are discrepancies in the list and the CNPS lists only flora and not fauna.

White-footed vole (*Arborimus albipes*): The White-footed vole is a California Species of Concern. It is not state or federally listed. The white-footed vole occurs in mature coastal forests of Humboldt and Del Norte Counties. It prefers areas near small, clear streams with Red alder and a dense shrub layer. It occupies this preferred habitat from the ground surface to the canopy and feeds in all layers. It generally nests on the ground under logs or rocks. There is only one historical occurrence listed in the CNDDDB for this species near Trinidad.

Sonoma tree vole (*Arborimus pomo*): The Sonoma tree vole is a California Species of Concern. It is not state or federally listed. The Sonoma tree vole occurs along the North Coast fog belt from the Oregon border to Sonoma County. This species prefers forests dominated by Douglas-fir, Coast redwood and associated conifers. The Sonoma tree vole feeds almost exclusively on Douglas fir needles, but will occasionally take needles of Grand fir, Hemlock or Spruce. The species has been observed in Patricks Point State Park.

Western tailed frog (*Ascaphus truei*): The Western tailed frog is a California Species of Concern. It is not state or federally listed. This species occurs in Mixed Evergreen forests dominated by Douglas-fir, Coast redwood, Ponderosa pine and associated hardwood species. The Western tailed frog is restricted to perennial montane streams. The tadpoles require water below 15 degrees Celsius. It is reported in Mill Creek, Burris Creek, Savage Creek and Beach Creek.

Lagoon sedge (*Carex lenticularis* var. *limnophila*): Lagoon sedge is listed 2.2 by the CNPS. It is not state or federally listed. It occurs in bogs, fens, marshes and swamps in North Coast conifer forest. The species specifically grows on beaches and lakeshores such as Big Lagoon State Park.

Bristle-stalked sedge (*Carex leptalea*): Bristle-stalked sedge is listed 2.2 by the CNPS. It is not state or federally listed. This sedge occurs in bogs, fens, meadows, marshes and swamps. It most often grows in bogs and meadows from 0-790 meters in elevation. Occurrences were documented recently near Big Lagoon Bog.

Green yellow sedge (*Carex viridula* var. *viridula*): Green yellow sedge is listed 2.3 by the CNPS. It is not state or federally listed. This species occurs in bogs, fens, marshes,

swamps (freshwater) and mesic sites in North Coast conifer forest from 0-1600 meters in elevation. There is a documented occurrence of this species at Big Lagoon Bog.

Oregon Coast paintbrush (*Castilleja affinis* ssp. *litoralis*) is listed 2.2 by the CNPS. It is not state or federally listed. Oregon Coast paintbrush occupies sandy sites between 10-100 meters in elevation on coastal bluff scrub, coastal dunes and coastal scrub. This species is documented at Trinidad head near the lighthouse as well as near Little River at Luffenholtz Beach, along Patrick's Point Drive and at Wedding Rock, and in Spruce Cove and the bluffs of College Cove and Elk Head.

Mendocino Coast paintbrush (*Castilleja mendocinensis*): Mendocino Coast paintbrush is listed 1B.2 by the CNPS and is not state or federally listed. It occupies sea bluffs or cliffs in coastal bluff scrub or coastal prairie from 0-160 meters. It may also occur in coastal scrub, coastal dunes or closed-cone coniferous forest. This species has also been documented at Wedding Rock in Patrick's Point State Park.

Rhinoceros auklet (*Cerorhinca monocerata*): Rhinoceros auklet is a California Species of Concern and is not federally or state listed. It nests in a burrow on undisturbed, forested and unforested islands and cliff caves on the mainland. The species is documented on Green Rock, offshore of Trinidad.

Western snowy plover (*Charadrius alexandrinus nivosus*): Western snowy plover requires sandy, gravelly or friable soils for nesting. It inhabits sandy beaches, salt pond levees and shores of large alkali lakes. This species was documented at Big Lagoon Bar

Naked flag moss (*Discelium nudum*): Naked flag moss is listed 2.2 by the CNPS. It is not federally or state listed. It occupies clay soil banks in coastal bluff scrub between 10-50 meters in elevation. Naked flag moss was documented near Patrick's Point.

Mountain crowberry (*Empetrum nigrum* spp. *hermaphroditum*): Mountain crowberry is listed 2.2 by the CNPS. It is not state or federally listed. It occupies coastal bluff scrub and coastal prairie habitats from 10-200 meters in elevation. There is one document occurrence of the species on a bluff overlooking the ocean at Megewell point on Elk Head.

Waldo daisy (*Erigeron bloomeri* var. *nudatus*): Waldo daisy is listed 2.3 by the CNPS, and is not state or federally listed. It occurs in lower montane coniferous forest and upper montane coniferous forest in open areas with dry, rocky outcrops and serpentine

between 600-2300 meters. Habitat for this species is not present in the Trinidad Planning Area, , however there is a somewhat dubious report of the species growing in Spruce Cove in 1937.

Tidewater goby (*Eucylogobius newberryi*): Tidewater goby is a California Species of Concern and is federally endangered. The species occupies brackish water habitats along the California Coast from Aguq Hediona Lagoon in San Diego to the mouth of the Smith River. It is found in shallow lagoons and lower stream reaches and requires slow moving, but not stagnant water. Tidewater goby was observed in Big Lagoon near the inlet stream and boatramp.

Tufted puffin (*Fatercula cirrhata*): Tufted puffin is a California Species of Concern, but is not state or federally listed. It is an open-ocean bird that nests along the coast on islands, islets and (rarely) mainland cliffs. This species requires sod or earth to burrow into on island cliffs or slopes. Tufted puffin has been documented in the Trinidad Planning Area on Puffin Rock, Green Rock, Blank Rock, and Flatiron Rock.

Pacific gilia (*Gilia capitata* ssp. *pacifica*): Pacific gilia is listed 1B.2 by the CNPS. It is not state or federally listed. It is found on coastal bluff scrub, coastal prairie and valley and foothill grasslands between 5-300 meters. Pacific gilia is reported to occur along the coastal bluffs of Trinidad and at the mouth of Little River.

Marsh pea (*Lathyrus palustris*): Marsh pea is listed 2.2 by the CNPS. It occupies bogs, fens, marshes and swamps in lower mountain coniferous forests, North coast coniferous forests, coastal prairie and coastal scrub between 1-100 meters. Marsh pea is reported to occur at Big Lagoon Bog along a stream.

Inundated bog-clubmoss (*Lycopodiella inundata*): Inundated bog-clubmoss is listed 2.2 by the CNPS. It is not state or federally listed. It occupies muddy depressions and pond margins around peat bogs, fens, marshes and swamps in lower montane coniferous forest. This species is reported near Big Lagoon County Park near the inlet stream.

Fork-tailed storm petrel (*Oceanodroma furcata*): Fork-tailed storm petrel is a California Species of Concern, but it is not state or federally listed. It is a colonial nester on small, offshore islets. This species forages over the open ocean, usually well off-shore and chooses off-shore islets for nesting crannies beneath rocks and sod for borrowing. Fork-tailed storm petrel is reported to breed on Green Rock, Prisoner Rock, Blank Rock and numerous other small named and unnamed rocks near Trinidad.

Coast cutthroat trout (*Oncorhynchus clarkia clarkia*): Coast cutthroat trout is a California Species of Concern, but it is not state or federally listed. It occupies small, coastal streams from the Eel River to the Oregon border and prefers low gradient streams with small gravel, shade and water temperatures under 18 degrees Celcius. The species is reported to exist in Burris Creek, Savage Creek, McConnahas Creek, Mill Creek, Martin Creek, McNeil Creek and Penn Creek.

Double-crested cormorant (*Phalacrocorax auritus*): Double-crested cormorant is a California Species of Concern, but it is not state or federally listed. It is a colonial nester on coastal cliffs, offshore islands and along lake margins in the interior of the state. It nests along the coast on sequestered sites, generally on the ground with a sloping surface or in tall trees. Double-crested cormorants have recorded breeding colonies off of Sea Gull Rock, Sea Lion Rock, and White Rock.

Oregon polemonium (*Polemonium carneum*): Oregon polemonium is listed 2.2 by the CNPS and is not state or federally listed. It occupies habitat on coastal prairie, coastal scrub and lower montane coniferous forest between 0-1830 meters. This species is reported to occur near Big Lagoon

Northern red-legged frog (*Rana aurora aurora*): Northern red-legged frog is a California Species of Concern, but it is not state or federally listed. It occurs in humid forests, woodlands, grasslands and streamsides in Northwestern California, generally near dense riparian cover. The species usually occurs near permanent water, but can be found far from water as well, in damp woods and meadows during the non-breeding season. Northern red-legged frogs have been observed just north of Trinidad in Douglas fir/Coast redwood forest with large woody debris and thick riparian vegetation.

Southern torrent salamander (*Rhyacotriton variegatus*): Southern torrent salamander is a California Species of Concern, but it is not state or federally listed. It occupies mixed evergreen forests dominated by Coast redwood, Douglas fir and associated hardwoods and prefers cold, well-shaded streams. Southern torrent salamander has been observed in at Wedding Rock, Penn Creek and Beach Creek near Patricks Point State Park and Mill Creek and College Cove at Trinidad State Beach as well as Savage Creek, Parvin Creek, and Big Lagoon.

Tracy's romanzoffia (*Romanzoffia tracyi*): Tracy's romanzoffia is listed 2.3 by the CNPS and is not state or federally listed. It occupies rocky sites on rocoastal bluff scrub and

coastal scrub between 15-30 meters. Tracy's romanzoffia has been reported to occur on Trinidad Head and in Spruce Cove.

Sitka Spruce Forest is a special habitat community that occurs in Patrick's Point State Park. It is a forest stand dominated by approximately 150 year old Sitka spruce (*Picea sitchensis*) with a few Grand fir and Douglas fir in the stand. The understory may contain Salmonberry (*Rubus spectabilis*) Evergreen huckleberry (*Vaccinium ovatum*), Salal (*Gaultheria shallon*), Sword fern (*Polystichum munitum*) and non-vascular species (mosses, fungi, lichens and liverworts).

Sphagnum bog is a special habitat community that occurs at Big Lagoon Bog. The floristic assemblage includes *Drosera rotundifolia*, *Lycopodium inundatum*, and *Ledum glandulosum*

Cylindrical trichodon (*Trichodon cylindricus*): Cylindrical trichodon is listed 2.2 by the CNPS but is not state or federally listed. It occupies sandy, exposed soil in broadleaved upland forest and upper montane coniferous forest. This species occurs south of Patricks Point on a sandstone roadcut along the ocean bluffs.

Alpine Marsh Violet (*Viola palustris*): Alpine Marsh Violet is listed 2.2 by the CNPS but is not state or federally listed. It occupies swampy, shrubby places in coastal scrub or coastal bogs or fens from 0-15 meters. This species was documented along the southwest side of Big Lagoon in the bog.

Table 2.) Rare Threatened or Endangered Species Listed in the CNPS Online Inventory for the Trinidad Planning Area.

scientific	life form	blooming	communities	elevation (m)	CNPS
<u>Abronia umbellata ssp. breviflora</u>	perennial herb	Jun-Oct	•Coastal dunes (CoDns)	0 - 10	List 1B.1
<u>Carex arcta</u>	perennial herb	Jun-Sep	•Bogs and fens (BgFns) •North Coast coniferous forest (NCFrs)(mesic)	60 - 1400	List 2.2
<u>Carex lenticularis var. limnophila</u>	perennial herb	Jun-Aug	•Bogs and fens (BgFns) •Marshes and swamps (MshSw) •North Coast coniferous forest (NCFrs)/shores, beaches; often gravelly	0 - 6	List 2.2
<u>Carex leptalea</u>	perennial rhizomatous herb	Mar-Jul	•Bogs and fens (BgFns) •Meadows and seeps (Medws)(mesic) •Marshes and swamps (MshSw)	0 - 700	List 2.2
<u>Carex lyngbyei</u>	perennial rhizomatous herb	May-Aug	•Marshes and swamps (MshSw)(brackish or freshwater)	0 - 10	List 2.2
<u>Carex saliniformis</u>	perennial rhizomatous herb	Jun(Jul)	•Coastal prairie (CoPrr) •Coastal scrub (CoScr) •Meadows and seeps (Medws) •Marshes and swamps (MshSw)(coastal salt)/mesic	3 - 230	List 1B.2
<u>Carex viridula var. viridula</u>	perennial herb	Jun-Nov	•Bogs and fens (BgFns) •Marshes and swamps (MshSw)(freshwater) •North Coast coniferous forest (NCFrs)(mesic)	0 - 1600	List 2.3
<u>Castilleja affinis ssp. litoralis</u>	perennial herb	Jun	•Coastal bluff scrub (CBSCr) •Coastal dunes (CoDns) •Coastal scrub (CoScr)/sandy	15 - 100	List 2.2

scientific	life form	blooming	communities	elevation (m)	CNPS
<u>Castilleja ambigua</u> ssp. <u>humboldtiensis</u>	annual herb hemiparasitic	Apr-Aug	•Marshes and swamps (MshSw)(coastal salt)	0 - 3	List 1B.2
<u>Castilleja mendocinensis</u>	perennial herb hemiparasitic	Apr-Aug	•Coastal bluff scrub (CBScr) •Closed-cone coniferous forest (CCFr) •Coastal dunes (CoDns) •Coastal prairie (CoPrr) •Coastal scrub (CoScr)	0 - 160	List 1B.2
<u>Cordylanthus maritimus</u> ssp. <u>palustris</u>	annual herb hemiparasitic	Jun-Oct	•Marshes and swamps (MshSw)(coastal salt)	0 - 10	List 1B.2
<u>Discelium nudum</u>	ephemoral moss		•Coastal bluff scrub (CBScr)(soil, on clay banks)	Oct-50	List 2.2
<u>Empetrum nigrum</u> ssp. <u>hermaphroditum</u>	perennial evergreen shrub	Apr-Jun	•Coastal bluff scrub (CBScr) •Coastal prairie (CoPrr)	10 - 200	List 2.2
<u>Erigeron bloomeri</u> var. <u>nudatus</u>	perennial herb	Jun-Jul	•Lower montane coniferous forest (LCFr) •Upper montane coniferous forest (UCFr)/serpentinite	600 - 2300	List 2.3
<u>Erysimum menziesii</u> ssp. <u>eurekaense</u>	perennial herb	Mar-Apr	•Coastal dunes (CoDns)	0 - 10	List 1B.1
<u>Fissidens pauperculus</u>	moss		•North Coast coniferous forest (NCFr)(damp coastal soil)	10 - 1024	List 1B.2
<u>Gilia capitata</u> ssp. <u>pacifica</u>	annual herb	Apr-Aug	•Coastal bluff scrub (CBScr) •Chaparral (Chprl)(openings) •Coastal prairie (CoPrr) •Valley and foothill grassland (VFGr)	5 - 869	List 1B.2
<u>Gilia millefoliata</u>	annual herb	Apr-Jul	•Coastal dunes (CoDns)	Feb-30	List 1B.2

scientific	life form	blooming	communities	elevation (m)	CNPS
<u>Juncus nevadensis var. inventus</u>	perennial rhizomatous herb	Apr-Nov	•Bogs and fens (BgFns)	0 - 10	List 2.2
<u>Lathyrus japonicus</u>	perennial rhizomatous herb	May-Aug	•Coastal dunes (CoDns)	30-Jan	List 2.1
<u>Lathyrus palustris</u>	perennial herb	Mar-Aug	•Bogs and fens (BgFns) •Coastal prairie (CoPrr) •Coastal scrub (CoScr) •Lower montane coniferous forest (LCFr) •Marshes and swamps (MshSw) •North Coast coniferous forest (NCFr)/mesic	1 - 100	List 2.2
<u>Layia carnosa</u>	annual herb	Mar-Jul	•Coastal dunes (CoDns) •Coastal scrub (CoScr)(sandy)	0 - 60	List 1B.1
<u>Lycopodiella inundata</u>	perennial rhizomatous herb	Jun-Sep	•Bogs and fens (BgFns)(coastal) •Lower montane coniferous forest (LCFr)(mesic) •Marshes and swamps (MshSw)(lake margins)	5 - 1000	List 2.2
<u>Oenothera wolfii</u>	perennial herb	May-Oct	•Coastal bluff scrub (CBScr) •Coastal dunes (CoDns) •Coastal prairie (CoPrr) •Lower montane coniferous forest (LCFr)/sandy, usually mesic	3 - 800	List 1B.1
<u>Packera bolanderi var. bolanderi</u>	perennial rhizomatous herb	Feb-Jul	•Coastal scrub (CoScr) •North Coast coniferous forest (NCFr)/sometimes roadsides	30 - 650	List 2.2
<u>Piperia candida</u>	perennial herb	May-Sep	•Broadleafed upland forest (BUFr)	30 - 1310	List

scientific	life form	blooming	communities	elevation (m)	CNPS
			<ul style="list-style-type: none"> •Lower montane coniferous forest (LCFrS) •North Coast coniferous forest (NCFrS)/sometimes serpentinite 		1B.2
<u>Polemonium carneum</u>	perennial herb	Apr-Sep	<ul style="list-style-type: none"> •Coastal prairie (CoPrr) •Coastal scrub (CoScr) 	0 - 1830	List 2.2
<u>Romanzoffia tracyi</u>	perennial herb	Mar-May	<ul style="list-style-type: none"> •Lower montane coniferous forest (LCFrS) •Coastal bluff scrub (CBScr) •Coastal scrub (CoScr)/rocky 	15 - 30	List 2.3
<u>Sidalcea malviflora ssp. patula</u>	perennial rhizomatous herb	May-Aug	<ul style="list-style-type: none"> •Coastal bluff scrub (CBScr) •Coastal prairie (CoPrr) 	15 - 878	List 1B.2
<u>Sidalcea oregana ssp. eximia</u>	perennial herb	Jun-Aug	<ul style="list-style-type: none"> •North Coast coniferous forest (NCFrS)/often roadcuts •Lower montane coniferous forest (LCFrS) •Meadows and seeps (Medws) 	5 - 1340	List 1B.2
<u>Trichodon cylindricus</u>	moss		<ul style="list-style-type: none"> •North Coast coniferous forest (NCFrS) •Broadleafed upland forest (BUFrS) •Meadows and seeps (Medws) •Upper montane coniferous forest (UCFrS)/sandy, exposed soil, roadbanks 	50 - 2002	List 2.2
<u>Viola palustris</u>	perennial rhizomatous herb	Mar-Aug	<ul style="list-style-type: none"> •Bogs and fens (BgFns)(coastal) •Coastal scrub (CoScr)(mesic) 	0 - 150	List 2.2

VIII.) SUMMARY OF CONCERNS

Water quality-Water quality in the Trinidad Planning Area is important to City residents as domestic drinking water is obtained from the local area. The City must also conform to local, State and Federal policies regarding water quality. Inland and Coastal wetlands and numerous fish and wildlife species are impacted by water pollution. Water quality in the Trinidad Planning Area has been impacted by development and resource extraction. Many streams and wetlands have been degraded by point and non-point sources of pollutants.

Soils - The Trinidad Planning Area is subject to earthquakes, landslides and rapid soil erosion due to native soil types and overall geological instability. An increase in soil erosion due to development or resource extraction may exacerbate geologic instability and have a negative impact on natural resources in the area such as timber production and fisheries. Soils in the area can also be compaction and disturbed during various development activities. Soils which are disturbed during site preparation, road construction, timber harvesting and septic installation are often invaded by exotic plants. Soil disturbance and compaction also alters the natural hydrology of the area and can have indirect effects on numerous resources.

Sensitive Species and Communities –The Trinidad Planning Area provides habitat for numerous rare, threatened and endangered species in its diversity of terrestrial, aquatic and marine ecosystems. Many of these species are impacted either directly or indirectly by development and resource extraction. Land use policies and development restrictions (both spatially and temporally) can minimize the impact of land use on these sensitive species.

Natural Resources – The residents of the Trinidad Planning Area have been historically dependent upon the local natural resources. Marine and freshwater fisheries, timber harvesting, mining, and agriculture are extremely important for the long-term viability of the community. The persistence of these activities will be vital in maintaining the health of the local economy. These activities can be impacted by development and can also have an impact on the natural environment. Careful planning and restrictions are required to adequately protect all of the resources and maintain the sustainability of the region.

IX.) RECOMMENDATIONS

The following recommendations have been provided to protect the environment and biological resources of the Trinidad Planning Area. These recommendations are not only for protected ESHAs, but for the general environment and diverse biological resources of the area.

- The determination of what constitutes ESHA should not be limited by what is illustrated on City and County maps and not all parcels that are mapped necessarily contain ESHAs. Maps serve to identify those general areas known to potentially contain ESHA and for which a biological report is required to substantiate the presence or absence of ESHAs on any particular parcel. Any area not designated on maps that meets the ESHA definition is an ESHA and should be accorded all the protection provided for ESHAs in the City LCP. All habitat maps should include a note that states that “the maps may be updated as appropriate and may not include all areas that constitute ESHA.” The City should update the mapping of ESHAs as new information becomes available. Forested wetlands in the region are especially difficult to identify and site visits should be conducted by qualified personnel to determine wetland presence.
- Diking, Filling, and Dredging of open coastal waters, wetlands, estuaries, and other bodies of water should be permitted only where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and should be limited to the following uses:
 - a. New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.
 - b. Maintaining existing or restoring previously dredged depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.
 - c. New or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.
 - d. Incidental public service purposes, including but not limited to burying cables and pipes or inspection of piers and maintenance of existing intake and outfall pipelines.
 - e. Restoration purposes.
 - f. Nature study, aquaculture, or similar resource dependent activities

- Channelizations, dams, or other substantial alterations of coastal streams should incorporate the best mitigation measures feasible, and be limited to:
 - a. Necessary water supply projects,
 - b. Alternative energy projects such as micro-hydro power, or
 - c. Developments where the primary function is the improvement of fish and wildlife habitat.
- Development within other types of ESHAs should protect ESHAs against any significant disruption of habitat values and should be limited to the following uses:
 - a. Public nature trails. Within riparian ESHAs, trails are considered a resource dependent use provided that: (1) the length of the trail within the riparian corridor should be minimized; (2) the trail crosses the stream at right angles to the maximum extent feasible; (3) the trail is kept as far up slope from the stream as possible; (4) trail development involves a minimum of slope disturbance and vegetation clearing; and (5) the trail is the minimum width necessary. Interpretive signage may be used along permissible nature trails accessible to the public to provide information about the value and need to protect sensitive resources. To minimize soil erosion trail maintenance should include the installation of or repairing of existing water bars, board ditches, bridges, rolling dip crossings and ditch relief culverts to redirect runoff off trails. Trails should be regraded where deep gulying has taken place.
 - b. Restoration projects where the primary purpose is restoration of the habitat.
 - c. Invasive plant eradication projects if they are designed to protect and enhance habitat values.
 - d. Pipelines and utility lines installed underneath the ESHA using directional drilling techniques designed to avoid significant disruption of habitat values.
- Development in areas adjacent to ESHAs should be sited and designed to prevent impacts which would significantly degrade such areas, and should be compatible with the continuance of such habitat areas.
- Development adjacent to ESHA should provide Buffer Areas to serve as transitional habitat and provide distance and physical barriers to human intrusion. The purpose of this Buffer Areas is to provide for a sufficient area to protect environmentally sensitive habitats from significant degradation resulting from future development. Buffers should be of a sufficient size to ensure the biological integrity and preservation of the ESHA they are designed to protect.
- The width of the Buffer Areas should be a minimum of 100 feet, unless an applicant can demonstrate, after consultation with the California Department of Fish and Game, other relevant resource agencies, and the City, that 100 feet is not necessary to protect the resources of that particular habitat area and the adjacent

upland transitional habitat function of the buffer from possible significant disruption caused by the proposed development. The Buffer Areas should be measured from the outside edge of the ESHAs and in no event should be less than 30 feet in width.

- Utilize the following criteria to establish Buffer Areas:
 - a. Biological Significance of Adjacent Lands - Lands adjacent to a wetland, stream, or riparian habitat area vary in the degree to which they are functionally related to these habitat areas. Functional relationships may exist if species associated with such areas spend a significant portion of their life cycle on adjacent lands. The degree of significance depends upon the habitat requirements of the species in the habitat area (e.g., nesting, feeding, breeding, or resting). Boundaries of areas with biological significance should be determined by a qualified professional.

Where a significant functional relationship exists, the land supporting this relationship should also be considered to be part of the ESHA, and the buffer zone should be measured from the edge of these lands and be sufficiently wide to protect these functional relationships. Where no significant functional relationships exist, the buffer should be measured from the edge of the ESHA that is adjacent to the proposed development.

- b. Sensitivity of Species to Disturbance - The width of the buffer zone should be based, in part, on the distance necessary to ensure that the most sensitive species of plants and animals will not be disturbed significantly by the permitted development. Such a determination should be based on the following after consultation with the Department of Fish and Game or others with similar expertise:
 - (i.) Nesting, feeding, breeding, resting, or other habitat requirements of both resident and migratory fish and wildlife species;
 - (ii.) An assessment of the short-term and long-term adaptability of various species to human disturbance;
 - (iii.) An assessment of the impact and activity levels of the proposed development on the resource.
- c. Erosion susceptibility - The width of the buffer should be based, in part, on an assessment of the slope, soils, impervious surface coverage, runoff characteristics, erosion potential, and vegetative cover of the parcel proposed for development and adjacent lands. A sufficient buffer to allow for the interception of any additional material eroded as a result of the proposed development should be provided.
- d. Use natural topography - Where feasible, use hills and bluffs adjacent to ESHAs, to buffer these habitat areas. Where otherwise permitted, locate development on the sides of hills away from ESHAs. Include bluff faces in the Buffer Areas.

- e. Use existing man-made features - Where feasible, use man-made features such as roads and dikes to buffer ESHAs.
 - f. Lot Configuration and Location of Existing Development - Where an existing subdivision or other development is largely built-out and the buildings are a uniform distance from a habitat area, at least that same distance should be required as a buffer zone for any new development permitted. However, if that distance is less than one hundred (100) feet, additional mitigation measures (e.g., planting of native vegetation) should be provided to ensure additional protection.
 - g. Type and Scale of Development Proposed - The type and scale of the proposed development will, to a large degree, determine the size of the buffer zone necessary to protect the ESHA. Such evaluations should be made on a case-by-case basis depending upon the resources involved, the degree to which adjacent lands are already developed, and the type of development already existing in the area.
- Required Buffer Areas should be measured from the following points as applicable:
 - The outer edge of the canopy of riparian vegetation for riparian ESHA, or from the top of stream bank where no riparian vegetation exists.
 - The upland edge of a wetland for a wetland ESHA.
 - The outer edge of the plants that comprise the rare plant community for rare plant community ESHA.
 - Permitted Uses within ESHA Buffers. Development within an ESHA buffer should be limited to the following uses:
 - Uses allowed within the adjacent Wetland ESHA pursuant to relevant laws and policies
 - Nature trails and interpretive signage designed to provide information about the value and protection of the resources
 - Invasive plant eradication projects if they are designed to protect and enhance habitat values.
 - Prohibit new land divisions creating new parcels located entirely within an ESHA or Buffer Areas unless the parcel to be created is restricted at the time of its creation solely for open space, public recreation, or conservation.
 - Permissible development on all properties containing environmentally sensitive habitat, including but not limited to those areas identified as ESHA Habitat Areas on City or County maps, should prepare a drainage and erosion control plan for approval by the City. The plan should include measures to minimize erosion during project construction, and to minimize erosive runoff from the site after the project is

completed. Any changes in runoff volume, velocity, or duration that may affect sensitive plant and animal populations, habitats, or Buffer Areas for those populations or habitats, should be reviewed by a qualified biologist to ensure that there will not be adverse hydrologic, erosion, or sedimentation impacts on sensitive species or habitats. Mitigation measures and compliance monitoring standards should be identified and adopted to minimize potential adverse runoff impacts. All projects resulting in new runoff to any streams in the City or to the ocean should be designed to minimize the transport of pollutants from roads, parking lots, and other impermeable surfaces of the project.

- All development located within or adjacent to ESHAs should be conditioned to:
 - a) Require all proposed plantings be obtained from local genetic stocks within Humboldt County. If documentation is provided to the review authority that demonstrates that native vegetation from local genetic stock is not available, native vegetation obtained from genetic stock outside the local area, but from within the adjacent region of the floristic province, may be used; and if local genetic stocks within the floristic province are unavailable, the Director may authorize use of a commercial native mix, provided it is clear of invasive seed. Director may also authorize use of a seed mix that is selected for rapid senescence and replacement with native stock; and
 - b) Require an invasive plant monitoring and removal program; and
 - c) Prohibit the planting of any plant species on the property that is (a) listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, and/or by the State of California, or (b) listed as a 'noxious weed' by the State of California or the U.S. Federal Government.
- Prohibit vegetation removal in ESHAs and Buffer Areas except for:
 - a) Vegetation removal authorized through coastal development permit approval to accommodate permissible development,
 - b) Removal of trees for disease control,
 - c) Vegetation removal for public safety purposes to abate a nuisance consistent with Coastal Act Section 30005, or
 - d) Removal of firewood for the personal use of the property owner at his or her residence to the extent that such removal does not constitute development pursuant to Coastal Act Section 30106. Such activities should be subject to restrictions to protect sensitive habitat values.
- Implement the following measures when a project involves dredging, filling or diking of open coastal waters, wetlands, estuaries, or lakes:
 - a) Dredging and spoils disposal should be planned and carried out to avoid significant disruption to marine and wildlife habitats and to water circulation

to the maximum extent feasible. Avoiding significant disruption means, in part, that the functional capacity of the wetland is maintained to the maximum extent feasible.

- b) Limitations may be imposed, including but not limited to, limitations on the timing of the operation, the type of operation, the quantity of dredged material removed, and the location of the spoils site.
- c) Dredge spoils suitable for beach replenishment should, where feasible, be transported to appropriate beaches or into suitable longshore current systems. d) Other mitigation measures may include opening areas to tidal action, removing dikes, improving tidal flushing, or other restoration measures.

Program OS-1.15.1: Consult with the Department of Fish and Game, California Coastal Commission, and U.S. Army Corps of Engineers, as applicable, on the review of dredging, filling and diking plans in, or adjacent to wetlands or estuaries to establish mitigating measures.

- Biological Report should be required for any development within or adjacent to ESHAs.
 - a) Permit applications for development within or adjacent to ESHAs including areas identified in Map OS-1 or other sites identified by City staff which have the possibility of containing environmentally sensitive habitat should include a Biological Report prepared by a qualified biologist which identifies the resources and provides recommended measures to ensure that the requirements of the Coastal Act and LCPs are fully met. The required content of the Biological Report is specified in the Coastal Land Use and Development Code.
 - b) Submittal of Biological Reports. These Biological Reports should be reviewed by the City and approving agencies. The biological reports described above should be submitted prior to filing as complete a coastal development permit application and may also be submitted as a part of any environmental documentation required pursuant to CEQA. The selection of the professional preparing the report should be made or approved by the City or the agency approving the permit and paid for by the applicant.
 - c) Biological reports should contain mitigating measures meeting the following minimum standards:
 - (i.) They are specific, implementable, and, wherever feasible, quantifiable.
 - (ii.) They result in the maximum feasible protection, habitat restoration and enhancement of sensitive environmental resources. Habitat restoration and enhancement should be required wherever feasible, in

addition to the applicable baseline standard of either avoiding or minimizing significant habitat disruption.

- (iii.) They are incorporated into a Mitigation Monitoring Program; and
- (iv.) They include substantial information and analysis to support a finding that there is no feasible, less environmentally damaging alternative.

DRAFT

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APPENDIX A.) FLORA RECORDED IN THE GREATER TRINIDAD AREA (Fix capitalization/scientific names and double check updates/list)

	Common Name	Scientific Name
<u>Vascular Plants</u>		
Trees		
	grand fir	<i>Abies grandis</i>
	big leaf maple	<i>Acer macrophyllum</i>
	red alder	<i>Alnus rubra</i>
	Port Orford cedar	<i>Chamaecyparis lawsoniana</i>
	eucalyptus ⁴	<i>Eucalyptus globosus</i>
	Oregon ash	<i>Fraxinus latifolia</i>
	Monterey cypress ⁴	<i>Hesperocyparis macrocarpa</i>
	tanoak ³	<i>Lithocarpus densiflorus</i> var. <i>densiflorus</i>
	Sitka spruce	<i>Picea sitchensis</i>
	shore pine ⁶	<i>Pinus contorta</i> ssp. <i>contorta</i>
	Bishop pine ⁶	<i>Pinus muricata</i>
	black cottonwood	<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>
	cherry ⁴	<i>Prunus</i> sp.
	western Douglas fir	<i>Pseudotsuga menziesii</i> var. <i>menziesii</i>
	canyon live oak	<i>Quercus chrysolepis</i>
	red willow	<i>Salix laevigata</i>
	yellow willow	<i>Salix lucida</i> ssp. <i>lasiandra</i>
	coast redwood ⁴	<i>Sequoia sempervirens</i>
	western red cedar	<i>Thuja plicata</i>
	western hemlock	<i>Tsuga heterophylla</i>
	California bay ⁶	<i>Umbellularia californica</i>
Shrubs and Subshrubs		
	vine maple	<i>Acer circinatum</i>
	pale serviceberry	<i>Amelanchier pallida</i>
	service berry	<i>Amelanchier utahensis</i>
	redwood manzanita	<i>Arctostaphylos columbiana</i>
	hooker's manzanita	<i>Arctostaphylos hookeri</i>
	dwarf chaparral broom	<i>Baccharis pilularis</i>
	oreongrape	<i>Berberis nervosa</i>
	Point Reyes ceanothus	<i>Ceanothus gloriosus</i>
	blueblossom	<i>Ceanothus thyrsoiflorus</i>
	brown dogwood	<i>Cornus glabrata</i>
	western dogwood	<i>Cornus sericea</i> ssp. <i>occidentalis</i>
	California hazel	<i>Corylus cornuta</i> var. <i>californica</i>
	Scotchbroom ⁴	<i>Cytisus scoparius</i>
	black crowberry	<i>Empetrum nigrum</i>
	nude buckwheat	<i>Eriogonum nudum</i>
	ornamental escallonia	<i>Escallonia</i> spp.
	wavyleaf silktassel	<i>Garrya elliptica</i>
	salal	<i>Gaultheria shouldon</i>
	ocean spray ⁴	<i>Holodiscus discolor</i>
	labrador Tea ⁴	<i>Ledum glandulosum</i>
	twinberry honeysuckle	<i>Lonicera involucrata</i> var. <i>ledebourii</i>
	silver lupine	<i>Lupinus albifrons</i>
	manycolor lupine	<i>Lupinus variicolor</i>
	Oregon crabapple*	<i>Malus fusca</i>
	orange bush monkeyflower ⁴	<i>Mimulus aurantiacus</i>
	California wax myrtle	<i>Morella californica</i>

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Common Name	Scientific Name
coffee berry	<i>Rhamnus californica</i>
cascara ⁴	<i>Rhamnus purshiana</i>
rhodoendron ⁴	<i>Rhododendron macrophyllum</i>
azalea ⁴	<i>Rhododendron occidentale</i>
stink currant	<i>Ribes bracteosum</i>
trailing black currant ⁴	<i>Ribes laxiflorum</i>
gummy gooseberry	<i>Ribes lobbii</i>
flowering red currant ⁴	<i>Ribes sanguineum</i>
California wildrose	<i>Rosa californica</i>
dwarf rose	<i>Rosa gymnocarpa</i>
Nootka rose ⁴	<i>Rosa nutkana</i>
Himalaya blackberry ⁴	<i>Rubus discolor</i>
western raspberry	<i>Rubus leucodermis</i>
thimbleberry ⁴	<i>Rubus parviflorus</i>
salmonberry ⁴	<i>Rubus spectabilis</i>
Booth's willow	<i>Salix boothii</i>
sandbar willow	<i>Salix exigua</i>
sandbar willow	<i>Salix hindsiana</i>
Hooker willow ⁶	<i>Salix hookeriana</i>
arroyo willow	<i>Salix lasiolepis</i>
shining willow	<i>Salix lucida</i>
dusky willow	<i>Salix melanopsis</i>
Scouler's willow	<i>Salix scouleriana</i>
Sitka willow ⁵	<i>Salix sitchensis</i>
Tracy's willow	<i>Salix tracyi</i>
red elderberry ⁴	<i>Sambucus racemosa</i>
Pacific red elderberry	<i>Sambucus racemosa</i> var. <i>racemosa</i>
spiraea ⁴	<i>Spiraea douglasii</i>
evergreen huckleberry ⁴	<i>Vaccinium ovatum</i>
red huckleberry ⁴	<i>Vaccinium parvifolium</i>
Perennial Herbs	
Sweet vernal grass ⁴	<i>Anthoxanthum odoratum</i>
English daisy ⁴	<i>Bellis perennis</i>
pussy ears	<i>Calochortus tolmiei</i>
fireweed ⁴	<i>Chamerion angustifolium</i>
smooth hawksbeard ⁴	<i>Crepis capillaris</i>
forget-me-not ⁴	<i>Myosotis sylvatica</i>
daffodils ⁴	<i>Narcissus</i> sp.
timothy grass ⁴	<i>Phleum pratense</i>
sand verbena	<i>Abronia latifolia</i>
pink sand verbena	<i>Abronia umbellata</i>
yarrow ⁴	<i>Achillea millefolium</i>
vanilla leaf ²	<i>Achlys triphylla</i>
nettle leaf giant hyssop	<i>Agastache urticifolia</i>
seaside agoseris	<i>Agoseris apargioides</i>
California dandelion	<i>Agoseris grandiflora</i>
Point Reyes bent grass	<i>Agrostis densiflora</i>
spike bentgrass	<i>Agrostis exarata</i>
Oregon bentgrass	<i>Agrostis oregonensis</i>
thingrass	<i>Agrostis pallens</i>

APPENDIX A.) FLORA RECORDED IN THE GREATER TRINIDAD AREA (Fix

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Common Name	Scientific Name
Mexicali onion	<i>Allium peninsulare</i>
pearly everlasting	<i>Anaphalis margaritacea</i>
kneeling angelica	<i>Angelica genuflexa</i>
coast angelica	<i>Angelica hendersonii</i>
Western lady's mantle	<i>Aphanes occidentalis</i>
Indianhemp dogbane	<i>Apocynum cannabinum</i>
towermustard rockcress	<i>Arabis glabra</i>
elk's clover	<i>Aralia californica</i>
California sea pink	<i>Armeria maritima</i> ssp. <i>californica</i>
Douglas' sagewort	<i>Artemisia douglasiana</i>
wild tarragon	<i>Artemisia dracunculus</i>
coastal sagewort	<i>Artemisia pycnocephala</i>
coastal mugwort	<i>Artemisia suksdorfii</i>
Kotolo milkweed	<i>Asclepias eriocarpa</i>
narrow leaf milkweed	<i>Asclepias fascicularis</i>
common California aster	<i>Aster chilensis</i>
saltmarsh baccharis	<i>Baccharis douglasii</i>
balsam deltoid	<i>Balsamorhiza deltoidea</i>
California groundcone	<i>Boschniakia strobilacea</i>
brook foam	<i>Boykinia occidentalis</i>
Mustard ⁴	<i>Brassica rapa</i>
brickell bush	<i>Brickellia californica</i>
Harvest brodiaea	<i>Brodiaea elegans</i>
blue stars ⁴	<i>Brodiaea scellaris</i>
dwarf brodiaea	<i>Brodiaea terrestris</i> ssp. <i>terrestris</i>
mountain brome	<i>Bromus carinatus</i> var. <i>carinatus</i>
maritime brome	<i>Bromus carinatus</i> var. <i>maritimus</i>
woodland brome	<i>Bromus laevipes</i>
mountain brome	<i>Bromus marginatus</i>
Pacific reedgrass	<i>Calamagrostis nutkaensis</i>
yellow mariposa lily	<i>Calochortus luteus</i>
morning glory	<i>Calystegia purpurata</i>
western hedge bindweed	<i>Calystegia sepium</i>
beach primrose	<i>Camissonia cheiranthifolia</i>
sun cup	<i>Camissonia ovata</i>
bittercress ⁴	<i>Cardamine angulata</i>
California toothwort	<i>Cardamine californica</i>
sandcarpet	<i>Cardionema ramosissimum</i>
abrupt beaked sedge	<i>Carex abrupta</i>
big leaf sedge	<i>Carex amplifolia</i>
bear sedge	<i>Carex arcta</i>
valley sedge	<i>Carex barbarae</i>
dense sedge	<i>Carex densa</i>
shorter scaled sedge	<i>Carex deweyana</i> ssp. <i>leptopoda</i>
star sedge	<i>Carex echinata</i> ssp. <i>phyllomanica</i>
round fruit sedge	<i>Carex globosa</i>
Olney's hairy sedge	<i>Carex gynodynama</i>
Harford's sedge	<i>Carex harfordii</i>
Henderson's sedge	<i>Carex hendersonii</i>
bristle-stalked sedge ²	<i>Carex leptalea</i>
wood rush sedge	<i>Carex luzulina</i>

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Common Name	Scientific Name
woodrush sedge	<i>Carex luzulina</i> var. <i>luzulina</i>
slough sedge	<i>Carex obnupta</i>
eggbract sedge	<i>Carex ovalis</i>
chamisso sedge	<i>Carex pachystachya</i>
Ross sedge	<i>Carex rossii</i>
salt sedge	<i>Carex saliniformis</i>
small bract sedge	<i>Carex subbracteata</i>
lateral sedge	<i>Carex unilateralis</i>
Northwest Territory sedge	<i>Carex utriculata</i>
western blister sedge	<i>Carex vesicaria</i> var. <i>major</i>
little green sedge	<i>Carex viridula</i>
little green sedge	<i>Carex viridula</i> ssp. <i>viridula</i>
green sedge	<i>Carex viridula</i> var. <i>viridula</i>
sea fig	<i>Carpobrotus chilensis</i>
Indian paintbrush	<i>Castilleja affinis</i>
coast Indian paintbrush	<i>Castilleja affinis</i> ssp. <i>litoralis</i>
Texas paintbrush	<i>Castilleja foliolosa</i>
longleaf Indian paintbrush	<i>Castilleja subinclusa</i> ssp. <i>franciscana</i>
Wight' Indian paintbrush	<i>Castilleja wightii</i>
Soap plant	<i>Chlorogalum pomeridianum</i>
Western water hemlock	<i>Cicuta douglasii</i>
Indian thistle	<i>Cirsium brevistylum</i>
Cobweb thistle	<i>Cirsium occidentale</i>
snowy thistle	<i>Cirsium occidentale</i> var. <i>candidissimum</i>
Alameda County thistle	<i>Cirsium quercetorum</i>
bull thistle ⁴	<i>Cirsium vulgare</i>
pampas grass	<i>Cortaderia jubata</i>
pampas grass	<i>Cortaderia selloana</i>
blackcyperus	<i>Cyperus niger</i>
false nutsedge	<i>Cyperus strigosus</i>
coastal larkspur	<i>Delphinium decorum</i>
tufted hairgrass	<i>Deschampsia cespitosa</i>
bleeding hearts ⁴	<i>Dicentra formosa</i>
firecracker flower ⁴	<i>Dichelostemma ida-maia</i>
foxglove ⁴	<i>Digitalis purpurea</i>
saltgrass	<i>Distichlis spicata</i>
mosquito bills	<i>Dodecatheon hendersonii</i>
bluff Lettuce	<i>Dudleya farinosa</i>
spike rush	<i>Eleocharis acicularis</i>
bottlebrush squirreltail	<i>Elymus elymoides</i>
blue wildrye	<i>Elymus glaucus</i>
big squirreltail	<i>Elymus multisetus</i>
Northern willowherb	<i>Epilobium ciliatum</i>
Watson's willowherb	<i>Epilobium ciliatum</i> ssp. <i>watsonii</i>
stream orchid	<i>Epipactis gigantea</i>
leafy fleabane	<i>Erigeron foliosus</i>
seaside daisy ⁴	<i>Erigeron glaucus</i>
rayless fleabane	<i>Erigeron inornatus</i>
coast eriogonum	<i>Eriogonum latifolium</i>
common woolly sunflower	<i>Eriophyllum lanatum</i>
prickly coyote thistle	<i>Eryngium armatum</i>

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Common Name	Scientific Name
sanddune wallflower	<i>Erysimum capitatum</i>
curly wallflower	<i>Erysimum menziesii</i> ssp. <i>concinnum</i>
California poppy	<i>Eschscholzia californica</i>
Chinese caps	<i>Euphorbia crenulata</i>
western goldentop	<i>Euthamia occidentalis</i>
Idaho fescue	<i>Festuca idahoensis</i>
red fescue	<i>Festuca rubra</i>
beach strawberry	<i>Fragaria chiloensis</i>
threepetal bedstraw	<i>Galium trifidum</i>
pleated gentian	<i>Gentiana affinis</i>
pleated gentian	<i>Gentiana affinis</i> var. <i>ovata</i>
king's scepter gentian	<i>Gentiana sceptrum</i>
cinquefoil geranium	<i>Geranium potentilloides</i>
wild licorice	<i>Glycyrrhiza lepidota</i>
white everlasting	<i>Gnaphalium canescens</i> ssp. <i>microcephalum</i>
pink cudweed	<i>Gnaphalium ramosissimum</i>
Chilean cudweed	<i>Gnaphalium stramineum</i>
Great Valley gumweed	<i>Grindelia camporum</i> var. <i>camporum</i>
gumplant ⁴	<i>Grindelia nana</i>
Oregon gumweed	<i>Grindelia stricta</i>
gumweed	<i>Grindelia stricta</i> var. <i>platyphylla</i>
common sneezeweed	<i>Helenium autumnale</i>
Bigelow Sneezeweed ⁴	<i>Helenium bigelovii</i>
Bolander's sneezeweed	<i>Helenium bolanderi</i>
Sneezeweed	<i>Helenium puberulum</i>
heliotrope	<i>Heliotropium curassavicum</i>
cow parsnip	<i>Heracleum lanatum</i>
common cowparsnip	<i>Heracleum maximum</i>
false goldenaster	<i>Heterotheca sessiliflora</i>
velvetgrass ⁴	<i>Holcus lanatus</i>
meadow barley	<i>Hordeum brachyantherum</i>
meadow barley	<i>Hordeum brachyantherum</i> ssp. <i>brachyantherum</i>
California meadow barley	<i>Hordeum brachyantherum</i> ssp. <i>californicum</i>
California horkelia	<i>Horkelia californica</i>
floating marsh pennywort	<i>Hydrocotyle ranunculoides</i>
tinker's penny ⁴	<i>Hypericum anagalloides</i>
hairy cat's ear ⁴	<i>Hypochaeris radicata</i>
Douglas Iris ⁴	<i>Iris douglasiana</i>
baltic rush	<i>Juncus balticus</i>
bog rush	<i>Juncus effusus</i>
irisleaf rush	<i>Juncus xiphioides</i>
junegrass	<i>Koeleria macrantha</i>
beach pea ⁴	<i>Lathyrus japonicus</i>
Jepson's Pea	<i>Lathyrus jepsonii</i>
perennial pea ⁴	<i>Lathyrus latifolius</i>
Oregon pea	<i>Lathyrus polyphyllus</i>
common California aster	<i>Lessingia filaginifolia</i>
California aster	<i>Lessingia filaginifolia</i> var. <i>californica</i>
ox-eye daisy ⁴	<i>Leucanthemum vulgare</i>
Vancouver wild rye	<i>Leymus ×vancouverensis</i>
creeping wild rye	<i>Leymus triticoides</i>

APPENDIX A.) FLORA RECORDED IN THE GREATER TRINIDAD AREA (Fix

capitalization/scientific names and double check updates/list)

Common Name	Scientific Name
lovage	<i>Ligusticum apiifolium</i>
Columbia lily	<i>Lilium columbianum</i>
tiger lily	<i>Lilium pardalinum</i>
toadflax	<i>Linaria canadensis</i>
butter & eggs ⁴	<i>Linaria vulgaris</i>
Italian ryegrass ⁴	<i>Lolium multiflorum</i>
woolly fruited lomatium	<i>Lomatium dasycarpum</i>
common lomatium	<i>Lomatium utriculatum</i>
seaside bird's foot trefoil	<i>Lotus formosissimus</i>
deerweed	<i>Lotus scoparius</i>
ludwigia	<i>Ludwigia hexapetala</i>
miniature lupine	<i>Lupinus bicolor</i>
lupine	<i>Lupinus formosus</i>
seashore lupine	<i>Lupinus littoralis</i>
riverbank lupine	<i>Lupinus rivularis</i>
American water horehound	<i>Lycopus americanus</i>
yellow skunk cabbage	<i>Lysichiton americanus</i>
hyssop loosestrife	<i>Lythrum hyssopifolium</i>
false-lilly-of-the-valley ⁴	<i>Maianthemum dilatatum</i>
blazing star	<i>Mentzelia laevicaulis</i>
marsh scorzonella	<i>Microseris paludosa</i>
scarlet monkeyflower	<i>Mimulus cardinalis</i>
tooth leaved monkeyflower	<i>Mimulus dentatus</i>
Musk Flower	<i>Mimulus moschatus</i>
muskflower	<i>Mimulus moschatus</i> var. <i>moschatus</i>
muskflower	<i>Mimulus moschatus</i> var. <i>sessilifolius</i>
coyote mint	<i>Monardella villosa</i>
small flowered needlegrass	<i>Nassella lepida</i>
Pacific oenanthe	<i>Oenanthe sarmentosa</i>
Wolf's evening primrose ¹⁰	<i>Oenothera wolfii</i>
white oxalis	<i>Oxalis albicans</i>
creeping wood sorrel ⁴	<i>Oxalis corniculata</i>
redwood sorrel ⁴	<i>Oxalis oregana</i>
Bolander's ragwort	<i>Packera bolanderi</i>
seacoast ragwort	<i>Packera bolanderi</i> var. <i>bolanderi</i>
Pacific panic grass	<i>Panicum acuminatum</i> var. <i>acuminatum</i>
Pacific panic grass	<i>Panicum acuminatum</i> var. <i>lindheimeri</i>
knotgrass	<i>Paspalum distichum</i>
Kellogg's yampah	<i>Perideridia kelloggii</i>
coltsfoot ⁴	<i>Petasites frigidus</i> var. <i>palmatus</i>
Rock phacelia	<i>Phacelia californica</i>
reed canarygrass	<i>Phalaris arundinacea</i>
common reed	<i>Phragmites australis</i>
elegant rein orchid	<i>Piperia elegans</i>
dense flowered rein orchid	<i>Piperia elongata</i>
royal rein orchid	<i>Piperia transversa</i>
Rein orchid	<i>Piperia unalascensis</i>
English plantain ⁴	<i>Plantago lanceolata</i>
broadleaf plantain ⁴	<i>Plantago major</i>
naked plantain	<i>Plantago subnuda</i>
Sierra bog orchid	<i>Platanthera dilatata</i> var. <i>leucostachys</i>

APPENDIX A.) FLORA RECORDED IN THE GREATER TRINIDAD AREA (Fix capitalization/scientific names and double check updates/list)

Common Name	Scientific Name
white bog orchid	<i>Platanthera leucostachys</i>
Saprophyte ⁴	<i>Pleuricospora fimbriolata</i>
Canada blue grass	<i>Poa compressa</i>
Kentucky bluegrass	<i>Poa pratensis</i> ssp. <i>pratensis</i>
pine bluegrass	<i>Poa secunda</i> ssp. <i>secunda</i>
ocean bluff blue grass	<i>Poa unilateralis</i>
royal sky pilot	<i>Polemonium carneum</i>
swamp knotweed	<i>Polygonum amphibium</i>
beach knotweed ⁴	<i>Polygonum paronychia</i>
silverweed ⁴	<i>Potentilla anserina</i>
purple marsh cinquefoil	<i>Potentilla palustris</i>
fairy bells ⁴	<i>Prosartres smithii</i>
self-Heal ⁴	<i>Prunella vulgaris</i>
pyracantha ⁴	<i>Pyracantha coccinea</i>
racemose pyrrocoma	<i>Pyrrocoma racemosa</i>
California buttercup	<i>Ranunculus californicus</i>
creeping buttercup	<i>Ranunculus flammula</i>
western buttercup	<i>Ranunculus occidentalis</i>
wild radish ⁴	<i>Raphanus raphanistrum</i>
Tracy's romanzoffia ²	<i>Romanzoffia tracyi</i>
Western yellow cress	<i>Rorippa curvisiliqua</i>
bog yellowcress	<i>Rorippa palustris</i>
sheep sorrel ⁴	<i>Rumex acetosella</i>
curly dock ⁴	<i>Rumex crispus</i>
golden dock	<i>Rumex maritimus</i>
willow dock	<i>Rumex salicifolius</i>
willow dock	<i>Rumex salicifolius</i> var. <i>crassus</i>
willow leaved dock	<i>Rumex salicifolius</i> var. <i>salicifolius</i>
willow dock	<i>Rumex salicifolius</i> var. <i>transitorius</i>
footsteps of spring	<i>Sanicula arctopoides</i>
snakeroot	<i>Sanicula bipinnatifida</i>
Pacific sanicle	<i>Sanicula crassicaulis</i>
tule	<i>Schoenoplectus acutus</i> var. <i>occidentalis</i>
softstem bulrush	<i>Schoenoplectus tabernaemontani</i>
tule	<i>Scirpus acutus</i> var. <i>occidentalis</i>
paniced bulrush	<i>Scirpus microcarpus</i>
big bulrush	<i>Scirpus robustus</i>
tule	<i>Scirpus tabernaemontani</i>
bee plant	<i>Scrophularia californica</i>
snapdragon skullcap	<i>Scutellaria antirrhinoides</i>
yellow stonecrop	<i>Sedum spathulifolium</i>
Bolander's ragwort	<i>Senecio bolanderi</i> var. <i>bolanderi</i>
water groundsel	<i>Senecio hydrophilus</i>
ragwort ⁴	<i>Senecio vulgaris</i>
Checker bloom	<i>Sidalcea malviflora</i>
Oregon checker mallow	<i>Sidalcea oregana</i>
Scouler's large campion	<i>Silene scouleri</i> ssp. <i>grandis</i>
blue eyed grass	<i>Sisyrinchium bellum</i>
false soloman's seal	<i>Smilacina stellata</i>
California goldenrod	<i>Solidago californica</i>
Canada goldenrod	<i>Solidago canadensis</i>

APPENDIX A.) FLORA RECORDED IN THE GREATER TRINIDAD AREA (Fix

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Common Name	Scientific Name
meadow goldenrod	<i>Solidago canadensis</i> ssp. <i>elongata</i>
coast goldenrod	<i>Solidago spathulata</i> ssp. <i>spathulata</i>
hooded ladies tresses ⁴	<i>Spiranthes romanzoffiana</i>
bugle hedgenettle	<i>Stachys ajugoides</i>
ajuga hedge nettle	<i>Stachys ajugoides</i> var. <i>ajugoides</i>
rigid hedge nettle	<i>Stachys ajugoides</i> var. <i>rigida</i>
hedge nettle ⁴	<i>Stachys chamissonis</i>
chickweed ⁴	<i>Stellana media</i>
northern starwort	<i>Stellaria borealis</i> ssp. <i>sitchana</i>
dune daisy ⁴	<i>Tanacetum douglasti</i>
dandelion ⁴	<i>Taraxacum officinale</i>
fringe cups ⁴	<i>Tellima grandiflora</i>
star flower ⁴	<i>Trientalis borealis</i>
forest clover	<i>Trifolium breweri</i>
woolyhead clover	<i>Trifolium eriocephalum</i>
woolyhead clover	<i>Trifolium eriocephalum</i> ssp. <i>eriocephalum</i>
hairy head clover	<i>Trifolium eriocephalum</i> var. <i>eriocephalum</i>
red clover ⁴	<i>Trifolium pratense</i>
white clover ⁴	<i>Trifolium repens</i>
cows clover	<i>Trifolium wormskioldii</i>
giant wakerobin	<i>Trillium chloropetalum</i>
trillium ⁴	<i>Trillium ovatum</i>
white brodiaea	<i>Triteleia hyacinthina</i>
giant creek nettle	<i>Urtica dioica</i> ssp. <i>holosericea</i>
vervain	<i>Verbena lasiostachys</i>
brooklime	<i>Veronica americana</i>
vetch ⁴	<i>Vicia americana</i>
giant vetch	<i>Vicia gigantea</i>
Redwood violet ⁴	<i>Viola sempervirens</i>
narrow leaf mule ears	<i>Wyethia angustifolia</i>
calla lilly ⁴	<i>Zantedeschia aethiopica</i>
chaparral zygadene	<i>Zigadenus fremontii</i>
death camas	<i>Zigadenus venenosus</i> var. <i>venenosus</i>
early harvest brodiaea	<i>Brodiaea coronaria</i>
California lady's slipper	<i>Cypripedium californicum</i>
California oatgrass ⁴	<i>Danthonia californica</i>
California pitcherplant	<i>Darlingtonia californica</i>
queen anne's lace ⁴	<i>Daucus carota</i>
mission bells	<i>Fritillaria affinis</i>
bedstraw ⁴	<i>Galium boreale</i>
seep monkey flower	<i>Mimulus guttatus</i>
California orobanche	<i>Orobanche californica</i>
California pinefoot	<i>Pityopus californica</i>

Annual Herbs

blow wives	<i>Achyrachaena mollis</i>
annual mountain dandelion	<i>Agoseris heterophylla</i>
annual agoseris	<i>Agoseris heterophylla</i> var. <i>heterophylla</i>
small leaved bentgrass	<i>Agrostis microphylla</i>
foxtail	<i>Alopecurus saccatus</i>
Menzies' fiddleneck	<i>Amsinckia menziesii</i>

APPENDIX A.) FLORA RECORDED IN THE GREATER TRINIDAD AREA (Fix

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Common Name	Scientific Name
common fiddleneck	<i>Amsinckia menziesii</i> var. <i>intermedia</i>
woolly breeches	<i>Amsinckia spectabilis</i>
poorman's weatherglass ⁴	<i>Anagallis arvensis</i>
crimson columbine ⁴	<i>Aquilegia formosa</i>
oldfield three awn	<i>Aristida oligantha</i>
common sandweed	<i>Athysanus pusillus</i>
fat hen	<i>Atriplex patula</i>
sloughgrass	<i>Beckmannia syzigachne</i>
rattlesnake grass ⁴	<i>Briza maxima</i>
little quakinggrass ⁴	<i>Briza minor</i>
California brome grass	<i>Bromus carinatus</i>
common brome	<i>Bromus vulgaris</i>
oval searocket ⁴	<i>Cakile edentula</i>
red maids	<i>Calandrinia ciliata</i>
Klamath calycadenia	<i>Calycadenia fremontii</i>
sticky calycadenia	<i>Calycadenia multiglandulosa</i>
hill suncup	<i>Camissonia graciliflora</i>
johnny nip	<i>Castilleja ambigua</i>
valley tassels	<i>Castilleja attenuata</i>
purple owl's clover	<i>Castilleja exserta</i>
cream sacs	<i>Castilleja rubicundula</i> ssp. <i>lithospermoides</i>
Muhlenberg's centaury	<i>Centaurium muehlenbergii</i>
common yellow chaenactis	<i>Chaenactis glabriuscula</i>
thyme leafed spurge	<i>Chamaesyce serpyllifolia</i>
Indian Lettuce ⁴	<i>Chenopodium californicum</i>
coast goosefoot	<i>Chenopodium macrospermum</i> var. <i>halophilum</i>
common microcalis	<i>Cicendia quadrangularis</i>
farewell to spring	<i>Clarkia amoena</i>
Davy's clarkia	<i>Clarkia davyi</i>
purple clarkia	<i>Clarkia purpurea</i>
little spring beauty	<i>Claytonia exigua</i> ssp. <i>exigua</i>
miner's lettuce ⁴	<i>Claytonia perfoliata</i>
white collinsia	<i>Collinsia bartsiiifolia</i>
purple Chinese houses	<i>Collinsia heterophylla</i>
few flowered collinsia	<i>Collinsia sparsiflora</i>
large flowered collomia	<i>Collomia grandiflora</i>
varied leaved collomia	<i>Collomia heterophylla</i>
saltmarsh bird's beak	<i>Cordylanthus maritimus</i>
pigmy weed	<i>Crassula aquatica</i>
pygmy weed	<i>Crassula connata</i>
dove weed	<i>Croton setigerus</i>
flaccid cryptantha	<i>Cryptantha flaccida</i>
coast cryptantha	<i>Cryptantha leiocarpa</i>
rattlesnake weed	<i>Daucus pusillus</i>
annual hairgrass	<i>Deschampsia danthonioides</i>
western tansymustard	<i>Descurainia pinnata</i>
panicked willow herb	<i>Epilobium brachycarpum</i>
dense flowered boisduvalia	<i>Epilobium densiflorum</i>
smooth spike primrose	<i>Epilobium pygmaeum</i>
narrow leaved boisduvalia	<i>Epilobium torreyi</i>
turkey mullein	<i>Eremocarpus setigerus</i>

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Common Name	Scientific Name
shortfruit stork's bill	<i>Erodium brachycarpum</i>
large leaved filaree	<i>Erodium macrophyllum</i>
spurge ⁴	<i>Euphorbia peplus</i>
warty spurge	<i>Euphorbia spathulata</i>
California herba impia	<i>Filago californica</i>
bedstraw	<i>Galium triflorum</i>
Carolina geranium	<i>Geranium carolinianum</i>
blue field gilia	<i>Gilia capitata</i>
Pacific gilia ²	<i>Gilia capitata</i> ssp. <i>pacifica</i>
tricolor gilia	<i>Gilia tricolor</i>
common bluecup	<i>Githopsis specularioides</i>
western marsh cudweed	<i>Gnaphalium palustre</i>
bractless hedgehyssop	<i>Gratiola ebracteata</i>
California mustard	<i>Guillenia lasiophylla</i>
hayfield tarweed	<i>Hemizonia congesta</i>
hayfield tarweed	<i>Hemizonia congesta</i> ssp. <i>clevelandii</i>
hayfield tarweed	<i>Hemizonia congesta</i> ssp. <i>luzulifolia</i>
coastal tarweed	<i>Hemizonia corymbosa</i>
Fitch's tarweed	<i>Hemizonia fitchii</i>
common spikeweed	<i>Hemizonia pungens</i>
rareflower heterocodon	<i>Heterocodon rariflorum</i>
keeled bulrush	<i>Isolepis carinata</i>
low bulrush	<i>Isolepis cernua</i>
Kellogg's dwarf rush	<i>Juncus kelloggii</i>
common hareleaf	<i>Lagophylla ramosissima</i>
California goldfields	<i>Lasthenia californica</i>
California goldfields	<i>Lasthenia californica</i> ssp. <i>californica</i>
perennial goldfields	<i>Lasthenia californica</i> ssp. <i>macrantha</i>
perennial goldfields	<i>Lasthenia macrantha</i>
Beach Layia ⁴	<i>Layia carnasa</i>
San Diego pepperweed	<i>Lepidium latipes</i>
peppergrass	<i>Lepidium nitidum</i>
false babystars	<i>Leptosiphon androsaceus</i>
true babystars	<i>Leptosiphon bicolor</i>
thread linanthus	<i>Leptosiphon filipes</i>
common meadowfoam	<i>Limnanthes douglasii</i>
false baby stars	<i>Linanthus androsaceus</i>
bicolor linanthus	<i>Linanthus bicolor</i>
whisker brush	<i>Linanthus ciliatus</i>
filiform linanthus	<i>Linanthus filipes</i>
pale flax	<i>Linum bienne</i>
smallflower halfchaff sedge	<i>Lipocarpha micrantha</i>
Short podded Lotus	<i>Lotus humistratus</i>
small flowered lotus	<i>Lotus micranthus</i>
Spanish clover	<i>Lotus purshianus</i> var. <i>purshianus</i>
Chilean bird's foot trefoil	<i>Lotus wrangelianus</i>
fleshy lupine	<i>Lupinus affinis</i>
pale yellow lupine	<i>Lupinus luteolus</i>
dense flowered platycarpus	<i>Lupinus microcarpus</i> var. <i>densiflorus</i>
sky lupine	<i>Lupinus nanus</i>
Cleveland's dandelion	<i>Malacothrix clevelandii</i>

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Common Name	Scientific Name
pineapple weed ⁴	<i>Matricaria matricarioides</i>
white sweet clover ⁴	<i>Melilotus alba</i>
yellow sweet clover ⁴	<i>Melilotus officinalis</i>
nada stickleaf	<i>Mentzelia dispersa</i>
micropus	<i>Micropus californicus</i>
q tips	<i>Micropus californicus</i> var. <i>californicus</i>
Sierra foothills microseris	<i>Microseris acuminata</i>
Douglas' microseris	<i>Microseris douglasii</i>
slender phlox	<i>Microsteris gracilis</i> var. <i>humilior</i>
wingstem monkeyflower	<i>Mimulus alsinoides</i>
floriferous monkeyflower	<i>Mimulus floribundus</i>
Layne's monkeyflower	<i>Mimulus layneae</i>
false monkeyflower	<i>Mimulus pilosus</i>
California sandwort	<i>Minuartia californica</i>
sandwort	<i>Minuartia douglasii</i>
needleleaf navarretia	<i>Navarretia intertexta</i>
interwoven navarretia	<i>Navarretia intertexta</i> ssp. <i>intertexta</i>
white headed navarretia	<i>Navarretia leucocephala</i>
Baker's navarretia	<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>
baby blue eyes	<i>Nemophila menziesii</i>
littlefoot nemophila	<i>Nemophila pedunculata</i>
coyote tobacco	<i>Nicotiana attenuata</i>
Indian tobacco	<i>Nicotiana quadrivalvis</i>
sleeping combseed	<i>Pectocarya penicillata</i>
tiny pygmy daisy	<i>Pentachaeta alsinoides</i>
stinging phacelia	<i>Phacelia malvifolia</i>
slender phlox	<i>Phlox gracilis</i>
bracted popcornflower	<i>Plagiobothrys bracteatus</i>
sculptured popcornflower	<i>Plagiobothrys glyptocarpus</i>
rusty popcornflower	<i>Plagiobothrys nothofulvus</i>
stalked popcornflower	<i>Plagiobothrys stipitatus</i>
rough fruited allocarya	<i>Plagiobothrys trachycarpus</i>
creamcups	<i>Platystemon californicus</i>
long spurred plectritis	<i>Plectritis ciliosa</i>
Sacramento mesamint	<i>Pogogyne zizyphoroides</i>
scatter knotweed	<i>Polygonum douglasii</i> ssp. <i>spergulariiforme</i>
woolly marbles	<i>Psilocarphus brevissimus</i>
pterostegia	<i>Pterostegia drymarioides</i>
rigiopappus	<i>Rigiopappus leptocladus</i>
annual tule	<i>Scirpus cernuus</i>
keeled bulrush	<i>Scirpus koilolepis</i>
Scribner's grass	<i>Scribneria bolanderi</i>
fringed checkerbloom	<i>Sidalcea diploscypha</i>
California Indian pink	<i>Silene californica</i>
sand spurry	<i>Spergularia marina</i>
salt sandspurry	<i>Spergularia salina</i>
shining chickweed	<i>Stellaria nitens</i>
virgate stephanomeria	<i>Stephanomeria virgata</i>
oblong bluecurls	<i>Trichostema oblongum</i>
rancheria clover	<i>Trifolium albopurpureum</i>
Indian clover	<i>Trifolium albopurpureum</i> var. <i>albopurpureum</i>

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branched Indian clover	<i>Trifolium albopurpureum</i> var. <i>dichotomum</i>
olive clover	<i>Trifolium albopurpureum</i> var. <i>olivaceum</i>
bearded clover	<i>Trifolium barbigerum</i>
bearded clover	<i>Trifolium barbigerum</i> var. <i>barbigerum</i>
Pinole clover	<i>Trifolium bifidum</i>
pale sack clover	<i>Trifolium depauperatum</i>
pale bladder clover	<i>Trifolium depauperatum</i> var. <i>amplectens</i>
dwarf sack clover	<i>Trifolium depauperatum</i> var. <i>depauperatum</i>
sour clover	<i>Trifolium fucatum</i>
pinpoint clover	<i>Trifolium gracilentum</i>
maiden clover	<i>Trifolium microcephalum</i>
white tipped clover	<i>Trifolium variegatum</i>
tomcat clover	<i>Trifolium willdenovii</i>
Venus' looking glass	<i>Triodanis biflora</i>
butter 'n' eggs	<i>Triphysaria eriantha</i>
yellow owl's clover	<i>Triphysaria versicolor</i> ssp. <i>faucibarbata</i>
Uropappus	<i>Uropappus lindleyi</i>
hairy purslane speedwell	<i>Veronica peregrina</i> ssp. <i>xalapensis</i>
Eastwood fescue	<i>Vulpia microstachys</i> var. <i>ciliata</i>
desert fescue	<i>Vulpia microstachys</i> var. <i>microstachys</i>
Pacific fescue	<i>Vulpia microstachys</i> var. <i>pauciflora</i>
hairy rattail fescue	<i>Vulpia myuros</i> var. <i>hirsuta</i>
six weeks fescue	<i>Vulpia octoflora</i>
Vines	
virgin's bower	<i>Clematis ligusticifolia</i>
canyon dodder	<i>Cuscuta subinclusa</i>
English Ivy ⁴	<i>Hedera helix</i>
wild cucumber	<i>Marah fabaceus</i>
wild cucumber ⁴	<i>Marah oreganus</i>
chaparral dodder	<i>Cuscuta californica</i>
Pacific blackberry	<i>Rubus ursinus</i>
Poisonoak	<i>Toxicodendron diversilobum</i>
Ferns and Fern Allies	
southern maiden hair	<i>Adiantum capillus-veneris</i>
California maiden hair	<i>Adiantum jordanii</i>
California lace fern	<i>Aspidotis californica</i>
lady fern ⁴	<i>Athyrium filix-femina</i>
deer fern ⁴	<i>Blechnum spicant</i>
brittle bladderfern	<i>Cystopteris fragilis</i>
wood fern ⁴	<i>Dryopteris expansa</i>
common horsetail	<i>Equisetum arvense</i>
common scouring rush	<i>Equisetum hyemale</i> ssp. <i>affine</i>
horsetail	<i>Equisetum laevigatum</i>
giant horse tail	<i>Equisetum telmateia</i> ssp. <i>braunii</i>
running pine ²	<i>Lycopodium clavatum</i>
coffee fern	<i>Pellaea andromedifolia</i>
birdfoot cliffbrake	<i>Pellaea mucronata</i>
goldenback fern	<i>Pentagramma triangularis</i>
leathery polypody	<i>Polypodium scolieri</i>

APPENDIX A.) FLORA RECORDED IN THE GREATER TRINIDAD AREA (Fix

capitalization/scientific names and double check updates/list)

Common Name	Scientific Name
sword fern	<i>Polystichum munitum</i>
hairy brackenfern	<i>Pteridium aquilinum</i> var. <i>pubescens</i>
Wallace moss fern	<i>Selaginella wallacei</i>
giant chain fern	<i>Woodwardia fimbriata</i>
Freshwater Aquatic	
water plantain	<i>Alisma plantago-aquatica</i>
California water starwort	<i>Callitriche marginata</i>
Chilean waterwort	<i>Elatine chilensis</i>
Sierra waterwort	<i>Elatine gracilis</i>
northwestern mannagrass	<i>Glyceria occidentalis</i>
common mares tail	<i>Hippuris vulgaris</i>
Siberian milfoil	<i>Myriophyllum sibiricum</i>
yellow pond lily	<i>Nuphar luteum</i> ssp. <i>polysepalum</i>
whitewater crowfoot	<i>Ranunculus aquatilis</i>
spiral ditchgrass	<i>Ruppia cirrhosa</i>
ditchgrass	<i>Ruppia maritima</i>
broadleaf cattail	<i>Typha latifolia</i>
Marine Aquatic	
Red Algae	<i>Ahnfeltia fastigiata</i> <i>Ahnfeltiopsis linearis</i> <i>Coralline crust</i> <i>Corallina officinalis</i> var. <i>chilensis</i> <i>Cryptosiphonia woodii</i> <i>Delesseria decipiens</i> <i>Dilsea californica</i> <i>Endocladia muricata</i> <i>Farlowia mollis</i> <i>Hymenena flabelligera</i> <i>Mastocarpus gametophyte crust</i> <i>Mastocarpus jardinii</i> <i>Mastocarpus papillatus</i> <i>Mazzaella affinis</i> <i>Mazzaella oregona</i> <i>Mazzaella parksii</i> <i>Mazzaella splendens</i> <i>Neoptilota densa</i> <i>Neorhodemela larix</i> <i>Odonthalia floccosa</i> <i>Osmundea spectabilis</i> <i>Palmaria hecatensis</i> <i>Polyneura latissima</i> <i>Polysiphonia</i> sp. <i>Porphyra</i> sp. <i>Prionitis lanceolata</i> <i>Prionitis lyallii</i> <i>Ptilota filicina</i>
Brown Algae	<i>Alaria marginata</i>

APPENDIX A.) FLORA RECORDED IN THE GREATER TRINIDAD AREA (Fix capitalization/scientific names and double check updates/list)

Common Name	Scientific Name
	<i>Analipus japonicus</i>
	<i>Colpomenia bullosa</i>
	<i>Desmerestia ligulata</i>
	<i>Egregia menziesii</i>
	<i>Fucus gardnerii</i>
	<i>Laminaria setchellii</i>
	<i>Laminaria sinclairii</i>
	<i>Pelvetiopsis limitata</i>
	<i>Soranthera ulvoidea</i>
Green Algae	<i>Acrosiphonia coalita</i>
	<i>Cladophora columbiana</i>
	<i>Ulva</i> sp.

Numerical references were obtained from the following sources. Species without a numerical designation were obtained using the Calflora website query (<http://www.calflora.org/> accessed last October 28, 2009) for plants existing in Humboldt County between 0-300m in the habitat communities present in the Trinidad Area. This list does not represent a complete and accurate flora, but an estimation of the flora that exists in the area based upon completed surveys, publications and databases available.

¹Allen, Don. NR Services Division, RCAA

²California Natural Diversity Database

³Johnston, Verna R., 1994, *California Forests and Woodlands*, UC Press, Berkeley, CA, 12-27.

⁴Patrick's Point State Park Brochures

⁵Save the Redwoods League, <http://www.savetheredwoods.org/education/coastredwood.shtml>.

⁶Sawyer, John O., Professor of Botany, Emeritus, Humboldt State University; co-author *Trees and Shrubs of California (California Natural History Guides)* and *Manual of California Vegetation*

⁷Trinidad Pier Reconstruction Project, Trinidad Pier Intertidal Assessment

⁸United States Fish and Wildlife Threatened & Endangered Species List

⁹http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi/Show?id=oenothera_wolfii

¹⁰www.fs.fed.us/psw/publications/documents/gtr-152/chap33.pdf

¹¹<http://www.innvista.com/science/ecology/parks/patrick.htm>

¹²<http://www.humboldt.edu/~marinelb/animals.html>

¹³draft Trinidad General Plan Conservation Element

APPENDIX B.) FAUNA RECORDED IN THE GREATER TRINIDAD AREA (Fix

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	Common Name	Scientific Name
INVERTEBRATES		
	Porifera	
	Crumb-of-bread Sponge ⁷	<i>Halichondria panicea</i>
	Orange-red Encrusting Sponge ¹¹	<i>Ophlitaspongia pennata</i>
	Purple Sponge ¹¹	<i>Haliclona permolis</i>
Urn Sponge ¹¹	<i>Leucilla nuttingi</i>	
Yellow Boring Sponge ¹¹	<i>Cliona celata</i>	
Cnidaria	Aggregating Anemone ⁷	<i>Anthopleura elegantissima</i>
	Brooding Anemone ⁷	<i>Epiactis prolifera</i>
	Club-tipped Anemone ¹¹	<i>Corynactis californica</i>
	Giant Green Anemone ⁷	<i>Anthopleura xanthogrammica</i>
	Hydroid ¹¹	<i>Tubularia sp.</i>
	Hydroid ¹¹	<i>Eudendrium sp.</i>
	Hydroid ¹¹	<i>Obelia sp.</i>
	Orange Cup Coral ⁷	<i>Balanophyllia elegans</i>
	Ostrich Plume Hydroid ¹¹	<i>Aglaophenia struthionides</i>
	Plumose Anemone ¹¹	<i>Metridium senile</i>
	Red Anemone ¹¹	<i>Tealia jofotensis</i>
	Sea Firs ⁷	<i>Abietinaria abietina</i>
Zig-Zag Hydroid	<i>Sertularella turgida</i> ⁷	
Platyhelminthes	Brown Flat Worm ¹¹	<i>Notoplana acticola</i>
Mollusca	Angular Unicorn ¹¹	<i>Acanthina apirata</i>
	Black Turban Snail ⁷	<i>Tegula funebris</i>
	Black-leather Chiton ¹¹	<i>Katharina tunicata</i>
	Brown Turban Snail ¹¹	<i>Tegula brunnea</i>
	California Mussel ⁷	<i>Mytilus californianus</i>
	Chalk-lined Dirona ¹¹	<i>Dirona albolineata</i>
	Channeled Top Snail ¹¹	<i>Calliostoma canaliculatum</i>
	Checkered Periwinkle ⁷	<i>Littorina scutulata</i>
	Chiton ¹¹	<i>Ischnochiton sp.</i>
	Chiton ¹¹	<i>Mopalia spp.</i>
	Common Littleneck Clam ¹¹	<i>Protothaca staminea</i>
	Diamond-backed Nudibranch ¹¹	<i>Tritonia festiva</i>
	Dire Whelk ¹¹	<i>Searlesia dira</i>
	Dogwinkle ¹¹	<i>Nucella lamellosa</i>
	Dunce-cap Limpet ¹¹	<i>Acmaea mitra</i>
	Eroded Periwinkle ¹¹	<i>Littorina planaxis</i>
	Fenestrated Limpet ⁷	<i>Tectura fenestrata</i>
	File Limpet ⁷	<i>Collisella limatula</i>
	Gumboot Chiton ¹¹	<i>Cryptochiton stelleri</i>
	Kelp Limpet ¹¹	<i>Notoacmea insessa</i>
	Keyhole Limpet ¹¹	<i>Fissurella volcano</i>
	Large or Flat Periwinkle ⁷	
	Leafy Hornmouth ¹¹	<i>Ceratostoma foliatum</i>
	Lined Chiton ¹¹	<i>Tonicella lineata</i>
	Little Black Limpets ⁷	
	Mask Limpet ⁷	
	Merten's Chiton ¹¹	<i>Lepidozona mertensii</i>
	Northern Pacific Giant Octopus ¹¹	<i>Octopus dofleini</i>

APPENDIX B.) FAUNA RECORDED IN THE GREATER TRINIDAD AREA (Fix

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	Common Name	Scientific Name
	Opalescent Nudibranch ¹¹	<i>Phidiana crassicornis</i>
	Pacific Plate Limpet ⁷	<i>Notoacmea scutum</i>
	Razor Clam ¹¹	<i>Siliqua patula</i>
	Red Abalone ¹¹	<i>Haliotis refuscens</i>
	Red Octopus ¹¹	<i>Octopus rubescens</i>
	Red Sea Slug ⁷	
	Red-Sponge Nudibranch ¹¹	<i>Rostanga pulchra</i>
	Ribbed Limpet ⁷	<i>Collisella digitalis</i>
	Rock Scallop ⁷	
	Rough Limpet ⁷	
	Sea Lemon ⁷	<i>Anisodoris nobilis</i>
	Sea Slug ¹¹	<i>Dendronotus sp.</i>
	Sea-clown Nudibranch ¹¹	<i>Triopha catalinae</i>
	Shag-rug Nudibranch ¹¹	<i>Aeolidia papillosa</i>
	Shield Limpet ⁷	<i>Collisella pelta</i>
	Snail ⁷	<i>Lacuna sp.</i>
	Spotted Dirona ¹¹	<i>Dirona picta</i>
	Spotted Nudibranch ¹¹	<i>Diaulula sandiegensis</i>
	Surfgrass Limpet ¹¹	<i>Notoacmea paleacea</i>
	Veiled Chiton ¹¹	<i>Placiphorella velata</i>
	Wine-plume Dorid ¹¹	<i>Acanthodoris nanaimoensis</i>
	Yellow-edged Cadlina ¹¹	<i>Cadlina luteomarginata</i>
Sipuncula	Peanut Worm ¹¹	<i>Phascolosoma agassizii</i>
Annelida	Fragile Tube Worm ⁷	<i>Salmacina tribranchiata</i>
	Bristle Worm ¹¹	<i>Nereis spp.</i>
	Feather-Duster Worm ¹¹	<i>Eudistylia polymorpha</i>
	Ornate Tube Worm ⁷	<i>Diopatra ornata</i>
	other Solitary Tube Worms ⁷	
	other Colonial Tubeworms ⁷	
	Red Tube Worm ¹¹	<i>Serpula vermicularis</i>
	Sandcastle Worm ⁷	<i>Phragmatopoma californica</i>
Arthropoda	Acorn Barnacle ⁷	<i>Balanus glandula</i>
	Blue-handed Hermit Crab ⁷	<i>Pagurus samuelis</i>
	Buckshot Barnacle ⁷	<i>Chthamalus dalli</i>
	Dungeness Crab ¹¹	<i>Cancer magister</i>
	Flat Porcelain Crab ¹¹	<i>Petrolisthes cinctipes</i>
	Goose Barnacle ¹¹	<i>Pollicipes polymerus</i>
	Grainy Hermit Crab ¹¹	<i>Pagurus granosimanus</i>
	Hairy Hermit Crab ⁷	<i>Pagurus hirsutiusculus</i>
	Kelp Crab ⁷	<i>Pugettia producta</i>
	Rock Week Ispod	<i>Idotea wasnesenskii</i> ⁷
	Lined-shore Crab ¹¹	<i>Pachygrapsus crassipes</i>
	Marine Pillbug ¹¹	<i>Cirolana harfordi</i>
	Purple Shore Crab ¹¹	<i>Hemigrapsus nudus</i>
	Red Crab ¹¹	<i>Cancer productus</i>
	Rock Crab ¹¹	<i>Cancer antennarius</i>
	Rock Louse ¹¹	<i>Ligia pallasii</i>
	Rockweed Isopod ¹¹	<i>Idotea wasnesenskii</i>

APPENDIX B.) FAUNA RECORDED IN THE GREATER TRINIDAD AREA (Fix

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	Common Name	Scientific Name
	Sharp-nosed Crab ⁷	<i>Scyra acutifrons</i>
	Sheep Crab ⁷	<i>Loxorhynchus grandis</i>
	Spider Crab ⁷	<i>Loxorhynchus crispatus</i>
	Thatched Barnacle ⁷	<i>Balanus cariosus</i>
	Thick-clawed Porcelain Crab ¹¹	<i>Pachycheles rudis</i>
	Umbrella Crab ¹¹	<i>Cryptolithodes sitchensis</i>
	Western Sea Roach ¹¹	<i>Ligia occidentalis</i>
Echinodermata	Bat Sea Star ⁷	<i>Patiria miniata</i>
	Black Sea Cucumber ¹¹	<i>Cucumaria lubrica</i>
	Brittle Star ⁷	<i>Amphipholis sp.</i>
	CA Sea Cucumber ¹¹	<i>Parastichopus californicus</i>
	Crevice Brittle Star ¹¹	<i>Ophiopholis sp.</i>
	Dawson's Sun Star ¹¹	<i>Solaster dawsoni</i>
	Equal Arm Star ⁷	
	Giant Sea Star ⁷	
	Leather Star ⁷	<i>Dermasterias imbricata</i>
	Morning Sunstar ⁷	
	Mottled Sea Star ⁷	<i>Evasterias troschelii</i>
	Ochre Starfish ¹¹	<i>Pisaster ochraceus</i>
	Orange Sea Cucumber ¹¹	<i>Cucumaria miniata</i>
	Pacific Blood Starfish ⁷	
	Purple Sea Urchin ¹¹	<i>Strongylocentrotus purpuratus</i>
	Rainbow Sea Star ⁷	
	Red Sea Urchin ¹¹	<i>Strongylocentrotus franciscanus</i>
	Sand Dollar ¹¹	<i>Dendraster excentricus</i>
	Short-spined Sea Star ⁷	<i>Pisaster brevispinus</i>
	Stimpson's Sun Star ⁷	<i>Solaster stimpsoni</i>
	Sunflower Star ^{7,12}	
	White Sea Cucumber ¹¹	<i>Eupentacta quinquesemita</i>
CHORDATA		
<i>Urochordata</i>	Ascidians ⁷	<i>Aplidium sp.</i> ⁷
	Monterey Stalked Tunicate ⁷	<i>Metandocarpa taylora</i> ⁷
	Translucent Orange Slab Seasquirt ⁷	<i>Styela montereyensis</i>
		<i>Aplidium solidum</i>
AMPHIBIANS	Western Tailed Frog ²	<i>Ascaphus truei</i>
FISH	Bay Pipefish ⁷	
	Black Rockfish ⁷	
	Blue Rockfish ⁷	
	Brown Irish Lord ⁷	
	Buffalo Sculpin ⁷	
	Cabezon ⁷	
	Calico Surfperch ⁷	
	Chinook Salmon ⁷	
	Coast Cutthroat Trout ²	
	Copper Rockfish ⁷	
	Curlfin Turbot ⁷	

APPENDIX B.) FAUNA RECORDED IN THE GREATER TRINIDAD AREA (Fix

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Common Name	Scientific Name
English Sole ⁷	
Fluffy Sculpin ⁷	<i>Oligocottus snyderi</i>
Grass Rockfish ⁷	
Jacksmelt ⁷	
Kelp Greenling ⁷	
Lingcod ⁷	
Night Smelt ⁷	
Northern Clingfish ⁷	<i>Gobiesox maeandricus</i>
Nothern Anchovy ⁷	
Pacific Herring ⁷	
Pacific Sanddab ⁷	
Pacific Sandsole ⁷	
Pacific Staghorn Sculpin ⁷	
Pacific Tomcod ⁷	
Penpoint Gunnel ⁷	
Pile Perch ⁷	
Pricklebreast Poacher ⁷	
Prickly Sculpin ⁷	
Redtail Surfperch ⁷	
Ringtail Snailfish ⁷	
Rock Greenling ⁷	
Saddleback Gunnel ⁷	
Sailfin Sculpin ⁷	
Sharpnose Sculpin ⁷	
Shiner Surfperch ⁷	
Showy Snailfish ⁷	
Silver Surfperch ⁷	
Silverspotted Sculpin ⁷	
Speckled Sanddab ⁷	
Spotfin Surfperch ⁷	
Starry Flounder ⁷	
Striped Surfperch ⁷	
Surf Smelt ⁷	
Threespine Stickleback ⁷	
Tidepool Sculpin ⁷	<i>Oligocottus maculosus</i>
Tidepool Snailfish ⁷	
Tidewater Goby	<i>Eucyclogobius Newberryi</i>
Topsmelt ⁷	
Tubenose Poacher ⁷	
Tube-snout ⁷	
Walleye Surfperch ⁷	
White Seaperch ⁷	
Whitebait Smelt ⁷	

BIRDS

Cormorants & Pelicans

Brandt's Cormorant ⁴	<i>Phalacrocorax penicillatus</i>
Double-crested Cormorant ⁴	<i>Phalacrocorax auritus</i>
Pelagic Cormorant ⁴	<i>Phalacrocorax pelagicus</i>
Brown Pelican ⁴	<i>Pelecanus occidentalis</i>

Doves & Pigeons

Pacific Band-tailed Pigeon ⁴	<i>Columba fasciata monilis</i>
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APPENDIX B.) FAUNA RECORDED IN THE GREATER TRINIDAD AREA (Fix

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	Common Name	Scientific Name
	Western Mourning Dove ⁴	<i>Zenaidura macroura marginella</i>
Goatsuckers	Common Nighthawk ⁴	<i>Chordeiles minor</i>
Grebes	Eared Grebe ⁴	<i>Podiceps nigricollis</i>
	Horned Grebe ⁴	<i>Podiceps auritus</i>
	Red-Necked Grebe⁴	<i>Podiceps grisegena</i>
	Western Grebe ⁴	<i>Aechmophorus occidentalis</i>
Hawks, Falcons & Vultures	American Kestrel ⁴	<i>Falco sparverius</i>
	North American White-tailed Kite ⁴	<i>Elanus leucurus majusculus</i>
	Cooper's Hawk ⁴	<i>Accipiter cooperii</i>
	Ferruginous Hawk ⁴	<i>Buteo regalis</i>
	Merlin ⁴	<i>Falco columbarius</i>
	Northern Harrier ⁴	<i>Circus cyaneus</i>
	American Osprey ⁴	<i>Pandion haliaetus carolinensis</i>
	Western Peregrine Falcon ⁴	<i>Falco peregrinus auritus</i>
	Red-breasted red-shouldered Hawk ⁴	<i>Buteo lineatus elegans</i>
	Western Red-tailed Hawk ⁴	<i>Buteo jamaicensis calurus</i>
	Rough-legged Hawk ⁴	<i>Buteo lagopus</i>
	Northern Sharp-shinned Hawk ⁴	<i>Accipiter striatus velox</i>
	Turkey Vulture ⁴	<i>Cathartes aura</i>
Hérons & Egrets	California Great Blue Heron ⁴	<i>Ardea herodias hyperonca</i>
	American Great Egret ⁴	<i>Ardea herodias egretta</i>
	Snowy Egret ⁴	<i>Egretta thula</i>
Hummingbirds & Swifts	Allen's Hummingbird ⁴	<i>Selasphorus sasin</i>
	Anna's Hummingbird ⁴	<i>Calypte anna</i>
	Black Swift ⁴	<i>Cypseloides niger</i>
	Rufous Hummingbird ⁴	<i>Selasphorus rufus</i>
	Vaux's Swift ⁴	<i>Chaetura vauxi</i>
Kingfishers	Western Belted Kingfisher ⁴	<i>Megaceryle alcyon caurina</i>
Loons	Arctic Loon ⁴	<i>Gavia pacifica</i>
	Common Loon ⁴	<i>Gavia immer</i>
	Red-throated Loon ⁴	<i>Gavia stellata</i>
Owls	Barn Owl ⁴	<i>Tyto alba</i>
	Great Horned Owl ⁴	<i>Bubo virginianus</i>
	Pygmy Owl ⁴	<i>Glaucidium californicum</i>
	Northern Saw-whet Owl ⁴	<i>Aegolius acadicus</i>
	Screech Owl ⁴	<i>Otus kennicottii</i>
Perching Birds		
<i>Blackbirds & Orioles</i>	Brewer's Blackbird ⁴	<i>Euphagus cyanocephalus</i>
	Brown-headed Cowbird ⁴	<i>Molothrus ater</i>
	Northern Oriole ⁴	<i>Icterus bullockii</i>
	Red-winged Blackbird ⁴	<i>Agelaius phoeniceus</i>
	Western Meadowlark ⁴	<i>Sturnella neglecta</i>

APPENDIX B.) FAUNA RECORDED IN THE GREATER TRINIDAD AREA (Fix

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	Common Name	Scientific Name
<i>Bushtits</i>	Common Bushtit ⁴	<i>Psaltriparus minimus</i>
<i>Chickadees</i>	Chestnut-backed Chickadee ⁴	<i>Poecile rufescens</i>
<i>Creepers</i>	Brown Creeper ⁴	<i>Certhia americana</i>
<i>Crossbills</i>	Red Crossbill ⁴	<i>Loxia curvirostra</i>
<i>Finches</i>	American Goldfinch ⁴ House Finch ⁴ Lesser Goldfinch ⁴ Pine Siskin ⁴ California Purple Finch ⁴	<i>Carduelis tristis</i> <i>Carpodacus mexicanus frontalis</i> <i>Carduelis psaltria</i> <i>Carduelis pinus</i> <i>Carpodacus purpureus californicus</i>
<i>Flycatchers</i>	Ash-throated Flycatcher ⁴ California Black Phoebe ⁴ Olive-sided Flycatcher ⁴ Pacific-slope Flycatcher ⁴ Western Kingbird ⁴ Western Wood-Pee-wee ⁴	<i>Myiarchus cinerascens</i> <i>Sayornis nigricans semiatra</i> <i>Nuttallorinis borealis</i> <i>Empidonax difficilis</i> <i>Tyrannus verticalis</i> <i>Myiochanes richardsonii richardsonii</i>
<i>Grosbeaks & Buntings</i>	Black-headed Grosbeak ⁴ Evening Grosbeak ⁴ Lazuli Bunting ⁴	<i>Pheucticus melanocephalus</i> <i>Coccothraustes vespertinus</i> <i>Passerina amoena</i>
<i>Jays, Ravens & Crows</i>	Gray Jay ⁴ Steller's Jay ⁴ Northern Raven ⁴ American Crow ⁴	<i>Perisoreus canadensis</i> <i>Cyanocitta stelleri</i> <i>Corvus corax</i> <i>Corvus brachyrhynchos</i>
<i>Kinglets & Thrushes</i>	Coastal Varied Thrush ⁴ Golden-crowned Kinglet ⁴ Hermit Thrush ⁴ Ruby-crowned Kinglet ⁴ Swainson's Thrush ⁴ Western American Robin ⁴ Western Bluebird ⁴	<i>Ixoreus naevius naevius</i> <i>Regulus satrapa</i> <i>Catharus guttatus</i> <i>Regulus calendula</i> <i>Catharus ustulatus</i> <i>Turdus migratorius propinquus</i> <i>Sialia mexicana</i>
<i>Nuthatches</i>	Red-breasted Nuthatch ⁴	<i>Sitta canadensis</i>
<i>Pipits</i>	Water Pipit ⁴	<i>Anthus spinoletta</i>
<i>Sparrows & Towhees</i>	Fox Sparrow ⁴ Golden-crowned Sparrow ⁴ House Sparrow ⁴ Lincoln's Sparrow ⁴ Savannah Sparrow ⁴ Song Sparrow ⁴ Western Chipping Sparrow ⁴ White-crowned Sparrow ⁴	<i>Passerella iliaca</i> <i>Zonotrichia atricapilla</i> <i>Passer domesticus</i> <i>Melanospiza lincolni</i> <i>Passerculus sandwichensis</i> <i>Melanospiza melodia</i> <i>Spizella passerina arizonae</i> <i>Zonotrichia leucophrys</i>

APPENDIX B.) FAUNA RECORDED IN THE GREATER TRINIDAD AREA (Fix

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	Common Name	Scientific Name
	Rufous-sided Towhee ⁴	<i>Pipilo erythrophthalmus</i>
Starlings	European Starling ⁴	<i>Sturnus vulgaris vulgaris</i>
Swallows	American Barn Swallow ⁴	<i>Hirundo rustica erythrogaster</i>
	Cliff Swallow ⁴	<i>Hirundo pyrrhonota</i>
	Purple Martin ⁴	<i>Progne subis</i>
	Northern Rough-winged Swallow ⁴	<i>Stelgidopteryx ruficollis serripennis</i>
	Tree Swallow ⁴	<i>Iridoprocne bicolor</i>
	Northern Violet-green Swallow ⁴	<i>Tachycineta thalassina lepida</i>
Tanagers	Western Tanager ⁴	<i>Piranga ludoviciana</i>
Vireos	California Hutton's Vireo ⁴	<i>Vireo huttoni huttoni</i>
	Solitary Vireo ⁴	<i>Vireo solitarius</i>
	Western Warbling Vireo ⁴	<i>Vireo gilvus swainsonii</i>
Warblers	California Yellow Warbler ⁴	<i>Dendroica petechia brewsteri</i>
	Hermit Warbler ⁴	<i>Dendroica occidentalis</i>
	MacGillivray's Warbler ⁴	<i>Oporornis tolmiei tolmiei</i>
	Nashville Warbler ⁴	<i>Vermivora ruficapilla</i>
	Orange-crowned Warbler ⁴	<i>Vermivora celata</i>
	Sierra Nevada Dark-eyed Junco ⁴	<i>Junco hyemalis therberi</i>
	Townsend's Warbler ⁴	<i>Dendroica townsendi</i>
	Wilson's Warbler ⁴	<i>Wilsonia pusilla</i>
	Yellow-rumped Warbler ⁴	<i>Dendroica coronata</i>
Waxwings	Cedar Waxwing ⁴	<i>Bombycilla cedrorum</i>
Wrens	Bewick's Wren ⁴	<i>Thryomanes bewickii marinensis</i>
	Western House Wren ⁴	<i>Troglodytes aedon parkmanii</i>
	Western Winter Wren ⁴	<i>Troglodytes troglodytes pacificus</i>
Wrentits	Wrentit ⁴	<i>Chamaea fasciata</i>
Petrels	Fork-tailed Storm-Petrel ²	<i>Oceanodroma furcata</i>
Quails	California Quail ⁴	<i>Callipepla californica</i>
Shorebirds	Black-legged Kittiwake⁴	
	Black Oystercatcher ⁴	<i>Haematopus bachmani</i>
	Black Turnstone ⁴	<i>Arenaria melanocephala</i>
	Black-bellied Plover ⁴	<i>Pluvialis squatarola</i>
	Bonapartes Gull ⁴	<i>Larus philadelphia</i>
	California Gull ⁴	<i>Larus californicus</i>
	Caspian Gull ⁴	<i>Sterna caspia</i>
	Cassin's Auket ⁴	<i>Ptychoramphus aleuticus</i>
	Common Murre ⁴	<i>Uria aalge</i>
	Common Snipe ⁴	<i>Gallinago gallinago</i>
	Common Tern ⁴	<i>Sterna hirundo</i>
	Glaucous Gull ⁴	<i>Larus hyperboreus</i>

APPENDIX B.) FAUNA RECORDED IN THE GREATER TRINIDAD AREA (Fix

capitalization/scientific names and double check updates/list)

	Common Name	Scientific Name
	Glaucous-winged Gull ⁴	<i>Larus glaucescens</i>
	Heerman's Gull ⁴	<i>Larus heermanni</i>
	Herring Gull ⁴	<i>Larus argentatus</i>
	Least Sandpiper ⁴	<i>Calidris minutilla</i>
	Marbled Murrelet ¹⁰	<i>Bachyrampus marmoratus</i>
	Mew Gull ⁴	<i>Larus canus</i>
	Northern Killdeer ⁴	<i>Oxyechus vociferus vociferus</i>
	Parasitic Jaeger ⁴	
	Pigeon Guillemot ⁴	<i>Cepphus columba</i>
	Red Phalarope ⁴	
	Red-necked Phalarope ⁴	<i>Phalaropus lobatus</i>
	Rhinoceros Auklet ⁴	<i>Cerorhinca monocerata</i>
	Ring-billed Gull ⁴	<i>Larus delawarensis</i>
	Ruddy Turnstone ⁴	<i>Arenaria interpres</i>
	Sanderling ⁴	<i>Calidris alba</i>
	Semipalmated Plover ⁴	<i>Charadrius semipalmatus</i>
	Snowy Plover ⁸	<i>Charadrius alexandrinus</i>
	Surfbird ⁴	<i>Aphriza virgata</i>
	Thayer's Gull ⁴	<i>Larus thayeri</i>
	Tufted Puffin ^{8,2}	<i>Fratercula cirrhata</i>
	Wandering Tattler ⁴	<i>Heteroscelus incanus</i>
	Western Gull ⁴	<i>Larus occidentalis</i>
	Western Sandpiper ⁴	<i>Calidris mauri</i>
	Whimbrel ⁴	<i>Numenius phaeopus</i>
	Willet ⁴	<i>Catoptrophorus semipalmatus</i>
Waterfowl	Black Scoter ⁴	<i>Melanitta nigra</i>
	Greater Scaup ⁴	<i>Aythya marila</i>
	Harlequin ⁴	<i>Histrionicus histrionicus</i>
	Lesser Scaup ⁴	<i>Aythya affinis</i>
	Long-tailed Duck ⁴	<i>Clangula hyemalis</i>
	Red-breasted Merganser ⁴	<i>Mergus serrator</i>
	Surf Scoter ⁴	<i>Melanitta perspicillata</i>
	White-winged Scoter ⁴	<i>Melanitta fusca</i>
Woodpeckers	Downy Woodpecker ⁴	<i>Picoides pubescens</i>
	Hairy Woodpecker ⁴	<i>Picoides villosus</i>
	Northern Flicker ⁴	<i>Colaptes auratus</i>
	Piliated Woodpecker ⁴	<i>Dryocopus pileatus</i>
	Red-breasted Sapsucker ⁴	<i>Sphyrapicus ruber</i>
MAMMALS	Big Brown Bat ¹	<i>Eptesicus fuscus</i>
	Black Bear ⁵	<i>Ursus americanus</i>
	Bobcat ¹	<i>Lynx rufus</i>
	Black-tailed Deer ⁵	<i>Odocoileus hemionus</i>
	Coyote	
	Elephant Seal ¹²	<i>Mirounga angustirostris</i>
	Fox ¹	<i>Vulpes sp.</i>
	Gray Whale ⁷	<i>Eschrichtius robustus</i>
	Harbour Seal ⁷	<i>Phoca vitulina</i>
	Mountain Lion ¹	<i>Puma concolor</i>

APPENDIX B.) FAUNA RECORDED IN THE GREATER TRINIDAD AREA (Fix

capitalization/scientific names and double check updates/list)

Common Name	Scientific Name
Opposum ¹	<i>Didelphis virginiana</i>
Raccoon ⁵	<i>Procyon lotor</i>
River Otter ⁷	<i>Lontra canadensis</i>
CA Sea Lion ⁴	<i>Zalophus californianus</i>
Stellar Sea Lion ⁴	<i>Eumetopias jubatus</i>
Striped Skunk ⁵	<i>Mephitis mephitis</i>
Western Spotted Skunk ⁵	<i>Spilogale gracilis</i>
Squirrel ⁵	<i>Sciurus griseus</i>
White-footed Vole²	<i>Arboremus albipes</i>

Numerical references were obtained from the following sources. This list does not represent a complete and accurate flora, but an estimation of the flora that exists in the area based upon completed surveys, publications and databases available.

¹Allen, Don. NR Services Division, RCAA

²California Natural Diversity Database

³Johnston, Verna R., 1994, *California Forests and Woodlands*, UC Press, Berkeley, CA, 12-27.

⁴Patrick's Point State Park Brochures

⁵Save the Redwoods League, <http://www.savetheredwoods.org/education/coastredwood.shtml>.

⁶Sawyer, John O., Professor of Botany, Emeritus, Humboldt State University; co-author *Trees and Shrubs of California (California Natural History Guides)* and *Manual of California Vegetation*

⁷Trinidad Pier Reconstruction Project, Trinidad Pier Intertidal Assessment

⁸United States Fish and Wildlife Threatened & Endangered Species List

⁹http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi/Show?_id=oenothera_wolfii

¹⁰www.fs.fed.us/psw/publications/documents/gtr-152/chap33.pdf

¹¹<http://www.innvista.com/science/ecology/parks/patrick.htm>

¹²<http://www.humboldt.edu/~marinelb/animals.html>

¹³draft Trinidad General Plan Conservation Element