SECTION 3.0

AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This section describes the existing environment of the area that may be affected by the Proposed Action or alternatives as required by Council on Environmental Quality (CEQ) Guidelines (§1502.15). Resources that are described include Land Resources, Water Resources, Air Quality, Biological Resources, Cultural Resources, Socioeconomic Conditions, Resource Use Patterns, Public Services, Noise, Hazardous Materials, and Visual Resources.

3.2 LAND RESOURCES

3.2.1 TOPOGRAPHY

MARTIN RANCH SITE

The Martin Ranch site is relatively level on the western boundary and slopes upward to the east. Elevations range from approximately 10 feet above sea level along the western boundary to 320 feet above sea level on the eastern boundary (**Figure 3-1**). The eastern edge of the site is relatively steep in places with elevations rising from 120 feet to 320 feet over relatively short distances.

ENDERTS BEACH PROPERTY

The Enderts Beach site is located at the edge of the Pacific Ocean at or below 10 feet above sea level. The site is nearly level and punctuated with inundated wetlands and brackish marsh. Fore-dunes mark the land's edge (**Figure 3-1**).

3.2.2 GEOLOGIC SETTING

MARTIN RANCH SITE

Del Norte County can be divided into two topographic areas. The mountainous portion of the County comprises approximately 92% of the total area. The rocks of the western portion of this mountainous terrain are predominately sandstone (graywacke variety) and shale of the Franciscan Complex. The extensive eastern portion of the mountainous belt comprises the Northern Coast Ranges and the Klamath Mountains, which are inseparable topographically. The remaining

Insert Figure 3-1

county area is restricted coastal lowland and dismembered assemblages of mainly marine rocks deposited 90 to 145 million years ago (White Shield, Inc., 2002).

In the project vicinity, marine deposits along the shore of the Pacific Ocean can be equated to the young alluvium of the ocean. This coastal platform remained under water until recent times when it was uplifted. Two formations of importance are distinguished on the top of the platform. The first is known as the Saint George formation and was deposited during the Pliocene. It is about 350 to 400 feet thick and is composed mainly of fine grain sediments that are not conducive to recharge, which is necessary for deep water supply. The second, known as the Battery formation, was deposited on top of the Saint George Formation in the last million years and covers the study area. It is about 35 feet thick and has a high water-yielding capacity (White Shield, Inc., 2002). The Battery formation represents an intermingling of near-shore marine and non-marine conditions such as lenses of stream gravels. The Martin Ranch property contains two geologic formations: the Pleistocene Battery Formation discussed above and the Franciscan Complex mélange. An erosion-resistant sea stack protrudes through the alluvial fan and terrace of the Battery Formation on the property (Busch Geotechnical Consultants, 2004).

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The same geologic setting discussed above, specifically the Battery Formation, also pertains to the Enderts Beach site. In addition, the property at Enderts Beach is subject to the erosional, hydrologic, and depositional effects of the Pacific Ocean.

3.2.3 SOILS

MARTIN RANCH SITE

Soils on the Martin Ranch site were formed in an old marine terrace that slopes westward to the Pacific Ocean. According to *Soils of Coastal Del Norte County* (UC Davis, 1966), the soil types on the site are Timmons clay loam, Hutsinpillar silty clay loam, Rowdy loam, and Rowdy clay loam. These soils are included in **Figure 3-2** and **Table 3-1**. Detailed series descriptions are provided below. The Timmons series consists of well-drained soils developing on medium textured alluvium from sedimentary rock alluvium. Parent material is rich in quartz, and in places there is evidence of blow sand mixing. In Del Norte County, Timmons soils occur on smooth, slightly dissected high terraces with a predominantly flat relief at elevations from 10 to 100 feet. In small, depressed areas, drainage is imperfect to poor, and the organic matter content is high. The Hutsinpillar series includes dark brown, poorly drained, fine textured soils that have a strongly developed profile. Parent material is alluvium from Franciscan formations of graywacke, shale and sandstone composition. These soils occur at elevations between 50 and 150 feet. The texture varies from silty clay loam to clay in the surface. These soils are usually found in nearly level small stream basins that have formed near steep mountains. They are poorly drained and permeability is slow to very slow.

Insert Figure 3-2

TABLE 3-1
SOIL TYPES ON THE MARTIN RANCH SITE

Soil Type	Soil Symbol	Soil Characteristics	Approximate % of site coverage	Storie Index Rating
Hutsinpillar silty clay loam, 0 to 3 percent slopes	Hp2	Poorly drained with slow runoff, and slow to very slow permeability. Vegetation usually a dense stand of bull rush and other water-loving plants. Largely used for permanent pasture. Nearly level small stream basins that have formed near steep mountains.	18%	27
Rowdy loam, 3 to 8 percent slopes	Ry3	Well to moderately well drained. Runoff is slow. Permeability is moderate to moderately slow. Vegetation is annual and perennial grass. Nearly flat and smooth alluvial fans with a gentle westward slope. Used mainly for permanent pasture and flower bulb production.	35%	90
Rowdy clay loam, 0 to 3 percent slopes	Ry6	Same as Rowdy loam (Ry3), but somewhat poorly drained.	10%	61
Timmons loam, 0 to 15 percent slopes	Ti2	Well drained. Permeability is moderate to moderately slow in the middle horizons and moderate to moderately rapid above and below. Topography is smooth, nearly flat, high river terraces. Vegetation includes Redwood and some Douglas fir. Used for timber production. Some areas have been cleared for pasture and support poor stands of annual and perennial grass, and fair subterranean clover.	7%	58
Un-surveyed	NA	NA	30%	NA

NOTE: Based on descriptions of soil types and associated series descriptions.
SOURCE: University of California, Davis 1966; AES, 2005.

Rowdy clay loam (Ry6) typically occurs in small depressions of alluvial fans where water draining the adjacent mountains runs near the surface for appreciable periods during the year. This soil is poorly drained with moderately slow permeability. The soil type is mapped in the western third of the property, immediately north and south of the gravel driveway.

NRCS uses the Storie rating system, based on the agricultural value of soils, for the relative value of farmlands. The combined soils for the site yield a relative value of 85, which is considered a site with soils that have few limitations that restrict the use of crops.

Water erosion affects all uses of soils. Runoff erodes land and undercuts road banks, landfills and riverbanks. Eroded materials fill reservoirs, ponds, and drainage ditches, and add silt to streams and rivers. The erodability of soils must be considered in prudent planning of any proposed land use activities. It is especially important to consider erosion in developments that would remove substantial amounts of protective vegetative cover, disrupt soil structure or integrity, or otherwise mobilize material in the soil column for transport or deposition.

The Natural Resources Conservation Service (NRCS) system uses four hydrologic groups (A, B, C, or D) for estimating the runoff potential of soils. Groupings are based on soil properties that influence runoff, such as water infiltration rate, texture, natural drainage or wetness, and the presence of a restrictive underlying layer of impermeable soil or parent rock material. Martin Ranch soils are classified as B and C, which have a slight to no erodability factor, indicating that water erosion is a minor problem and soils are suitable for road construction, building sites, or another intensive use providing other factors are favorable. At the Martin Ranch site, soil structure in the surface layers is fairly strong. This strong structure and the high amount of organic matter help to stabilize soil particles and decrease susceptibility to erosion (White Shield, Inc., 2002).

ENDERTS BEACH PROPERTY

The same geologic setting discussed above also pertains to the Enderts Beach site. In addition, the *Soils of Coastal Del Norte County* (UC Davis, 1966) maps sand dunes (SD) and swamp (SW) in the vicinity.

3.2.4 SEISMICITY

MARTIN RANCH SITE

There are no active faults or other special geologic features on or near the Martin Ranch site (White Shield, Inc., 2002). Seismic stability problems in the Crescent City/Smith River area are related mainly to the presence of the unstable Franciscan rocks beneath hillsides (City of Crescent City, General Plan Background Report, 2001).

The Martin Ranch site is not located within an Alquist-Priolo Earthquake Fault Zone as classified by the California Geological Survey. The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The main purpose of the Alquist-Priolo Earthquake Fault Zoning Act is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. Special geologic studies are warranted prior to approval of developments within these zones.

A review of the Preliminary Fault Activity Map of California, CDMG Report 92-03 (1992), also shows that no known faults are mapped either within the site boundaries or on nearby land (White Shield, Inc., 2002).

The closest identified faults are the Grogan fault, located offshore approximately 8 miles from the Martin Ranch site, and slightly diagonal to the North Coast coastline. The Bald Mountain-Big Lagoon Fault is located offshore approximately 15 miles from the Martin Ranch site. The Little Salmon fault, located south of Eureka, is approximately 57 miles from the Martin Ranch site. The Cascadia Subduction Zone (CSZ) is located offshore. The CSZ is a 750-mile long zone

extending from northern California to Canada where the Pacific Plate is plunging under the North American Plate. Potential hazards of the offshore faults include surface rupture, ground shaking, liquefaction, lurching, landslides, and tsunami run-up (City of Crescent City, 2001). Tsunamis are the biggest recorded threats to the Crescent City area.

Alluvial materials underlying the floodplain of the Smith River and small tributary valleys are not likely to result in significant liquefaction because of their coarse consistency. The Martin Ranch site is also not mapped by the California Geological Survey under the Seismic Hazards Mapping Act, which addresses non-surface rupture earthquake hazards like liquefaction and landslides. Lurching typically occurs close to the margins of steep banks formed from alluvial materials. The Modified Mercalli Intensity (MMI) scale (**Table 3-2**) is a common measure of earthquake effects due to ground shaking intensity. The MMI values for intensity range from I (earthquake not felt) to XII (damage nearly total), and intensities ranging from IV to X could cause moderate to significant structural damage. The damage level represents the estimated overall level of damage that will occur for various MMI intensity levels. The damage, however, will not be uniform. Some buildings will experience substantially more damage than this overall level, and others will experience substantially less damage. Not all buildings perform identically in an earthquake. The age, material, type, method of construction, size, and shape of a building all affect its performance. Maximum peak ground acceleration intensities at the site are expected to cause MMI (VII) ground shaking. Ground shaking effects of this intensity include moderate structural damage to ordinary buildings, but negligible damage to buildings of good design and construction.

The Richter magnitude scale was developed in 1935 by Charles F. Richter of the California Institute of Technology as a mathematical device to compare the size of earthquakes. The magnitude of an earthquake is determined from the logarithm of the amplitude of waves recorded by seismographs. Adjustments are included for the variation in the distance between the various seismographs and the epicenter of the earthquake. On the Richter scale, magnitude is expressed in whole numbers and decimal fractions. For example, a magnitude 5.3 might be computed for a moderate earthquake, and a strong earthquake might be rated as magnitude 6.3. Because of the logarithmic basis of the scale, each whole number increase in magnitude represents a tenfold increase in measured amplitude. As an estimate of energy, each whole number step in the magnitude scale corresponds to the release of about 31 times more energy than the amount associated with the preceding whole number value.

Earthquakes with magnitude of about 2.0 or less are usually called micro-earthquakes; they are not commonly felt by people and are generally recorded only on local seismographs. Events with magnitudes of about 4.5 or greater are strong enough to be recorded by sensitive seismographs all over the world. Great earthquakes, such as the 1964 Good Friday earthquake in Alaska, have magnitudes of 8.0 or higher. The Richter scale is not used to express damage.

TABLE 3-2
MODIFIED MERCALLI INTENSITY SCALE

Intensity Value	Intensity Description	Average Peak Acceleration
I.	Not felt except by a very few persons under especially favorable circumstances.	< 0.0015 g[a]
II.	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.	< 0.0015 g
III.	Felt quite noticeably indoors, especially on upper floors of buildings, but many persons do not recognize it as an earthquake. Standing motorcars may rock slightly. Vibration similar to a passing of a truck. Duration estimated.	< 0.0015 g
IV.	During the day felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motorcars rocked noticeably.	0.015 g-0.02 g
V.	Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.	0.03 g-0.04 g
VI.	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.	0.06 g-0.07 g
VII.	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motorcars.	0.10 g-0.15 g
VIII.	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, and walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motorcars disturbed.	0.25 g-0.30 g
IX.	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.	0.50 g-0.55 g
X.	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.	> 0.60 g
XI.	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	> 0.60 g
XII.	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.	> 0.60 g

NOTE: a) g is gravity = 980 centimeters per second squared.
SOURCE: Bolt, Bruce A., *Earthquakes*, W. H. Freeman and Company, New York, 1988.

Del Norte County has adopted the Uniform Building Code, which establishes building requirements for all new structures based on predicted earthquake intensities. Damage resulting from earthquakes would most likely be from ground shaking and related ground failure. The effects of ground shaking and ground failure are best mitigated by adequate geotechnical investigations of specific sites and by adequate design for the maximum credible earthquake.

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Throughout its recorded history, no major significant earthquake related damage has been sustained within the region with the exception of the infamous Good Friday earthquake of 1964. This earthquake occurred offshore from Anchorage, Alaska and triggered a tsunami that caused severe damage in Crescent City (White Shield, Inc., 2002). The Enderts Beach site is subject to the effects of both tsunami and storm surge.

3.2.5 MINERAL RESOURCES

MARTIN RANCH SITE

The California Department of Conservation, California Geological Survey (formerly CDMG) classifies the regional significance of mineral resources in accordance with the California Surface Mining and Reclamation Act of 1975 (SMARA). Mineral Resource Zones (MRZ) have been designated throughout the state to indicate the significance of mineral deposits. This classification system must be incorporated into the General Plans of cities and counties supporting mining operations, including dredging and quarrying, and is intended to ensure that mineral resources will be available when development is necessary or economically feasible. The County has an approved SMARA ordinance. County policies pertaining to "extractive resources" also exist. The major mining activity in Del Norte County is sand and gravel extraction. According to the *Del Norte County General Plan Update, Public Hearing Draft EIR* (2000), no large-scale extraction activities take place in the Crescent City Planning Sub-Area. Neither the State Geologist nor the Del Norte County General Plan (1973) have identified Mineral Resource Zones in the area.

ENDERTS BEACH PROPERTY

The Mineral Resources setting is the same as that stated for the Martin Ranch site.

3.3 WATER RESOURCES

3.3.1 SURFACE WATER, DRAINAGE, FLOODING

MARTIN RANCH SITE

The Martin Ranch site is located in the Lower Smith River Hydrologic Unit (USGS hydrologic unit code 18010101). Runoff from the property drains into the Pacific Ocean, approximately ½ mile down slope of the western property boundary.

Watershed

As part of the hydrology study for the proposed project (**Appendix B**), portions of five separate drainage sub-basins within a 476-acre hydrologic area were identified on the property based on discharge points along Humboldt Road and Highway 101 (**Figure 2** of **Appendix B**).

Approximately 94.6 acres of the northern portion of the drainage area drain into a defined drainage course that is shown on USGS topography maps within Sub-Basin 1. This drainage course parallels the north property line and exits the property through a 36-inch diameter culvert under Humboldt Road.

Approximately 121.3 acres along the southerly portion of the drainage area in Sub-Basin 5 drain into a defined drainage coarse prior to being conveyed to the west side of Highway 101 by a 24-inch diameter culvert.

The remaining 260.1 acres drain westerly from the steep sloped area to the wetlands located near the western portion of the property. This area has been divided into three sub-basins with the flows from each sub-basin leaving the property through three different culverts.

Sub-Basin 2, the largest of the three, is comprised of approximately 197.8 acres. Runoff from Sub-Basin 2 leaves the property by way of a 36-inch diameter culvert under Humboldt Road approximately ½ mile north of its intersection with Highway 101.

Runoff from Sub-Basin 3 leaves the property through a 16-inch diameter culvert under Humboldt Road at the access point to the property. Sub-Basin 3 is 21.7 acres in size.

Sub-Basin 4 consists of approximately 40.6 acres and drains the southern portion of the property. Flows from Sub-Basin 4 are conveyed to a 30-inch diameter culvert at the intersection of Humboldt Road and Highway 101.

The annual precipitation and peak rainfall intensity as well as surface runoff volume may be considerable.

Surface Runoff Modeling

Surface runoff from the Martin Ranch site drains to the Pacific Ocean via three different routes. The northern stream emerging from the forest, no longer confined by a channel, fans out in the northern swale and filters through palustrine emergent and palustrine forested wetlands, ending up in Crescent City Marsh after it crosses Humboldt Road. The southern stream at the extreme southern end of the property flows under Highway 101 and discharges into the Pacific Ocean at Enderts Beach. The water from the remaining complex of streams emerges from the forest and fans out forming the central wetland of the site, no longer with defined beds and banks; ultimately, it flows under a 4-foot diameter culvert under Humboldt Road and thence to the triangular marsh south of Sandmine Road. A total of 7 culverts drain water from the Martin Ranch property. Water of the triangular marsh may infiltrate under Sandmine Road into the main body of the Crescent City Marsh and thence through the outlet channel of the marsh to the Pacific Ocean, or infiltrate under Highway 101 to the sea (**Figure 3-3**). **Figure 3-4** provides a surface drainage map of the Crescent City Marsh area. The existing runoff volume from the Martin Ranch property is provided in **Table 3-3**.

TABLE 3-3
EXISTING MARTIN RANCH SITE RUNOFF

Discharges	Existing Condition (cfs)
10-year peak discharge (cfs)	160.3
25-year peak discharge (cfs)	211.7
100-year peak discharge (cfs)	266.5

NOTE: cfs - cubic feet per second
SOURCE: SHN Engineers, 2005.

Floodplain

Executive Order 11988 addresses floodplain management. Executive Order 11988 requires the evaluation of actions taken in a floodplain. Specifically, the order states that agencies shall first determine whether the proposed action will occur in a floodplain. Second, if an agency proposes to allow an action to be located in a floodplain, "the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains." Finally, if the only practicable alternative action requires siting in a floodplain, the agency shall "minimize potential harm to or within the floodplain."

Various areas of the Smith River drainage have the potential to flood, depending on elevation and proximity to streams and floodplains. Most streams and rivers of substantial flow have been controlled by the construction of diversion systems. The Martin Ranch site is located outside of

Insert Figure 3-3

Insert Figure 3-4

the 100-year floodplain. The limits of inundation that result from a calculated 100-year flooding event have been documented by the Federal Emergency Management Agency (FEMA), and the information is provided on Flood Insurance Rate Maps (FIRMs). The FIRM relevant to this project is Del Norte County Community and Panel Number 065025 0100 C revised on July 3, 1986 (**Figure 3-5**).

ENDERTS BEACH PROPERTY

Runoff from the Enderts Beach site drains into the Pacific Ocean through a breach in the fore-dune. The watershed is comparatively smaller than that of the Martin Ranch (the southern stream at Martin Ranch feeds into the Enderts Beach parcel). The site is largely outside of the 100-year floodplain (**Figure 3-5**). The shoreline on the western edge of the boundary is potentially within the 100-year floodplain.

3.3.2 GROUNDWATER

MARTIN RANCH SITE

The Martin Ranch site is located within the Smith River Plain Groundwater Basin (Basin 1-1). This resource is a 70 square mile coastal basin drained by the Smith River. It consists mostly of younger alluvium. This groundwater basin is shown in **Figure 3-6**. Well yields range from a maximum of 500 gallons per minute (gpm) to an average of 50 gpm. Potential exists for limited additional development in the south area and moderate additional development in the north area. Potential problems include low well yield in the south, which has led to importation of water from the Smith River and danger of contamination from septic tank effluent due to the shallow aquifer. High iron content is present in some areas and danger of seawater intrusion exists in the northern part of the basin (California Department of Water Resources, 1975).

Coastal geology significantly affects the availability and quality of groundwater according to a recent study (MWH America, Inc., 2004a). Overlying strata include the St. George Formation consisting of 350 to 400-feet thick fine-grained sediments that are not conducive to recharge, which is necessary for a deep aquifer water supply. Sitting on top of the St. George Formation is the Battery Formation, which is 35 feet thick and consists of lenses of stream gravels conducive to high levels of water-water withdrawal and high recharge capacity (MWH America, Inc., 2004a).

Several shallow groundwater wells exist on the property that were excavated for ranching and dairying purposes, but these yield water of poor quality, being rich in iron sulfates. No recent groundwater data for the Martin Ranch are available. However, the deed to the Martin Ranch property now owned by the Tribe includes water rights to an adjacent property that was once part of the Martin/Bowman Ranch, and has since separated from the Tribe's land. The previous

Insert Figure 3-5

Insert Figure 3-6

landowner developed a sump system and the water was pumped across Humboldt Road to the subject property for irrigation (MWH America, Inc., 2004a).

ENDERTS BEACH PROPERTY

Although no well logs are available, the Enderts Beach site has abundant groundwater (White Shield, Inc., 2002). Its proximity to the Pacific Ocean renders the water table more susceptible to seawater intrusion than the Martin Ranch site.

3.3.3 WATER QUALITY

MARTIN RANCH SITE

Surface Water Quality

Water quality on and near the Martin Ranch property is currently subject to the jurisdiction of the State Water Resources Control Board (SWRCB) and the North Coast Regional Water Quality Control Board (RWQCB). California's core water quality law, the Porter-Cologne Water Quality Control Act, is administered by the SWRCB and the nine RWQCBs. The SWRCB and the nine RWQCBs rely in part on CEQA to document environmental impacts to water quality due to development. Once the property is transferred to federal trust status, the provisions of CEQA are not directly applicable. The SWRCB and the nine RWQCBs also rely upon the Clean Water Act as the basis for addressing pollutant discharge. The transfer of the Martin Ranch property into trust status will result in federal government agencies and the Tribe assuming primary jurisdiction for enforcement of water quality, pollutant discharge, and stormwater runoff in accordance with the Clean Water Act and applicable Tribal law.

Section 303(d) of the Federal Water Pollution Control Act (Clean Water Act), as amended, requires states to periodically prepare a list of all surface waters in the state for which beneficial uses of the water – such as drinking, recreation, aquatic habitat, and industrial use – are impaired by pollutants. These are estuaries, lakes, streams, and groundwater basins that fall short of state surface water quality standards, and are not expected to improve within the next two years. States are also required to establish a priority ranking of these impaired waters for purposes of developing plans that include Total Maximum Daily Loads (TMDLs). These plans describe how an impaired water body will meet water quality standards through the use of TMDLs. A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards.

On November 16, 2001 the North Coast Regional Water Quality Control Board (Regional Water Board) submitted a list of recommendations for updates to the 1998-303(d) list. These recommendations were included in the SWRCB 303(d) list, which was submitted to the USEPA in 2002 and accepted in 2003. As part of their recommendations, the Regional Water Board placed Elk Creek on a "Watch List." Elk Creek drains Elk Valley, which is located two miles

north of the site. As stated in the Regional Water Board's report, "The recommendation to put a waterbody/pollutant combination on a Watch List was made if: (1) there is conflicting information regarding water quality impairment, or (2) the available information is insufficient to make a water quality impairment determination. Placement of a waterbody/pollutant combination on a Watch List means that additional information is needed to determine water quality impairment."

The Regional Water Board has found slightly elevated levels of sediments in Elk Creek and concluded that, "further information regarding instream sediment conditions is necessary to verify the (sediment) transport capacity for Elk Creek ... Staff recommends conducting additional instream sediment assessments to determine whether spawning and rearing habitat of cold water fisheries and other beneficial uses are impaired due to sediments" (Regional Water Quality Control Board, 2001). There are no impaired water bodies within the Martin Ranch site.

Groundwater Quality

To protect drinking water supplies, the USEPA defines National Primary Drinking Water Regulations (primary standards). These are legally enforceable standards that apply to public water systems. These standards are established to protect human health by limiting the levels of contaminants in drinking water. The USEPA also defines National Secondary Drinking Water Regulations (secondary standards). These secondary standards are non-enforceable. They regulate contaminants that cause cosmetic effects or aesthetic effects. The USEPA recommends these standards for water systems but does not require systems to comply. Both primary and secondary drinking water standards are defined as either Maximum Contaminant Levels (MCL), which are the highest levels allowed in drinking water, or Maximum Contaminant Level Goals (MCLG), which are the levels of contaminants below which there is no known or expected risk to health.

In 1998, the SWRCB, in compliance with Clean Water Act Section 303(d), prepared a list of impaired water bodies in the State of California (SWRCB, 1999). The list includes a description of contaminants or "stressors" affecting the water body. In the case of surface water bodies, the list also includes a priority schedule for the development of TMDLs.

The Smith River Plain groundwater basin is the only water body in the Smith River Hydrologic Unit that was listed as impaired in the State Water Resources Control Board's 1998-303(d) list. Pesticides, petroleum/gasoline, and priority organics currently impair the Smith River Plain groundwater basin. The sources for this impairment are listed as agriculture, spills, and leaking underground storage tanks.

ENDERTS BEACH PROPERTY

The water quality setting for Enderts Beach is the same as for Martin Ranch discussed above. In addition, the proximity of the site to the Pacific Ocean renders underlying groundwater lenses and surface water more susceptible to increases in salinity from the influx of seawater during winter storm surges and intrusion of seawater into aquifers during drought conditions. Detailed hydrologic studies have not been conducted at Enderts Beach.

3.4 AIR QUALITY

3.4.1 REGIONAL METEOROLOGY

Both sites (Martin Ranch and Enderts Beach) lie within the North Coast Air Basin (NCAB), which includes Del Norte, Humboldt, Trinity, Mendocino, and northern Sonoma Counties. The physiographic features that give shape to the NCAB are the Coast Range to the east, the Pacific Ocean to the west, and the San Francisco Bay Area to the south. The North Coast Unified Air Quality Management District (NCUAQMD) regulates air emissions within a large portion of the NCAB. The NCUAQMD includes all of Del Norte County. Much of the district consists of sparsely populated mountainous forestland. About 80,000 people (one half of the district's population) reside within the Humboldt Bay region.

Local air quality is generally good because of the district's proximity to the Pacific Ocean, which brings forth southeastern winds. The population concentration areas and Highway 101 are the primary air pollution sources. Due to the rural character of the project area, limited population, and lack of industrial development, the ambient air quality is expected to remain above established federal standards.

As required by the Federal Clean Air Act (CAA), the USEPA established National Ambient Air Quality Standards (NAAQS) for six "criteria" air pollutants, including ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), suspended particulate matter (PM_{10}), and lead (Pb).

Similarly, the State of California enacted the California Clean Air Act (CCAA), establishing State Ambient Air Quality Standards (SAAQS) for the six criteria air pollutants described above as well as vinyl chloride, sulfates, visibility-reducing particles, and hydrogen sulfide (H_2S). These state standards are equal to or more stringent than their federal counterparts. State and national ambient air quality standards for these pollutants are listed in **Table 3-4**. These ambient standards represent the levels of air quality necessary, with an adequate margin of safety, to protect human health and welfare.

TABLE 3-4
STATE AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	SAAQS[a]	NAAQS[b]
Ozone	1 hour	0.09 ppm[c]	NA
	8 hour	0.07 ppm	0.08 ppm
Carbon Monoxide	1 hour	20 ppm	35 ppm
	8 hour	9.0 ppm	9 ppm
Nitrogen Dioxide	1 hour	0.25 ppm	NA
	Annual	NA	0.053 ppm
Sulfur Dioxide	1 hour	0.25 ppm	NA
	3 hour	NA	0.5 ppm
	24 hour	0.04 ppm	0.14 ppm
	Annual	NA	0.03 ppm
Respirable Particulate Matter (PM_{10})	24 hour	50 $\mu g/m^3$[c]	150 $\mu g/m^3$
	Annual	20 $\mu g/m^3$	50 $\mu g/m^3$
Fine Particulate Matter ($PM_{2.5}$)	24 hour	NA	65 $\mu g/m^3$
	Annual	12 $\mu g/m^3$	15 $\mu g/m^3$
Sulfates	24 hour	25 $\mu g/m^3$	NA
Lead	30 day	1.5 $\mu g/m^3$	NA
	Calendar Quarter	NA	1.5 $\mu g/m^3$
Vinyl Chloride	24 hour	0.010 ppm	NA

NOTES:
a SAAQS (i.e., California standards) for ozone, carbon monoxide, sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, and respirable particulate matter are values that are not to be exceeded. All other California standards shown are values not to be equaled or exceeded.
b NAAQS (i.e., national standards), other than ozone and those based on annual averages, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.
c ppm = parts per million by volume; µg/m3 = micrograms per cubic meter; NA = Not Applicable.
SOURCE: California Air Resources Board 2004.

In June 1997, the USEPA adopted new O_3 and PM_{10} federal standards. The USEPA changed the 1-hour O_3 standard of 0.12 parts per million (ppm) to an 8-hour standard of 0.08 ppm. The USEPA also adopted an additional standard for fine particulate matter less than 2.5 microns in diameter.

Air basins (or portions thereof) are classified as either "attainment" or "non-attainment" with respect to national and state criteria air pollutant standards. Based on whether or not the NAAQS and SAAQS have been achieved, local air districts are required to prepare air quality plans containing emission reduction strategies for those areas designated as "non-attainment."

3.4.2 POLLUTANTS OF CONCERN

Pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal and California ambient air quality standards have been established for criteria pollutants whereas

no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods of time. Most standards have been set to protect public health. For some of the criteria pollutants, USEPA and states have identified air quality standards expressed in more than one averaging time in order to address the typical exposures found in the environment. A summary of state and federal ambient air quality standards for criteria pollutants is shown in **Table 3-4**.

CARBON MONOXIDE

State and federal CO standards have been set for both 1-hour and 8-hour averaging times. The state 1-hour standard is 20 parts per million (ppm) by volume, while the federal 1-hour standard is 35 ppm. Both state and federal standards are 9 ppm for the 8-hour averaging period. CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream.

OZONE

Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone precursors, which include reactive organic gases (ROG) and oxides of nitrogen (NO_x), react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. State and federal standards for ozone have traditionally been set for a 1-hour averaging time. The state 1-hour ozone standard is 0.09 ppm, not to be exceeded. The federal 1-hour standard was officially revoked in June 2005. In July 1997, the USEPA added an 8-hour standard of 0.08 ppm. The state added an 8-hour standard of 0.07 ppm on May 17, 2006.

PARTICULATE MATTER

Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled. Few particles larger than 10 microns in diameter reach the lungs. Consequently, both the federal and state air quality standards for particulate matter apply only to particulate matter 10 microns or less in diameter (generally designated as PM_{10}).

The state PM_{10} standards are 50 micrograms per cubic meter ($\mu g/m^3$) as a 24-hour average and 20 $\mu g/m^3$ as an annual geometric mean. The federal PM_{10} standards are 150 $\mu g/m^3$ as a 24-hour average and 50 $\mu g/m^3$ as an annual arithmetic mean.

In July 1997, the USEPA promulgated a new federal standard for particulate matter less than 2.5 microns in diameter (generally designated as $PM_{2.5}$). $PM_{2.5}$ is sometimes referred to as "fine particulate matter." The new $PM_{2.5}$ standard is set at a concentration of 15 $\mu g/m^3$ annually and 65

$\mu g/m^3$ daily. As with the new ozone standard, the new $PM_{2.5}$ standards have been the subject of protracted litigation and have not yet been implemented. Federal standards for PM_{10} remain in effect.

SUMMARY

Both sites lie within the NCUAQMD. The area is designated "attainment/unclassified" with respect to NAAQS for O_3 and is "unclassified" with respect to CO, PM_{10}, and $PM_{2.5}$. It is designated "attainment" with respect to SAAQS for O_3 and sulfates and "unclassified" with respect to CO, $PM_{2.5}$ and H_2S. It is classified as "non-attainment" with respect to SAAQS for PM_{10} (California Air Resources Board [CARB], 2004). Classifications for state 8-hour ozone have not been established.

3.4.3 EXISTING AIR QUALITY

The following is a description of 2002 air quality conditions in the vicinity of both the Martin Ranch and Enderts Beach sites. The 2002 CARB data for Del Norte County was the most current data available from the CARB website (CARB, 2004).

EMISSION SOURCES

California is a diverse state with many sources of air pollution. To estimate the sources and quantities of pollution, CARB, in cooperation with local air districts and industry, maintains an inventory of California emission sources. Sources are subdivided into four major emission categories: stationary sources, area-wide sources, mobile sources, and natural sources. Stationary source emissions are based on estimates made by facility operators and local air districts. Emissions from specific facilities can be identified by name and location. CARB and local air district staffs estimate area-wide emissions. Emissions from area-wide sources may be either from small individual sources, such as residential fireplaces, or from widely distributed sources that cannot be tied to a single location, such as consumer products and dust from unpaved roads. CARB staff estimates mobile source emissions with assistance from districts and other government agencies. Mobile sources include on-road cars, trucks, and buses and other sources such as boats, off-road recreational vehicles, aircraft, and trains. CARB staff and the air districts also estimate natural sources. These sources include biogenic hydrocarbons, geogenic hydrocarbons, natural wind-blown dust, and wildfires. **Table 3-5** provides the Del Norte County emissions inventory for 2004.

Del Norte County has a much more significant influence from natural sources than most of California. While combustion-related emissions (CO, NO_X, and particulates) are primarily from wildfire activity, ROG emissions are predominantly attributed to biogenic emissions. Biogenic ROG are emitted into the atmosphere from terrestrial ecosystems such as vegetation.

TABLE 3-5
DEL NORTE COUNTY EMISSIONS INVENTORY FOR 2004

Emission Category	ROG	CO	NO_X	PM_{10}	$PM_{2.5}$
Fuel Combustion	0	0	0	0	0
Waste Disposal	0.1	0	0	0	0
Cleaning and Surface Coatings	0.2	0	0	0	0
Petroleum Production and Marketing	0.1	0	0	0	0
Industrial Processes	0.1	0.2	0	0.2	0.1
Solvent Evaporation	0.6	0	0	0	0
Miscellaneous Processes	2.9	79.9	0.1	10.3	5.9
On-Road Motor Vehicles	1.2	11.5	1.6	0	0
Other Mobile Sources	0.4	2.8	1.2	0.1	0.1
Natural Sources	27.0	39.0	1.3	4.0	3.4
TOTAL	32.8	133.4	4.4	14.6	9.5

NOTES: All values in tons per day. The sum of values may not equal total shown due to rounding.
SOURCE: CARB 2005.

Of the anthropogenic, or artificial emissions, the CO in Del Norte County is dominated by the "miscellaneous processes" category which is almost exclusively from forest management activities. Forest management activities also contribute significantly to countywide PM_{10} and $PM_{2.5}$ emissions but to a lesser degree. Other significant contributors to particulate matter emissions are unpaved road dust and residential fuel combustion. The primary contributors to NO_X emissions are on-road motor vehicles such as passenger vehicles and heavy-duty diesel trucks.

AIR MONITORING

CARB and local air districts operate a regional monitoring network that measures the ambient concentrations of the six criteria pollutants. The major pollutants of concern in the project area are ozone, CO, and particulate matter. Existing and probable future levels of air quality in the project area can generally be inferred from ambient air quality measurements conducted by NCUAQMD and CARB at their monitoring stations. NCUAQMD and CARB collect ambient air quality data through a network of air monitoring stations in and surrounding Del Norte County. This data is summarized annually and is published in the CARB California Air Quality Data Summaries. **Table 3-6** provides a summary listing the highest measurements observed in the area for Particulate Matter pollutants for the years 1999-2001. **Table 3-6** also includes the corresponding NAAQS or SAAQS. These stations were selected because of their relative proximity to the Martin Ranch site. There are no data available for other regulated pollutants. Because many of the stations do not monitor all pollutants, a distinct set of monitoring stations

was chosen for each pollutant that would best represent conditions at the Martin Ranch site, or in the case of ozone, the regional conditions.

TABLE 3-6
AIR QUALITY DATA SUMMARY FOR THE MARTIN RANCH AND ENDERTS BEACH REGION[A]

Pollutant	Standard[b]	1999	2000	2001
Ozone (O_3) hourly:				
Highest Measurement, ppm[c]	0.09	NA	NA	NA
Days > State Standard		0	0	0
Ozone (O_3): 8-hour				
Highest Measurement, ppm	0.08	NA	NA	NA
Days > Federal Standard		0	0	0
Particulate Matter (PM_{10}) 24 hr.:				
Highest Measurement, $\mu g/m^3$ [c]	50	39.4	43.9	45.9
Days > State or Federal Standard		0	0	0

NOTES: Data for Hydrogen Sulfide, Ozone, Carbon Monoxide, and Sulfates is unavailable.
a. Data is from the 880 Northcrest Drive, Crescent City monitoring station.
b. State or federal standard, not to be exceeded.
c. ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

SOURCE: CARB, California Air Quality Data Summaries, 2002.

REGULATORY CONTEXT

The Federal Clean Air Act of 1970 as amended (42 USC 7401 *et seq*.) was enacted for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare and productivity.

In 1971, the USEPA developed primary and secondary National Ambient Air Quality Standards (NAAQS). Six pollutants of primary concern were designated: CO, ozone, suspended particulate matter, sulfur dioxide, nitrogen dioxide (NO_2) and lead. The primary NAAQS must protect the public health with an adequate margin of safety and the secondary standards must protect the public welfare from known or anticipated adverse effects of air pollutants (42 USC § 7409) (to aesthetics, crops, architecture, etc.). The primary standards were established, with a margin of safety, considering long-term exposures for the most sensitive groups in the general population. The USEPA allows states the option to develop different standards so long as they are at least as stringent as the federal standards. California elected this option and adopted more stringent standards. **Table 3-4** shows the federal and state standards.

If an air basin is not in federal attainment (i.e. does not meet federal standards) for a particular pollutant, the basin is classified as a non-attainment area. Non-attainment areas must take steps towards attainment within a specific time frame. The Federal Clean Air Act provides for classifications of non-attainment areas, depending upon the severity of the violations of the NAAQS, as well as time frames within which states are to take action to address the non-attainment status.

The North Coast Air Basin (NCAB) is in state attainment for ozone, carbon monoxide (CO), and sulfates. Del Norte County is unclassified for CO and sulfates. The NCAB is in non-attainment for PM_{10}. In addition, the NCAB is in federal attainment for ozone.

The California Clean Air Act requires that air pollution control districts implement regulations to reduce emissions from mobile sources through the adoption and enforcement of transportation control measures. All areas must meet California Ambient Air Quality Standards (CAAQS) by the earliest practical date, and at a minimum air quality plans as a whole must meet an annual emission reduction target of five percent or apply all feasible control measures. The State Implementation Plan (SIP) is the document that sets forth the state's strategies for achieving federal air quality standards.

FEDERAL CLEAN AIR ACT AND INDIAN TRIBES

The Federal Clean Air Act authorizes USEPA to issue regulations specifying the provisions of the Act for which Indian Tribes may be treated in the same manner as states. For those provisions specified, a Tribe may develop and implement one or more of its own air quality programs under the Act. USEPA issued its final rule on this issue in 1998. The rule provides that tribes will be treated in the same manner as states for virtually all Federal Clean Air Act programs. The rule grants tribes with USEPA-approved Clean Air Act programs authority over all air resources within the exterior boundaries of a reservation (including non-Indian-owned fee lands). No such program exists for the Elk Valley Rancheria, and thus, USEPA retains permitting authority for sources of air pollution located on the Martin Ranch site as well as jurisdiction for all Clean Air Act matters relative to the reservation.

ODORS

Both the Martin Ranch site and Enderts Beach site are located within a mixed rural residential and agricultural area. Existing potential odor generators in the immediate area include 1) grazing activities; 2) open burning and wood burning stoves; 3) nearby wetlands; and 4) decaying algae from the Pacific Ocean, often exposed on the beach or rocks during low tide.

TOXIC AIR CONTAMINANTS

In the region, ambient air quality is affected by a number of toxic air contaminant (TAC) sources. Major TAC sources in the region include Pelican Bay State Prison and Hambro Forest Products, both in Crescent City. Individual emitters of TACs are required by the Air Toxics Hot Spots Assessment Act (Assembly Bill [AB] 2588) to prepare Toxic Emission Inventory Plans and Reports, allowing the NCUAQMD to identify and inventory toxic emissions.

SENSITIVE RECEPTORS

The project vicinity is rural residential in character. The nearest sensitive receptors are houses located along Roy Avenue, approximately 350 feet north of the northern property boundary, and a

single-family residence on a large parcel approximately 200 feet south of the southern boundary of the Martin Ranch site. There is one residence in the immediate vicinity of the Enderts Beach parcel.

3.5 BIOLOGICAL RESOURCES

This section describes the biological resources that currently exist at the 203.5-acre Martin Ranch and 22-acre Enderts Beach sites. Vegetative communities were identified during literature reviews and field surveys and mapped using aerial photography. Wildlife habitats were characterized on the basis of both existing reports and field observations. AES staff conducted a reconnaissance-level biological survey and review of the California Natural Diversity Data Base (CNDDB) to identify special-status species or other sensitive biological resources potentially present on the two sites. In addition, focused studies were conducted at Martin Ranch. The field assessment was conducted by AES biologists Heather Hinds and Mark Wuestehube on November 26 and 27, 2002; by Tim Armstrong and John Miller on February 9, 10, 11, and 12, 2004 (formal wetland delineation); by Tim Armstrong and John Miller on April 28, 2004; by John Miller on June 30 and July 1, 2004 (protocol-level rare plant surveys); and by Tim Armstrong and John Miller on July 21 and 22, 2004.

3.5.1 REGIONAL SETTING

The Martin Ranch and Enderts Beach properties are located on a coastal plain between mountains of the northern California Coast Ranges and the Pacific Ocean. The properties occur at elevations from approximately sea level at Enderts Beach in the southwest to approximately 300 feet above mean sea level in the east on the Martin Ranch site. Characteristic vegetation communities occurring within the regional vicinity include Sitka spruce, coast redwood, and red alder communities. In addition, sand dunes support dunegrass, sand/verbena/beach bursage, and beach pine communities, and areas of saltwater marsh support pickleweed and saltgrass communities. Aquatic habitats in the regional vicinity include intermittent drainages, perennial streams and rivers, freshwater and saltwater marshes, seasonal and perennial wetlands, and natural and man-made lakes and ponds. The climate of the area is temperate and humid with abundant summer fog. The mean annual temperature is 53 degrees Fahrenheit, and average precipitation is approximately 60 to 80 inches per year (U.S. Department of Agriculture, 1997). Site-specific settings are presented in the following subsections:

3.5.2 HABITAT TYPES

MARTIN RANCH SITE

Habitat types occurring within the Martin Ranch property include Sitka spruce forest, red alder/mixed deciduous woodland, wetland prairie, annual grassland/pasture, and intermittent drainage (**Figure 3-7**, **Table 3-7**). These habitats are located within a semi-rural setting and are

Insert Figure 3-7

TABLE 3-7
SUMMARY OF HABITAT TYPES ON THE MARTIN RANCH SITE

Habitat Type	Acres	Percent Area
Annual Grassland/Pasture	113.5	56%
Sitka Spruce Forest	38	19%
Wetland Prairie	25.5	12%
Red Alder/Mixed Deciduous Woodland	19	9%
Riparian Wetland	5.5	3%
Intermittent Drainages	2.0	1%
Total	**203.5**	**100**

SOURCE: AES, 2005.

currently subject to disturbances related to cattle grazing and nearby roads and residences. Habitat types are discussed below and in more detail in **Appendix A.**

Sitka Spruce Forest

Sitka spruce forest habitat exists primarily along the eastern portion of the property bordering areas of grazed annual grassland/pasture. This habitat type is interspersed with red alder/mixed deciduous woodland in wet areas and along portions of drainage corridors. The forest is shaded by an overstory of mature Sitka spruce (*Picea sitchensis*) and grand fir (*Abies grandis*). Many of these trees exceed 36 inches in diameter and form a relatively closed canopy. Beneath these trees, understory vegetation consists primarily of western sword fern (*Polystichum munitum*), bracken fern (*Pteridium aquilinum*), California blackberry (*Rubus ursinus*), western azalea (*Rhododendron occidentale*), salmonberry (*Rubus spectabilis*), red elderberry (*Sambucus racemosa*), Nootka rose (*Rosa nutkana*), hedge nettle (*Stachys bullata*), buttercup (*Ranunculus repens*), violet (*Viola* sp.), and velvet grass (*Holcus lanatus*). Two small areas of fragmented Sitka spruce forest habitat also occur within the property. Photographs of the Sitka spruce forest habitat are shown in **Figure 3-8**.

Red Alder/Mixed Deciduous Woodland

Red alder/mixed deciduous woodland habitat is found primarily in drainage corridors and other wet areas within the Martin Ranch property. Along the upper reaches of the drainages, vegetation consists primarily of tall red alder trees, scattered Sitka spruce, red elderberry, salmonberry, California blackberry, thimbleberry (*Rubus parviflorus*), western azalea, western sword fern and horsetail (*Equisetum* sp.). Woody understory vegetation such as salmonberry and California blackberry forms dense thickets along portions of the drainage corridors in areas with fewer trees that are more open-canopied. Photographs of red alder/mixed deciduous woodland habitat are shown in **Appendix A**.

Insert Figure 3-8

Wetland Prairie

This habitat type occurs in wet, low-lying areas of the annual grassland/pasture. Water frequently accumulates in, or flows through, these areas for most of the year. Most of the wetlands are found within the western portion of the property and are fed by runoff from the intermittent drainages and groundwater seeps. This habitat is dominated primarily by vegetation such as common rush (*Juncus effusus*) and slough sedge; however, vegetation composition varies depending on factors such as soil moisture content and duration of saturation or inundation. Rush and sedge species dominate in the wettest areas, while slightly drier wetland areas or edges also commonly contain species such as buttercup, plantain (*Plantago lanceolata*), trefoil (*Lotus* sp.), velvet grass, and fiddle dock. In addition, small clumps of woody vegetation and individual red alder and Sitka willow trees occur within wetland prairie habitat. These areas are not well defined or large enough to be excluded from wetland prairie habitat. Photographs of the wetland prairie habitat are shown in **Figure 3-9**.

Several agricultural drainage ditches are located within the northern portion of the property. These features drain water from portions of annual grassland/pasture and wetland prairie. The drainage ditches are in areas that were most likely once wetland prairie, but have been modified to support agricultural practices on the property. The drainage ditches were constructed to route water, allowing the conversion of wetland prairie to upland pasture. Vegetation within the drainage ditches currently consists primarily of California blackberry. Other common species include iris, buttercup, and slough sedge (**Appendix A**).

Riparian Wetland

Just west of the Sitka spruce forest habitat, red alder/mixed deciduous woodland is reduced to thin or fragmented corridors along the drainages as they pass through annual grassland/pasture. Patches of this woodland habitat also occur within the flatter western portion of the property in moist soils bordering wetland prairie. Woody vegetation within these areas includes red alder, Sitka willow (*Salix sitchensis*), California blackberry, Nootka rose, bitter cherry (*Prunus emarginata*), red elderberry and western azalea. Other common species include yellow skunk cabbage (*Lysichiton americanum*), slough sedge (*Carex obnupta*), iris, hedge nettle, fiddle dock (*Rumex pulcher*), velvet grass, and woodland strawberry (*Fragaria chiloensis*). The wettest portions of this habitat are considered riparian wetland due to the amount of water that regularly flows or seeps through these areas, saturating the soils for most of the year (**Appendix A**).

Annual Grassland/Pasture

A large portion of the property consists of annual grassland/pasture habitat, which is found on the gently rolling, westward sloping portions of the property below the Sitka spruce forest edge. Most of this habitat type has been subject to disturbances including grazing and mowing. Portions of the property are grazed by cattle and/or subject to seasonal mowing, while other areas

Insert Figure 3-9

have not been disturbed for at least several seasons. Within areas subject to grazing and mowing, the weedy annual species velvet grass is dominant. Other common species include bentgrass (*Agrostis* sp.), hawkweed (*Hieracium* sp.), Bermuda grass (*Cynodon dactylon*), plantain, common mallow (*Malva neglecta*), buttercup, and white-stemmed filaree (*Erodium moschatum*). In areas where there is light to infrequent grazing or mowing, species including Nootka rose, California blackberry, bracken fern, yarrow (*Achillea millefolium*), ox-eye daisy (*Leucanthemum vulgare*), and iris are common to locally dominant. In addition, individual red alder, Sitka spruce and Sitka willow trees occasionally occur within annual grassland/pasture habitat. Within the Martin Ranch property, this habitat is transected by several intermittent drainages and is bordered by areas of wetland prairie, riparian wetland, Sitka spruce forest, and red alder/mixed deciduous woodland habitat. Photographs of the annual grassland/pasture habitat are shown in **Figure 3-10**.

Intermittent Drainages

Intermittent drainages occurring within the Martin Ranch property are characterized by small to medium-drainage channels that range from approximately two to ten feet wide. The streambeds consist of eroded loamy clay substrate that remains moist for most of the year, but typically supports no in-channel vegetation. All of the drainages appear to carry water throughout all but the driest months of the year. The upper portions of the drainage channels drain surface water runoff and groundwater seepage from the steep, forested slopes in the eastern portion of the property. Most of the drainages lose bed and bank definition in the western portion of the property, where they fan out into wetland prairie habitat and red alder riparian woodland. Several drainages have been culverted beneath dirt or gravel access roads within the central part of the property. The upper portions of a few drainages are also culverted beneath an old overgrown road that cuts through Sitka spruce forest and red-alder/mixed deciduous woodland habitats (**Appendix A)**.

ENDERTS BEACH PROPERTY

The 22-acre Enderts Beach parcel contains five habitats: 1) dunegrass and sand/verbena/beach bursage, 2) northern coastal scrub, 3) riparian wetland, 4) brackish marsh, and 5) annual grassland/pasture. An abandoned residence occurs on the site but the remainder of the property is undeveloped.

Dunegrass and Sand Verbena/Beach Bursage

A narrow strip of fore-dunes and coastal strand makes up the seaward edge of the Enderts Beach site. Common species within this strip include dunegrass, also known as European beach grass (*Ammophila arenaria*), sand verbena (*Abronia latifolia*), and beach-bursage (*Ambrosia chamissonis*). This is a dynamic, fragile, changeable habitat, often windblown and subject to continuous salt spray and winter storm surge. Shorebirds often frequent this plant community and some species lay their eggs in the dune habitat.

Insert Figure 3-10

Northern Coastal Scrub

Small thickets of northern coastal scrub exist at Enderts Beach, but these are landward of the dunegrass/beach bursage plant community just described. Dominant shrubs include salal (*Gaultheria shallon*), black huckleberry (*Vaccinium ovatum*), coast silk tassel (*Garrya elliptica*), coyote brush (*Baccharis pilularis*), and California blackberry. Some Sitka spruce was also present, and this plant community merged with the riparian wetland discussed below. At Enderts Beach the northern coastal scrub community often occurs on higher ground than the following habitats.

Riparian Wetland

The riparian wetland at Enderts Beach is essentially the same as that found on the Martin Ranch site, discussed above. Pockets of Sitka spruce were also found in the areas regarded as riparian wetland.

Brackish Marsh

A large, central marsh occurs on the Enderts Beach property. The marsh contains emergent vegetation such as slough sedge. A low point in the fore-dune allows for salt water to overtop the dune and spill into the marsh during storm surge, and for freshwater to flow seaward when water levels in the marsh rise above the crest of the fore-dune. There is apparently no tidal prism in this marsh, and no permanent outlet to the sea exists.

Annual Grassland/Pasture

The relatively small areas of annual grassland and pasture at Enderts Beach occur north of the abandoned residence. The description of this habitat is similar to the description for the Martin Ranch discussed above.

3.5.3 WILDLIFE

A variety of wildlife may use the habitats that occur on both properties. Species observed or identified (via call, scat, burrows, etc.) during the site survey include: Roosevelt elk (*Cervus elaphus roosevelti*), black-tailed deer (*Odocoileus hemionus columbianus*), brush rabbit (*Sylvilagus bachmani*), Botta's pocket gopher (*Thomomys bottae*), western terrestrial garter snake (*Thamnophis elegans*), red-tailed hawk (*Buteo jamaicensis*), Steller's jay (*Cyanocitta stelleri*), common raven (*Corvus corax*), chestnut-backed chickadee (*Parus rufescens*), common snipe (*Gallinago gallinago*), pileated woodpecker (*Dryocopus pileatus*), northern harrier (*Circus cyaneus*), and northern red-legged frogs (*Rana aurora aurora*).

Other common animal species that may be found on the Martin Ranch and Enderts Beach properties and surrounding vicinity include, but are not limited to: raccoon (*Procyon lotor*),

opossum (*Didelphis virginiana*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Felis rufus*), black bear (*Ursus americanus*), Pacific chorus frog (*Pseudacris regilla*), golden-crowned kinglet (*Regulus satrapa*), ruby-crowned kinglet (*Regulus calendula*), wrentit (*Chamaea fasciata*), winter wren (*Troglodytes troglodytes*), and hermit thrush (*Catharus guttatus*).

Roosevelt elk are one of three species of elk in California (Hall, 1981). They inhabit open coniferous and deciduous forest stands, as well as non-forested wetlands, riparian areas and vegetated slide areas. Elk have a common migration pattern, spending the winter months at lower elevations grazing in open grasslands and spruce forests and the summer months at higher elevations, above the timberline, feeding on young and high-nutrient plants.
Evidence of Roosevelt elk grazing on the property was noted on the 2004 field assessment. Elk scat was found on the northeast portion of the property at the edge of the Sitka spruce forest. Elk in the north coastal herds migrate from the higher elevations to graze on the grasses and leafy vegetation during the winter months, coinciding with the time of the field assessment.

3.5.4 FEDERALLY LISTED SPECIES

For the purposes of this EIS, federally listed species include those plant and animal species that are listed as endangered or threatened under the Federal Endangered Species Act (FESA), formally proposed for listing, or listed by local U.S. Fish and Wildlife Service (USFWS) offices as a Federal Species of Concern. A target species list of federally listed species that may potentially be affected by the Proposed Action and alternatives was compiled based upon a review of pertinent literature, aerial photographs, site topographic maps, consultation with the USFWS (**Appendix A**) and other local experts, a query of the CNDDB for reported occurrences of federally listed species within the project vicinity, and the results of biological field surveys (**Appendix A**). In addition, updated threatened and endangered species information for the "Sister Rocks" 7.5' USGS quadrangle was reviewed December 19, 2005, ensuring that no additional species would be significantly impacted from the proposed action.

For the purposes of this EIS, "federally-listed special-status species" is defined to include those species that are:

- Listed as endangered or threatened under FESA (or formally proposed, or candidates, for listing);
- Designated as species of concern or species of local concern by USFWS.

Habitat requirements for each federally listed species were assessed and compared to the habitats occurring within the Martin Ranch property and adjacent areas (**Appendix A**). Based upon the review of regionally occurring federally listed species and their habitat requirements, and the preliminary results of the field assessment, the Martin Ranch and Enderts Beach properties and/or

surrounding vicinity represent potential habitat for one federally listed plant species and three animal species of federal concern. The name, regulatory status, habitat requirements, and period of identification for potentially occurring federally listed species are identified below in **Table 3-8**.

FEDERALLY LISTED PLANT SPECIES

Western Lily

Imper & Sawyer conducted an extensive botanical survey of the neighboring Crescent City Marsh Wildlife Area in 1992 with focus on special-status species including western lily (*Lilium occidentale*). While this work did not cover the Martin Ranch property it did include property across Humboldt Road to the west of the site. Western lilies were found at the interface between alder/willow scrub and coastal prairie at the eastern edge of the California Department of Fish and Game (CDFG) lands just across the road from the Martin Ranch site (Imper & Sawyer, 1992). The Martin Ranch contains thickets of alder/willow scrub in several locations, which are more weedy and trampled by cattle than the western lily habitats across Humboldt Road in the CDFG wildlife reserve.

According to the 1992 study, the Crescent City Marsh Wildlife Area's lily populations exhibit mature population structure and a high rate of viable fruit production, presumably due to a large pollinator population in the area. Biotic factors such as grazing may have played an important role in maintaining suitable habitat (Imper & Sawyer, 1992) but ecological variables such as fire, geologic processes, and periodic tsunamis may also affect habitats, plant communities, and the indigenous lily populations. The demographics of western lilies are the subject of ongoing research related to the basic biology of the species and its pollinator(s), and the genetic make-up and origins of the species. Ancestral genes may have originated in both forerunners of modern day Columbia lily (*Lilium columbianum*), which occurs in the immediate area, and from the coast lily (*Lilium maritimum*), also known from the region (Imper, 2004, personal communication).

A local reference population for western lily was studied with the assistance of the USFWS botanist in June of 2004. At that time, the plants were in full flower, and ranges of vegetative forms (seedlings, young sprouts, and older but sterile stems) were also visible. The flowers were red in color with yellow streaks on the petal surfaces (**Appendix A**). The reference population was growing in a fen vegetated with Nootka reed grass (*Calamagrostis nutkaensis*), western Labrador tea (*Ledum glandulosum*), and buckbean (*Menyanthes trifoliata*). At that time, the reference population was surveyed, the fen was saturated with water to the surface. Few if any non-native weeds co-occurred with the western lily plants. The USFWS botanist stated that the species was extremely sensitive to fluctuations in marsh water levels but that the explanation for the steady decline in the numbers of plants in the reference population was as yet unknown.

TABLE 3-8
TARGET FEDERAL SPECIAL-STATUS SPECIES LIST: ELK VALLEY MARTIN RANCH SITE

SCIENTIFIC NAME COMMON NAME	FEDERAL STATUS	DISTRIBUTION	HABITAT REQUIREMENTS	PERIOD OF IDENTIFICATION
PLANTS				
Lilium occidentale Western lily	FE	Del Norte and Humboldt counties, California; and Curry County, Oregon. Elevation 2 to 185 m.	Bogs and fens, coastal bluff scrub, coastal prairie, coastal scrub, freshwater marshes and swamps, and openings within North Coast coniferous forest habitat.	June - July
ANIMALS				
Insects				
Polites mardon Mardon skipper	FC	Puget Sound area and southern Cascades, Washington; Siskiyou Mountains of Oregon and Del Norte County, California.	Serpentine outcrops, generally grassy openings in subalpine coniferous forests. In Del Norte County, California, the larval food plant is *Festuca rubra.*	May - June
Speyeria zerene hippolyta Oregon silverspot butterfly	FT	Washington and Oregon (only a single healthy colony is known).	Salt-spray meadows with its host, *Viola adunca*.	May - June
Fish				
Eucyclogobius newberryi Tidewater goby	FE	Historically widespread in brackish coastal lagoons and coastal creeks in California from the mouth of the Smith River, Del Norte County, south to Agua Hedionda Lagoon, San Diego County.	Small coastal lagoons, lower reaches of streams and uppermost portions of large bays. In lower sections of coastal streams, occurs in fresh to brackish water, and occurs in vegetated pools of slow (but not stagnant) areas of streams.	Consult Agency
Oncorhynchus kisutch Southern Oregon/northern California Coho salmon	FT	Anadromous fish populations distributed between Cape Blanco, Oregon and Punta Gorda, California.	Juveniles prefer pools at least 1 m deep with overhead cover; most numerous among woody debris in pools and runs. Spawns in coastal streams, generally in forested areas, in loose coarse gravel at head of riffle.	Consult Agency
Sebastes paucispinis Bocaccio	FC	Coastal waters of the Pacific Ocean, from Alaska to Baja California.	Lives among rocky reefs and soft ocean bottoms from Kodiak Island, Alaska, to Punta Blanca, Baja California.	Consult Agency
Amphibians				
Ascaphus truei Western tailed frog	FSC	Cascades and the Pacific Coast from southern British Columbia south to northwestern California.	Permanent streams of low temperature in coastal forests.	April - October
Plethodon elongatus Del Norte salamander	FSC	Vicinity of Port Orford, southwestern Oregon, south to central Humboldt County, northwestern California.	Largely restricted to the redwood and north coast forests of northwestern California and southwestern Oregon. Most abundant in old-growth forest with intermediate levels of moisture.	Consult Agency

SCIENTIFIC NAME COMMON NAME	FEDERAL STATUS	DISTRIBUTION	HABITAT REQUIREMENTS	PERIOD OF IDENTIFICATION
Rana aurora aurora Northern red-legged frog	FSC	Coastal British Columbia (including Vancouver Island) south to northern California.	Found in humid forests, woodlands, grasslands, and streamsides in northwestern California. Breeds in permanent or nearly permanent pools containing emergent vegetation.	Consult Agency
Rana boylii Foothill yellow-legged frog	FSC	Western Oregon and California.	Requires partly shaded, shallow streams and riffles with a rocky substrate for breeding.	Consult Agency
Rhyacotriton variegatus Southern torrent (seep) salamander	FSC	Western Oregon and California.	Cold, permanent seeps and small streams with a rocky substrate within coastal forests, usually old growth.	Consult Agency
Reptiles				
Caretta caretta Loggerhead turtle	FT	A wide-ranging turtle of the open ocean, which enters bays, estuaries, salt marshes, and river mouths to forage and breed.	Live in a variety of environments, such as in brackish waters of coastal lagoons and river mouths. During the winter, they may remain dormant, buried in the mud at the bottom of sounds, bays, and estuaries.	Consult Agency
Birds				
Brachyramphus marmoratus Marbled murrelet	FT	Western North America.	Pelagic: requires mature redwood and Douglas fir forests for nesting, and nearby coastal waters for feeding.	Consult Agency
Buteo regalis Ferruginous hawk	FSC	Occurs in northern California as a wintering bird. Can be seen in treeless, open areas during winter months.	Open grasslands, sagebrush flats, desert scrub, low foothills and surrounding valleys, and fringes of pinyon-juniper habitats.	October - March
Charadrius alexandrinus nivosus Western snowy plover	FT	Western United States and Mexico.	Sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.	March-August
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FC	Currently only likely found along upper Sacramento River, Kern River, Santa Ana, Amargosa and lower Colorado rivers.	Nest in riparian forest along larger river systems.	October-March
Elanus leucurus White-tailed kite	FSC	Year round resident (breeding and wintering) throughout California. Commonly seen foraging above agricultural fields, open grasslands and along highways in Central Valley.	Nests in shrubs and trees adjacent to grasslands.	All year
Haliaeetus leucocephalus Bald eagle	FT	In California, winters along stream, lake reservoir margins, and inland wetlands. May breed in northern California along Oregon border.	Ocean shorelines, lake margins, and river courses. Requires tall trees for nesting several miles from foraging habitat.	October-March
Strix occidentalis caurina Northern spotted owl	FT	Western British Columbia, Washington, Oregon, and northern California.	Old growth forest or mixed stands of old growth and mature trees. Occasionally in younger forests with patches of big trees.	Consult Agency

SCIENTIFIC NAME COMMON NAME	FEDERAL STATUS	DISTRIBUTION	HABITAT REQUIREMENTS	PERIOD OF IDENTIFICATION
Mammals				
Arborimus pomo California red tree vole	FSC	Western Oregon and northwestern California.	Found in Douglas fir, coast redwood, and montane hardwood-conifer forests. Feeds almost exclusively on Douglas fir leaves.	Consult Agency
Gulo gulo luteus California wolverine	FSC	Montane coniferous forests of the Klamath Region and Sierra Nevada, including Del Norte and Humboldt counties, California.	A variety of high elevation habitats. Uses caves, logs, and burrows for cover and denning sites. This species can travel long distances.	Consult Agency
Martes pennanti pacifica Pacific fisher	FSC	Western British Columbia, Washington, Oregon, and northern California.	Occupies mature coniferous forests and deciduous-riparian habitats that have high percentage of canopy closure. This species has a large home range.	Consult Agency

FEDERAL STATUS CODES: (U.S. Fish and Wildlife Service or National Marine Fisheries Service)
FC = Federal Candidate for Listing
FE = Listed as Endangered by the Federal Government
FLC = Federal species of local concern
FSC = Federal species of concern
FT = Listed as Threatened by the Federal Government

SOURCE: USFWS, 2002; CNDDB, 2004; Imper & Sawyer, 1992; and AES, 2005.

Upon completion of surveying the Crescent City Marsh reference population, the Martin Ranch property was then surveyed with the assistance of the USFWS botanist in June of 2004. Western lily habitat was found in the northwest corner of the property. The habitat was considered suitable for western lily due to the presence of several species commonly associated with western lily, including *Ledum glandulosum* and *Hypericum formosum*. It was recommended by the USFWS botanist that a detailed inspection of the area was warranted.

Detailed inspections of the western lily habitat were conducted in June and July of 2004. The wetland in the northwestern corner of the property was dry when it was surveyed on July 1, 2004. Walking through the dense thicket of red alder and willow was made difficult by the tall height of the slough sedge plants and tangles of salmonberry and Himalaya blackberry. The only seedlings on the dry floor of this portion of the site were seedlings of skunk cabbage. Based upon the desiccated soil of this portion of the property and the dense overgrowth of slough sedge, willow, alder, salmonberry, and Himalaya blackberry, it was concluded by the AES botanist that western lily was absent, even in a diminutive juvenile stage.

The only other portion of the property that had habitat even remotely similar to the reference population was located in the large central wetland of the property. This wetland was colonized with non-native weed species and was severely trampled by cattle. However the moisture regime of this portion of the site (saturation to the surface) was equivalent to the fens of the reference site.

Additional surveys at Martin Ranch during the 2004 June-July bloom period did not detect the species. However, a related, but common lily species was found at Martin Ranch. This was a small population of Columbia lily that was found growing near the summit of a steep, rounded knoll not far from the slough sedge wetlands on the ranch. Only two plants were seen, and the plants were in full flower with brilliantly colored orange blooms, the petal surface covered with brown spots (**Appendix A**).

FEDERALLY LISTED ANIMAL SPECIES

Butterflies and Skippers

Two lepidopterans, the Mardon skipper and Oregon silverspot butterfly, occur in the region but unsuitable habitat exists on the Martin Ranch property. No additional surveys for these species are recommended.

Tidewater Goby

The tidewater goby (*Eucyclogobius newberryi*) is a small translucent fish species. There is no suitable habitat for the species on either alternative site. Tidewater gobies are benthic feeders of

small coastal lagoons, lower reaches of streams and uppermost portions of large bays. The species is most abundant in the upper ends of lagoons created by small coastal streams in fresh to brackish water. In coastal marsh such as the Crescent City Marsh, tidewater gobies may occur in vegetated pools of sluggish areas of streams (NatureServe, 2004). However, water quality sampling conducted on January 10, 2006 by David Imper and Greg Goldsmith of the USFWS at various locations within the Crescent City Marsh showed no obvious marine influence or presence of brackish conditions (Elk Valley Rancheria, 2006). The inland edge of the Crescent City Marsh is less than 1,500 feet downstream from the proposed development area. There are no historic records or documented occurrences of tidewater goby within the Crescent City Marsh (USFWS, 2005).

Coho Salmon and Bocaccio Fish

federally listed Coho salmon and Bocaccio fish occur off the Del Norte Coast. Salmon migrate up the major streams and rivers of the region, but none of these streams occur on the Martin Ranch property. The streams at the Martin Ranch do not flow year-round, are clogged with vegetation, and flow into swamp or marsh habitat that is unsuitable for migratory fish. No additional surveys for these species are recommended.

Salamanders and Frogs

Two federally listed salamanders and three frogs occur in the region, including the Del Norte salamander, southern torrent salamander, western tailed frog, northern red-legged frog, and foothill yellow-legged frog (the northern red-legged frog is discussed below). However, the lack of perennial streams on the site and the disturbed nature of the property preclude the Del Norte salamander, southern torrent salamander, western tailed frog, and foothill yellow-legged frog from occurring in the area. No additional surveys for these species are recommended.

Northern Red-Legged Frogs

A population of northern red-legged frogs (*Rana aurora aurora*) was observed during the February 2004 field assessment (**Appendix A**). The frogs were observed in a wetland area adjacent to the fence that borders the northeastern-most field in the early afternoon hours. This species is listed as a state and federal Species of Concern, due to loss of habitat, including fracturing of adjacent wetlands.

Northern red-legged frogs ensure biodiversity and preservation of species by maintaining meta-populations. A meta-population is defined as breeding sites located in surrounding areas where a species inhabits. This is a natural adaptation to ensure the survival of the species in case of a local catastrophic event; i.e. flood or drought.

Reptiles

Several ocean-going turtles are known to inhabit the Del Norte Coast, including the northern loggerhead sea turtle. This turtle often inhabits coastal saltmarsh and streams where it may forage. None of these habitats are known from the Martin Ranch property but suitable habitat for the northern loggerhead sea turtle does exist at the Enderts Beach site.

Marbled Murrelet

The marbled murrelet (*Brachyramphus marmoratus*) is present in several locations along the north coast. However, suitable habitat does not exist on the Martin Ranch site. Neither the Martin Ranch property nor the Enderts Beach property support populations of marbled murrelet. No additional surveys are recommended.

Northern Spotted Owl

The northern spotted owl (*Strix occidentalis caurina*) is present in some wooded areas of Del Norte County. However, there is no suitable habitat for the species either on the two alternative sites or in the immediate area, including nearby Rellim Ridge to the east (Stimpson, 1997).

Previous research concludes the spotted owl shows an affinity for late seral stage forests comprised of Douglas fir (*Pseudotsuga menziesii*), with as much as 83% of nest sites found in Douglas fir trees (LaHaye and Gutierrez, 1999; Solis, 1993). Numerous other researchers have concluded that the spotted owl also inhabits mixed-coniferous forests of white fir (*Abies concolor*), pine (*Pinus* sp.), and cedar species (*Calocedrus decurrens*). Other research reported that the northern spotted owl feeds primarily on the dusky-footed woodrat (*Neotoma fuscipes*) and the northern flying squirrel (*Glaucomys sabrinus*) (Ward *et al*., 1998; Zabel, 1995). Neither prey has been found at Martin Ranch or at Enderts Beach.

Given the habitat and forage for the northern spotted owl, the two alternative sites do not provide habitat for the spotted owl.

Mammal Species of Concern

Three mammal Species of Concern are shown in **Table 3-8.** The California red tree vole feeds almost exclusively on Douglas fir leaves, of which were not observed on site. The wolverine, found in a variety of high elevation habitats, does not have suitable habitat within the project area. The Pacific fisher occupies mature coniferous forests and deciduous riparian habitats with a high percentage of canopy closure. Potential habitat within the Martin Ranch property suitable for use by the fisher is avoided by project design.

Other Federally Listed Birds

Raptor species (birds of prey) and migratory birds, other than those listed as special-status species may potentially nest in trees and other vegetation located on or within the immediate vicinity of the Martin Ranch property. Active nests of migratory bird species are protected under the Federal Migratory Bird Treaty Act. Northern harrier was observed on the property in 2002 and a pair of ferruginous hawks was observed using Sitka spruce snags on the property in 2004. No white-tailed kites were observed on the site. Suitable habitat for the western snowy plover and western yellow-billed cuckoo do not exist onsite. No bald eagles have been observed on the property and no nests are known to occur on the property. Additionally, bald eagles are not one of the regionally occurring special-status species identified within a 5-mile radius of the site. The known locations of special-status plant and animal species within a five-mile radius of the site are shown in **Appendix A**.

State and CNPS Special-Status Species

Other special-status species such as those plants and wildlife that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by state or other agencies, the California Native Plant Society (CNPS), or other conservation organizations, were evaluated in terms of their overall contribution to the biodiversity of the habitat. **Table 3-9** contains those species identified as special status without federal status and shown in the Biological Resources Assessment (**Appendix A**).

The species recognized at the state or local level generally receive no specific protection on Indian land taken into trust by the federal government and are not necessarily afforded protection by FESA. The Coastal Act and CEQA typically require that the impacts of a project on state or federal-listed plants, or plants included on the CNPS List 1 and 2 be disclosed. State-listed species are also subject to consultation requirements and take prohibitions under the California Endangered Species Act (CESA) and the Native Plant Protection Act (NPPA), which currently apply to this property. Once the property is transferred to federal trust status, the provisions of CEQA and CESA are not directly applicable. However, the Coastal Zone Management Act requires a consistency determination be made for federal actions, which is discussed in more detail in **Section 3.5.5**. A consistency determination requires the action be consistent to the maximum extent practicable with the Coastal Act.

TABLE 3-9
TARGET STATE SPECIAL-STATUS SPECIES LIST: ELK VALLEY MARTIN RANCH SITE

SCIENTIFIC NAME COMMON NAME	STATE/CNPS STATUS	DISTRIBUTION	HABITAT REQUIREMENTS	PERIOD OF IDENTIFICATION
PLANTS				
Carex buxbaumii Buxbaum's sedge	List 4	The species is reported from eight California counties, primarily in coastal and Sierra Nevada foothill regions.	Bogs and fens, meadows and seeps, marshes and swamps.	March - August
Carex leptalea Flaccid sedge	List 2	Distributed in five coastal region counties north of San Francisco bay.	Bogs and fens, meadows and seeps, marshes and swamps.	May - July
Carex lyngbyei Lyngbye's sedge	List 2	Found in four coastal counties from Humboldt to Monterey.	Brackish or freshwater marshes and swamps.	May - August
Carex praticola Meadow sedge	List 2	Five counties in California have reported occurrences of the species. Also found in Idaho, Oregon and Washington.	Wet meadows and seeps.	May - July
Carex viridula var. *viridula* Green sedge	List 2	Reported from Del Norte, Humboldt, and Mendocino counties up to 5,250 feet in elevation.	Bogs and fens, freshwater marshes and swamps, North Coast Coniferous Forests in wet soils.	June - September
Hierochloe odorata Vanilla grass	List 2	Populations reported from 4,900-6,000 feet in elevation within Shasta and Siskiyou counties in California.	Meadows and seeps (mesic).	April - July
Lathyrus palustris Marsh pea	List 2	Distributed in Del Norte and Humboldt counties in California, also in Oregon and Washington.	Bogs and fens, coastal prairie, coastal scrub, lower montane coniferous forest, marshes and swamps, North Coast Coniferous Forests in wet soils.	March - August
Lycopus uniflorus Northern bugleweed	List 4	Primarily found in Northern California in seven counties along the Coast and Sierra Nevada Mountain Ranges.	Lower montane coniferous forest, meadows and seeps/mesic.	July - September
Oenothera wolfii Wolf's evening primrose	List 1B	Primarily found in Del Norte, Humboldt, and Trinity counties. Also reported from San Luis Obispo county.	Coastal bluff scrub, coastal dunes, coastal prairie, northern coniferous forests; often on sandy substrates.	May - October
Platanthera stricta Slender bog orchid	List 4	Northern California distributions are in Humboldt, Modoc, Siskiyou, and Trinity counties. One occurrence found in Tulare county.	Lower montane coniferous forest, meadows and sppes/mesic.	May - August
Sanguisorba officinalis Great burnet	List 2	Del Norte, Humboldt, Mendocino counties, Oregon and Washington distribution.	Bogs and fens, broadleaved upland forest, meadows and seeps, marshes and swamps, North Coast Coniferous Forests, riparian scrub, often in serpentine soils.	July - October
Sidalcea malachroides Maple-leaved checkerbloom	List 1B	Five coastal California counties support populations of the species, from Del Norte to Santa Cruz county.	Broadleaved upland forest, coastal prairie, coastal scrub, North Coast Coniferous Forests, often in undisturbed areas.	April - August

SCIENTIFIC NAME COMMON NAME	STATE/CNPS STATUS	DISTRIBUTION	HABITAT REQUIREMENTS	PERIOD OF IDENTIFICATION
Sidalcea malvaeflora ssp. *patula* Siskiyou checkerbloom	List 1B	Known in California from fewer than ten occurrences in Del Norte and Humboldt counties.	Coastal bluff scrub, coastal prairie, North Coast Coniferous Forests.	May - June
Sidalcea oregana ssp. *exima* Coast checkerbloom	List 1B	Approximately ten locations in Del Norte and Humboldt counties.	Lower montane coniferous forests, meadows and seeps, North Coast Coniferous Forests.	June - August
Trientalis arctica Arctic starflower	List 2	Only three occurrences found in Del Norte County.	Coastal bogs and fens, meadows and seeps.	June - July
Viola langsdorfii Langsdorf's violet	List 2	Two occurrences within California: Lake Earl and Pt. St. George in Del Norte county.	Coastal bogs and fens.	May - July
Viola palustris Marsh violet	List 2	Four occurrences in three coastal counties in California: Del Norte, Humboldt, and Mendocino. Found elsewhere in Oregon and Washington.	Coastal scrub in wet soils, and coastal bogs and fens.	March - August
ANIMALS				
Birds				
Accipiter cooperii Cooper's hawk	CSC	Breeding resident throughout most of the wooded portion of California.	Nests in densely canopied trees from foothill oak woodlands up to ponderosa pine forests. Nesting usually occurs in a deciduous tree near open water or riparian vegetation.	March - December
Circus cyaneus Northern harrier	CSC	Permanent residents of the northeastern plateau and coastal areas; less common resident of the Central Valley. Occurs from annual grassland up to lodgepole pine and alpine meadow habitats, as high as 3,000 meters.	Meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands. Nests on ground, usually at marsh edges. Mostly nests in emergent wetland or along rivers or lakes, but may nest in grasslands, in grain fields, or on sagebrush flats several miles from water.	February – September'
Elanus leucurus White-tailed kite	CFP	Permanent resident of coastal and valley lowlands.	Nests in shrubs and trees adjacent to grasslands.	February - September

STATUS CODES: California Department of Fish and Game (CDFG) and
CSC = California Species of Concern
CFP = California Fully Protected

California Native Plant Society (CNPS)
List B = Plants rare, threatened, or endangered in California and elsewhere.
List 2 = Plants rare, threatened, or endangered in California, but more common elsewhere.
List 4 = Plants of limited distribution – A watch list.

SOURCE: CNDDB, 2004; Imper & Sawyer, 1992; AES, 2005.

3.5.5 WATERS OF THE U.S.

Waters of the United States (waters of the U.S.) are regulated by the U.S. Army Corps of Engineers (USACE). The term "waters of the U.S." is defined as:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands; or
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand-flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use or degradation of which could affect interstate or foreign commerce including any such waters.

"Wetlands" are defined as:

- Waters of the U.S. that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands that meet these criteria during only a portion of the growing season are classified as seasonal wetlands.

Upon transfer of the Martin Ranch Property into trust status, the primary agency having federal regulatory oversight of wetlands resources would become the USACE under the provisions of the Clean Water Act. Given the stringent standards of the USACE, and since the federal NEPA process relies heavily on environmental standards of federal agencies, the USACE's definition of wetlands is the appropriate standard for impacts to be used in the EIS impact analysis. Other agencies, including the CDFG, sometimes use different criteria for determining the boundaries of wetlands. These standards were considered but not formally used to determine impacts to wetlands, for the reasons stated above.

The CDFG and California Coastal Commission utilize a definition endorsed by the USFWS, i.e., those agencies generally require presence of only one of the three wetland parameters used by USACE to define wetlands (wetland hydrology, hydrophytic vegetation, or hydric soils). The USACE definition requires the presence of all three of these parameters.

Wetlands located within the Coastal Zone are defined in the California Coastal Act and subject to regulation pursuant to the California Coastal Act and Federal Coastal Zone Management Act (CZMA), as appropriate. The Martin Ranch property was assessed for single-parameter wetlands

in April 2006. Single parameter wetlands recognized by the Coastal Commission, CDFG, and the USFWS are shown in **Figure 3-11**.

Once the property is transferred into federal trust status, all federal activities and federally licensed, permitted or assisted activities, wherever they may occur (i.e., landward or seaward of the Coastal Zone boundary) are governed by the CZMA. Since 1972, the CZMA has required that certain federal agency activities, and certain private activities done under the authority of a federal license or permit, that affect the coastal zone, be consistent with the state's coastal management program (16 USC § 1456(c)). A federal agency carrying out an activity that affects the coastal zone must provide a consistency determination to the relevant state agency before final approval of the federal activity (16 USC § 1456(c)(1)(C)). Any applicant for a required federal license or permit to conduct an activity, within or outside of the coastal zone, that affects any land or water use or natural resource of the coastal zone is required to furnish a certificate that its proposed activity is consistent with the state's coastal management program to the maximum extent practicable (16 USC § 1456(c)(3)(A)). Title 15 CFR part 930 *et seq.,* enacted pursuant to the CZMA, "describes the obligations of all agencies, individuals and other parties who are required to comply with the federal consistency provisions of the Coastal Zone Management Act." However, actions carried out by the Tribe where no federal nexus exists do not require a consistency determination. In that case, only the USACE definition of wetlands is applicable in accordance with federal law, e.g., the Clean Water Act.

MARTIN RANCH STREAMS AND WETLANDS

Analytical Environmental Services conducted a delineation of waters of the U.S. occurring within the 203.5± acre Martin Ranch study area. The study area was systematically walked by AES biologists Heather Hinds and Mark Wuestehube on November 26 and 27, 2002; and by Tim Armstrong and John Miller on February 9, 10, 11, and 12, 2004. All areas were viewed to the degree necessary to determine the presence or absence of jurisdictional waters of the U.S. USACE and AES performed a joint site visit in February 2005 and AES submitted a revised delineation map on February 9, 2005 to account for increased acreage of jurisdictional wetlands and other waters of the U.S. These waters of the U.S. occupy a total of 33.01 acres, as determined by the USACE in a letter dated April 11, 2005 (**Appendix K**). Based on a comparison of the National Wetland Inventory Map from the USFWS and the finally delineated wetlands on site, additional wetlands were delineated.

Five streams convey runoff from Rellim Ridge onto the property: the northern stream, central complex of streams, south-central stream, southern stream, and southeastern stream. Four of these streams furnish surface water to the wetlands of the site. At the terminus of each channel, water spreads out over the ground surface and infiltrates each wetland (**Figure 3-11**). A brief description of each stream, stream branch, and associated wetland or seep appears below.

Insert Figure 3-11

Northern Stream (Palustrine), Wetland Prairie (Palustrine), and Forested Wetland (Palustrine)

At the edge of the northern property boundary the northern stream emerges from the forest and alluvial fan to create a wetland prairie with an area of approximately 1.99 acres. The lower wetland area is connected to the wetland prairie above but the connecting channel is just north of the property line. The lower wetland area is an alder and willow-dominated forest with an understory of Douglas spiraea and skunk cabbage. Water leaves the property from the forested wetland through the culvert under Humboldt Road (**Figure 3-11**).

Central Ditch and Seep Complex (Palustrine Emergent)

Midway between the main road on the Martin Ranch and the northern stream is a drainage ditch fed by seeps. The ditch conveys water to the west and joins a lateral ditch. The combined flow of both ditches diverts water to Humboldt Road and thence to the marsh beyond. The lateral ditch also supplies the main wetland to the south through a 24-inch diameter culvert under the Martin Ranch main road (**Figure 3-11**).

Central Complex of Streams (Palustrine)

The central complex of streams is comprised of a north branch, northeastern branch, eastern branch, and main stem that convey runoff from Rellim Ridge to the east. As the central stream leaves the Sitka spruce forest it merges with two small alluvial seeps. It then reforms to become a definable creek where it passes under the main ranch road (via a 24-inch diameter culvert) to supply surface water to the main wetland (**Figure 3-11**).

South Central Stream (Palustrine)

The south central stream exits the forest, leaves its channel, and spreads out over the alluvial fan and into a swale to join the main wetland (**Figure 3-11**).

Main Wetland (Palustrine Emergent)

The main wetland is fed by the central complex of streams, south central stream, seeps, and artesian springs. The main wetland consists of both grass- and rush-dominated wetland prairie (palustrine emergent) and alder and willow-dominated scrub-shrub wetland types. Water from the main wetland seeps into the drainage ditch running parallel to Humboldt Road. This wetland drains through a 36-inch diameter culvert under Humboldt Road to supply water to the California State Game Refuge (**Figure 3-11**).

Southern Stream and Wet Prairie (Palustrine)

A fourth stream emerges from the western flanks of Rellim Ridge and fans out into a broad swale to form a tongue of wet prairie. Water from this wetland seeps into the ditch at the junction of Highway 101 and Humboldt Road (**Figure 3-11**).

Southeast Stream (Palustrine)

The southernmost creek on the Martin Ranch property, the southeast stream, is located in the southeastern portion of the property adjacent to private property and Highway 101. A 24-inch diameter culvert bisects Highway 101 that conveys water under the roadway and thence to the Enderts Beach area where it eventually drains into the Pacific Ocean (**Figure 3-11**).

All water resources eventually drain off of the property into a roadside ditch that borders the western property boundary. The water is then directed through culverts under Humboldt Road, Enderts Beach Road, and Highway 101, and ultimately discharges to the Pacific Ocean, which is less than one-half mile west of the site.

A waters of the U.S. delineation map is presented as **Figure 3-11**. An acreage summary of the intermittent drainages by channel reach is presented in **Table 3-10** below.

TABLE 3-10
WATERS OF THE U.S. SUMMARY FOR MARTIN RANCH

Feature	Acreage
Jurisdictional Wetlands	32.21±
Other Waters of the U.S.	0.80±
TOTAL	**33.01±**

SOURCE: AES, 2005.

ENDERTS BEACH WETLANDS

The Enderts Beach 22-acre site contains about 16.8 acres of wetlands and dunes and 5.2 acres of upland pasture. Wetlands include two intermittent streams, 5.4 acres of palustrine emergent wetland, 2.0 acres of palustrine scrub-shrub wetland, 8.3 acres of palustrine-forested wetland, and 1.1 acres of sand dunes and beach. The undisturbed wetlands of the 22-acre Enderts Beach parcel are of high quality and function to intercept and cleanse runoff from Rellim Ridge to the east, and runoff from Highway 101 prior to percolation into the Pacific Ocean.

3.6 CULTURAL RESOURCES

3.6.1 NATIONAL REGISTER OF HISTORIC PLACES

Section 106 of the National Historic Preservation Act (NHPA) provides criteria for evaluating the eligibility of properties for the National Register of Historic Places.

CRITERIA FOR EVALUATION – 36 CFR SECTION 60.4

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of significant persons in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That has yielded or may be likely to yield information important in history or prehistory.

State Historic Preservation Office Consultation

Under Section 106, federal agencies are required to consult with State Historic Preservation Offices (SHPOs) in determining the significance of and potential effects to historic resources. During preparation of the EIS, the BIA initiated consultation with California Department of Parks and Recreation Office of Historic Preservation (SHPO) regarding the Martin Ranch site. The State Historic Preservation Officer concurred with the BIA determination that the Proposed Project would not adversely affect historic properties (**Appendix W**).

3.6.2 CULTURAL SETTING

REGIONAL PREHISTORY

Previous archaeological research in the Point St. George-Crescent City-Elk Valley area supports the ethnographic model for the coastal strip and broad coastal shelf where Elk Valley is situated. There are a number of prehistoric village sites in the general area. The first systematic archaeological investigations along the north coast of California were reported in L.L. Loud's 1918 reconnaissance survey of Humboldt Bay and the lower reaches of the Mad and Eel Rivers. Loud recorded 172 sites, one of which was the site of the Wiyot Village of Tolowot, located on Gunther Island in Humboldt Bay. Artifacts discovered at this site include bone and antler harpoon points, woodworking tools such as adzes, wedges, and mauls, *Dentalium* shells, ceremonial obsidian blades, and groundstone zoomorphs. Because this site is located on Gunther Island, other sites in the area that have similar attributes are referred to as the Gunther Pattern.

A number of other North Coast sites have provided more information about the Gunther Pattern. These include a site at Patrick's Point, the historic Yurok Village of Tsurai on Trinidad Bay, and the historic Yurok village of Tsahpek at Stone Lagoon.

In Del Norte County, a Gunther Pattern site has been identified at Point St. George north of Crescent City. This site was the principal Tolowa village of Taigna'n. Excavations by archaeologist R.A. Gould revealed three areas of cultural activity: a habitation area, a cemetery, and a place where stone tools were chipped and where fish, shellfish, and sea mammals were processed. Tolowa consultants involved with the project described a seasonal round of subsistence activities involving smelt fishing in the early fall, acorn gathering and salmon fishing in the late fall, and a return to Taigna'n with food stores for the winter.

REGIONAL ETHNOGRAPHY

Before sustained Euro-American settlement in the 1850s, the Tolowa Indians, speakers of an Athabascan language, resided in the Crescent City area. The Tolowa territory extends along the coast from the Winchuck River in southern Oregon southward to Wilson Creek, encompassing the entire Smith River watershed including the Martin Ranch site. Of the four main habitats in Tolowa country identified by Gould (1978), the coastal strip was the primary focus of settlement and land use activities, as it provided a year-round supply of shellfish, sea mammals, fishes, sea birds and edible seaweed. Tolowa villages were situated along the coast, the nearest being those mapped along and near Crescent City Bay, more than two miles west of the Elk Valley Rancheria. The Tolowa occupied the principal coastal zone villages except during the late summer and fall when families fished for smelt at sandy beaches, then moved inland to the Douglas fir/oak flat and riverine habitats to collect acorns and to catch salmon and eel, among other resources.

Most hunting and gathering activities occurred within a ten to fifteen-mile radius of the principal villages. The parkland setting of the valley, along with the place name, suggest that Elk Valley once supported herds of elk, a resource which likely attracted Tolowa hunters. Ethnohistoric Tolowa use of the Elk Valley area included the gathering of huckleberries, wild strawberries, a leafy plant found along drainages known as swamp tea, and an abundance of other food, basket and medicinal plants.

REGIONAL HISTORIC CONTEXT

The historical period for the area begins with the explorations of the Spanish explorer Bruno de Heceta in 1775 (Shannon Technologies, 2006). No settlement directly associated with de Heceta's explorations is recorded. In 1828, Jedediah Smith passed through the area while attempting to find a route to the coast from Central California. Some settlement occurred shortly before and after Smith's passage.

After the discovery of gold in the area in 1850, local visitation and settlement increased significantly. An early land exploration party headed by James Brookings of Oregon named Elk Valley in late 1852. Soon after, Crescent City was established by thousands of miners, with pack trains passing through Elk Valley en route to Oregon. Two of these early historic pack routes, the Cold Spring Mountain Trail and Kelsey Trail, passed easterly through Elk Valley in the vicinity of the Rancheria and over nearby Humboldt Hill. In 1858, a plank road from Crescent City was completed, passing northeasterly through Elk Valley towards Sailors Creek, Oregon. The Gasquet Road was completed in 1887, connecting with the Crescent City Plank road in Elk Valley.

With the influx of settlers here and elsewhere in Northern California, the resulting demand for wood led to the large-scale logging of the nearby redwood forests. The mining industry was in decline and the lumber industry was becoming the largest industry in Del Norte County. The first sawmill in Del Norte County was established in 1853. Beginning in the 1870's, logging in this area underwent a revolutionary change with the advent of steam-powered machinery. By the 1880's, Crescent City was a well-established town with a population of 1,000 people. The arrival of the transcontinental railroad brought a large influx of population to the sparsely settled west and began to create a much larger market for building materials such as redwood.

By the 1880's, the dairy industry had become a significant part of the Del Norte area. Del Norte County dairy farmers were producing more than half a million pounds of butter annually. Early dairy farmers were so successful that they were able to expand their holdings and profit from renting out the land rather than operating it themselves. This trend occurred at the Martin Ranch property, where a small family-operated dairy farm grew to a larger size and was later rented out by the Bauer family who lived in Los Angeles.

Martin Ranch History

In 1867, a patent was granted to Christine Steiger by the State of California for 160 acres, the northwest quarter section of Section 35, Township 16 North, Range 1 West (Del Norte County Deed Books, Book 2A, Page 668). Then in 1895, Emily Steiger and Otto K. Steiger, the sole surviving son of Christopher Steiger, sold their 160 acres to Edward Porta. In 1919, Porta deeded a strip of property 60 feet wide to Del Norte County (Del Norte County Deed Books, Book 34, page 273). Porta continued to own and operate his dairy farm until 1928. In that year, he sold his entire operation to Otmar Bauer of Los Angeles (Del Norte County Deed Books, Book 41, Page 451). After Porta sold the property to Otmar Bauer in 1928, it was operated as a farm rental for many years. The Bauer family continued to own the property until Owen W. Bauer died on August 17, 1988. In his will, Owen Bauer left a "200-plus" acre parcel to Richard Russell Martin (Del Norte County Deed Books, Book 349, Page 534). Richard R. Martin and his wife Nancy L.

Martin owned the property for just ten years, selling it in 1998 to the Elk Valley Rancheria (Del Norte County Deed Books, Book 491, Page 95).

Enderts Beach History

The Enderts Beach site is adjacent to the northern boundary of national and state redwood parks. As discussed in the regional history, demand for redwood affected the old growth redwoods in the area. Land fraud was common, as many thousands of acres of prime redwood forests were transferred from the public domain to private industry (National Parks Service, 2006). Large-scale logging businesses accumulated and harvested massive tracts of timber in these land swindles. According to the National Parks Service, only 300,000 of the original 2 million acres of primeval redwoods remained.

By 1852, legislators sought Congressional protection of the redwood timberlands (Shannon Technologies, 2006). Carl Schurz, Secretary of the Interior in 1879, first proposed that a national park be established in the area. His proposition was unsuccessful. The Save-the-Redwoods League was founded in 1918 and started to acquire land for the purpose of preservation. During this and subsequent years, the League, the National Geographic Society and the Sierra Club fronted the effort to create a national park to preserve the redwood forests. Areas south and east of the Enderts Beach site have been incorporated into national and state redwoods parks.

3.6.3 FINDINGS

MARTIN RANCH SITE

An archaeological inventory of the Martin Ranch site was conducted in October of 2002 (**Appendix H**). This inventory included a record and background search, interviews, and an intensive field survey of the Martin Ranch site. The purpose of the inventory was to identify and evaluate potential historic and prehistoric resources in and around the Martin Ranch site. The information provided below is derived from the survey report and previous environmental studies prepared for the project. Several sources of information were considered relevant to evaluating the types of archaeological sites and site distribution that might be encountered within project boundaries. The information evaluated prior to fieldwork includes data on regional prehistory and ethnography.

Records and Literature Search

A records search was performed in May 2002 at the North Coast Information Center (NCIC). The Center is the official repository for all cultural resource surveys and reviews conducted in Del Norte and Humboldt counties. The records search for the Martin Ranch parcel revealed that one cultural resources survey had been conducted in the vicinity. Archaeologist Steven Kuhn performed the study in 1980. Kuhn identified one historic site in this survey. Additional

literature searches were conducted at the Del Norte County Recorder's Office, the Del Norte County Historical Museum, and the Del Norte County Public Library (**Appendix H**).

Field Survey Methods and Results

An extensive field survey was conducted for the entire Martin Ranch site. The field crews walked the acreage using regularly spaced transects at intervals of no more than 5 meters. Prehistoric resources encountered in the field were flagged for later recordation and mapping. The recordation and mapping were accomplished using standard State of California DPR forms, tape and compass, and a thorough photo documentation. Results of this inventory demonstrated the presence of significant cultural resources within the 203.5± acre candidate trust parcel.

Results of the cultural resources inventory are presented as **Appendix H**, a confidential appendix available to authorized parties under a separate cover.

Findings

The October 2002 Archeological Survey conducted by the Center for Indian Community Development found one previously recorded historic site, two newly identified sites, and a pre-historic component of the previously recorded historical site (Heald, 2002). These sites are listed below with a description of their characteristics and potential significance.

Steiger/Porta Homestead

In 1980, archaeologist Steve Kuhn identified one historic site in a survey of a portion of the northwest quarter of Section 35, Township 16 North, Range 1 West. At the time of recording, the site included a historic house with wood frame construction and shiplap siding as well as two sheds or outbuildings. Since the 1980 recording, the settlement-era residence and a nearby shed have been demolished. Only a small amount of debris remains in the areas where Steven Kuhn mapped these buildings, and foundation footings are not visible. During the October 2002 survey, additional features within the site were noted. It was discovered that in addition to the historic homestead recorded by Kuhn, evidence of prehistoric occupation is associated with the site.

Additional historic features of the site, which were not included on the original site record, were identified. There is a large dairy barn dating back to 1910 that was probably built by Eduardo Porta. There is also a system of corrals that is located adjacent to the north end of the dairy barn. A debris pile of milled lumber is located just west of the corral system. This debris pile is probably the remains of an old outbuilding. Finally, there is a small historic shed. Finally, there is background trash scatter, which covers the entire historic site. Most of the items appear to be early twentieth-century automobile or farm equipment parts, window glass, chunks of concrete, pipe, and scrap iron. No diagnostic early bottles or cans were observed during the field survey.

Segment of Del Norte & Southern Railroad

There is a segment of the Del Norte & Southern Railroad that lies on the eastern edge of the Martin Ranch parcel that was probably constructed sometime around 1915. Today, the segment consists of approximately 2,000 feet of cut earth bank alignment, river-run gravel, and ruins of redwood pilings set in massive concrete piers. A survey before 1979 mapped the parcel west of the rail line. A survey from 1979 amended an earlier mapping error and stated that some of the eastern parcel boundary follows "the westerly line of the abandoned railroad." It seems likely that all or most of the railroad segment lies just outside of the parcel boundary (**Appendix H**).

Segment of Historic Trail

A portion of trail runs through the Martin Ranch property that consists of approximately 2,000 feet of cut earth bank alignment and one Humboldt crossing. This trail could be associated with the Crescent City-Klamath Trail because of their close proximity to one another. In some areas, the historic trail has been disturbed and is no longer visible, but much of the alignment remains intact.

ENDERTS BEACH PROPERTY

Records and Literature Search

A records search of the Enderts Beach site was conducted in January 2006 at the NCIC by NCIC staff. The purpose of the records search was to characterize the archaeological and historic background of the site. The information provided below is derived from NCIC File Number *Haydu 05-03*, which lists previous studies, known historic and cultural resources, data sources, and recommendations. Several sources of information were considered relevant to evaluating the types of archaeological sites and site distribution that might be encountered within project boundaries. The information evaluated includes data on regional prehistory and ethnography. Due to the close proximity of the Enderts Beach site to the Martin Ranch site, regional prehistory, ethnography and history are similar and referenced as such for the following discussion.

Included in the review were the *California Inventory of Historical Resources* (California Office of Historic Preservation 1976), the California Office of Historic Preservation's *Five Views: An Ethnic Historic Site Survey for California* (1988), *California Historical Landmarks* (1990), *California Points of Historical Interest* (1992), and the *Historic Properties Directory Listing for Del Norte County* (2005). The *Historic Properties Directory* includes the National Register of Historic Places, the California Register of Historical Resources, and the most recent listings (through January 27, 2006) of the California Historical Landmarks and California Points of Historical Interest. Additional sources consulted include various literary sources on file at the NCIC.

Results of the record search indicate that no previous cultural resources studies have been conducted within the Enderts Beach site. However, three studies have been conducted within a quarter-mile of the site. No prehistoric, historic or cultural sites were recorded as a result of these studies.

Findings

The findings presented regarding the Enderts Beach site are based solely on the results of the records search and literature review. No prehistoric or historic sites are known to exist within the project boundaries. However, there is always the potential for unrecorded historic and/or cultural resources to be present on the site as archaeological resources are often buried with no surface manifestations. Prior to any federal action being conducted on the Enderts Beach site, a reconnaissance-level survey must be conducted by an archaeologist qualified to the professional standards of the Secretary of the Interior, in compliance with Section 106.

3.7 SOCIOECONOMIC CONDITIONS AND ENVIRONMENTAL JUSTICE

3.7.1 SOCIOECONOMIC CHARACTERISTICS OF DEL NORTE COUNTY

Historically, the mining, timber, fishing, and canning industries fueled the Del Norte County economy. Today, one of the biggest industries is tourism and recreation. According to the 2000 Census (U.S. Census Bureau, 2002), arts, entertainment, recreation, accommodation and food services represent 13 percent of the local industry. Public administration and educational, health and social services represent 20 percent and 23.4 percent respectively. Agriculture, forestry, fishing, hunting, and mining only represent 6.2 percent. The decline of these once important regional industries has resulted in consistently higher unemployment and poverty rates than California as a whole. Employment characteristics from the California Employment Development Department are shown in **Table 3-11.**

TABLE 3-11
DEL NORTE COUNTY EMPLOYMENT

	1999 Annual Average	**2000 Annual Average**	**2001 Annual Average**	**2002 Annual Average**
Del Norte County Unemployment Rate	8.0%	8.7%	8.7%	7.7%
California Unemployment Rate	5.2%	4.9%	5.3%	6.1%
U.S. Unemployment Rate	4.2%	4.0%	4.8%	6.0%

SOURCE: California Employment Development Department, Labor Market Information, 2002; McCann *et al*., 2004.

According to the 2000 Census, over 53 percent of the overall population is not in the labor force. Crescent City has even higher unemployment and poverty rates. The median household income of Del Norte County is $29,642, compared to $47,493 for the State of California. Del Norte County has a total population of 27,507. Del Norte is one of the poorest counties in California,

ranking 57th out of 58. The county's unemployment rate in April 2004 stands at 7.7%, well above the state's average jobless rate of 6.1 percent (McCann *et al*., 2004; **Appendix O**). A large portion of the unemployed population resides in Crescent City and the surrounding urban area.

The median household income of Crescent City is $22,058, which makes it one of the poorest communities in California. Over one third of all families in Crescent City are below the poverty level (U.S. Census Bureau, 2002). Crescent City itself has a population of 4,006. In the last decade, the population of both Del Norte County and Crescent City has remained relatively constant. The only exception is when the City annexed the Pelican Bay State Prison in 1992. However, the acquisition of the prison population has done little to change local development patterns. Del Norte County has added only 4,047 people since 1990 and Crescent City has actually lost population since 1990, excluding the incarcerated population (U.S. Census Bureau, 2002).

3.7.2 SOCIOECONOMIC CHARACTERISTICS OF THE ELK VALLEY RANCHERIA

According to the 2000 Census (U.S. Census Bureau, 2002), the Elk Valley Rancheria has a population of 77 (members and non-members) and contains 36 housing units. Approximately 52 percent of all residents are Native American or Alaskan Natives and 43 percent are white. Approximately 73 percent of all occupied households own their homes, while approximately 27 percent rent. Employment and income opportunities are available from Tribal government operations and the Elk Valley Casino. Local jobs generated as a result of Tribal government operations and the gaming enterprise are the primary employment and income generators on the Rancheria. Approximately 29 percent of the employed population over 16 years of age is classified as management, professional, and related occupations, and over 29 percent are employed in construction, extraction, and maintenance operations. Other employment opportunities for the Rancheria residents are available in the Crescent City area. Despite the employment opportunities available, over 55 percent of the population, 16 years of age or older, is not in the labor force. Approximately 13 percent of the civilian labor force is unemployed. Median household income is $18,750, well below that of the City and County, and approximately 26 percent of the overall population is below the poverty level.

According to the BIA's *Indian Labor Force Report* (1999), 19 percent of the Tribe's service populations (on or near the Rancheria) were unemployed as a percentage of the labor force and 17 percent were employed, but still below the poverty level. According to Tribal officials, the population of the Tribe is approximately 100 members, with 17 members residing on the Rancheria.

3.7.3 COMMUNITY INFRASTRUCTURE

SCHOOLS

The Del Norte County Unified School District (DNCUSD) and the Del Norte County Office of Education provide services to the Crescent City area. DNCUSD operates seven public schools, including two high schools and one middle school. Joe Hamilton Elementary School, Crescent Elk Middle School, and Del Norte High School provide public educational services for students residing on the Elk Valley Rancheria.

The County Office of Education provides education services for the County including Alternative Education School and Juvenile Hall. DNCUSD and the County Office of Education share the same boundaries and have the same five board members. There are three schools in the Crescent City area that provide private educational opportunities: St. Joseph's Catholic School, Four Square Christian School, and Crescent City Junior Academy. A branch campus of the College of the Redwoods is Del Norte County's only college. The main campus of the College of the Redwoods is located about 94 miles to the south of Crescent City in the City of Fortuna, which is located in neighboring Humboldt County. Humboldt State University, a unit of the California State University System, is 76 miles south of Crescent City. Southern Oregon State College is 123 miles northeast of Crescent City.

LIBRARIES

The Crescent City Library is located at 883 W. Washington Boulevard in Crescent City, which is about a mile northwest of the site.

PARKS

The County of Del Norte operates three parks in the vicinity. Florence Keller Park is located three miles north of Crescent City on Highway 101. The park has 50 campsites, all set in the midst of the Redwoods. The park offers seven easy-walking trails, one of which is wheelchair accessible. One large picnic area with horseshoe pits, volleyball court, tetherball, and swings are available to rent. Ruby Van Deventer Park is located on Highway 197, which connects Highway 101 and Highway 199. Ruby Van Deventer Park is surrounded by majestic redwood trees and offers 18 campsites. One group picnic area is available. Access to the Smith River is only 50 yards away, offering swimming, kayaking, and seasonal trout and salmon fishing. Clifford Kamph Park is located on the west side of Highway 101, on a bluff overlooking the Pacific Ocean, less than two miles south of the Oregon border and 4.8 miles north from the town of Smith River. The park has nine tent-only campsites; one of which is on the beach. There are additional parks in the City of Crescent City operated by the City.

3.7.4 TRIBAL ATTITUDES, EXPECTATIONS, LIFESTYLE AND CULTURE

Both the Tribal government and individual Tribal members participate in area political and social activities. Tribal children attend local area schools and adult Tribal members are employed by local businesses. Altogether, Tribal attitudes and expectations favor increasing participation in, and benefit from, the regional economy, with continuation of the long tradition of comfortable coexistence and cooperation with their non-Indian neighbors.

3.7.5 ENVIRONMENTAL JUSTICE

POLICY/REGULATORY CONSIDERATIONS

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, as amended, directs federal agencies to develop an Environmental Justice Strategy that identifies and addresses disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations. CEQ has oversight responsibility of the federal government's compliance with Executive Order 12898 and NEPA. The CEQ, in consultation with the USEPA and other agencies has developed guidance to assist federal agencies with their NEPA procedures so that environmental justice concerns are effectively identified and addressed. According to the CEQ's *Environmental Justice Guidance Under the National Environmental Policy Act*, agencies should consider the composition of the affected area to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by the proposed action, and if so whether there may be disproportionately high and adverse environmental effects.

AFFECTED ENVIRONMENT

To determine whether a proposed action is likely to have disproportionately high and adverse effects, agencies must identify a geographic scale for which they will obtain demographic information. This should roughly correspond to the affected environment.

Census tracts are small, relatively permanent statistical subdivisions of a county delineated by a local committee of census data users for the purpose of presenting data. Census tract boundaries normally follow visible features, but may follow governmental unit boundaries or other features. They are designed to be relatively homogeneous units with respect to population characteristics, economic status, and living conditions at the time of establishment. Block groups within each census tract were also examined.

RACE

According to the 2000 Census (U.S. Census Bureau, 2002), the Del Norte County region and Crescent City area have a predominately Caucasian ethnic composition. Whites make up between 78 and 79 percent of the overall population. This is considerably higher than for

California as a whole. American Indian and Alaskan Natives comprise the next highest group among one-race individuals, with 6.1 percent and 6.4 percent of the overall population respectively. This is higher than for the rest of California. The ethnic composition of the region has become more diverse since the 1990 Census, which can be attributed partly to the annexation of Pelican Bay Prison.

On February 11, 1994, President Clinton signed *Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations. Executive Order 12898,* as amended, directs federal agencies to develop an Environmental Justice Strategy that identifies and addresses disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations. Minority neighborhoods are those defined by Census Tracts or Block Groups that have higher concentrations of minority (or non-white) persons than the County overall. Low-income is generally defined by the U.S. Department of Housing and Urban Development and other agencies as 80% or less of the county median household income.

INCOME

The Martin Ranch site is not located in a low-income neighborhood. The Martin Ranch site is located within Del Norte County Census Tract 1.02, which has a median household income of $28,663, only slightly less (approximately 3%) than the County as a whole. According to the 2000 Census (U.S. Census Bureau, 2002), the median household income for Del Norte County is $29,642. The project would not be located in a minority neighborhood. Del Norte County Census Tract 1.02 has a lower concentration of non-white persons than the County or City as a whole. The Del Norte County region and Crescent City area have a predominately Caucasian ethnic composition, with whites making up between 78 and 79 percent of the overall one-race population. This is considerably higher than for California as a whole. American Indians and Alaskan Natives compose the next highest group among one-race individuals, with 6.1 percent and 6.4 percent, respectively, of the overall population. This is higher than for the rest of California. By contrast, the project area is nearly 86 percent white among one-race individuals.

3.8 RESOURCE USE PATTERNS

The following setting subsection applies to both the Martin Ranch and Enderts Beach properties.

3.8.1 TRANSPORTATION

EXISTING CIRCULATION NETWORK

The site is located approximately 2 miles south of the City of Crescent City along the Highway 101 corridor. Highway 101 is rural in nature within the project area. Automobiles are the

primary travel mode for most trips in the vicinity. This section summarizes the existing transportation system in the vicinity of the Martin Ranch site.

ROADWAY SYSTEM

Figure 3-12 illustrates the roadways and existing volumes in the vicinity of the Martin Ranch site. A brief description of the key roadway facilities in the area is provided below.

Highway 101

Highway 101, under the jurisdiction of Caltrans, provides primary regional access to the Crescent City area and the Martin Ranch site. This rural highway consists of one through lane in each direction with paved shoulders and a posted speed limit of 55 mph. The terrain in this area is flat, and is free from major horizontal and vertical curves between Elk Valley Road and Humboldt Road. Highway 101 intersects three county roads near the Martin Ranch site, and descriptions of each intersection are listed below:

- Highway 101/Elk Valley Road is a four-legged, signalized intersection.
- Highway 101/Sandmine Road is an unsignalized "tee" intersection. Existing storage for the southbound left-turn lane was measured at 125 feet. Assuming 25 feet per vehicle, this is storage for approximately 5 vehicles.
- Highway 101/Humboldt Road is a four-legged, unsignalized intersection.

Humboldt Road

Humboldt Road, under the jurisdiction of Del Norte County, is a minor two-lane road that runs in a north-south direction through the project area, and has a posted speed limit of 45 miles per hour. This rural road is a designated bicycle route. Sight distance onto Highway 101 exceeds 1,000 feet in each direction.

Sandmine Road

Sandmine Road, under the jurisdiction of Del Norte County, is a short one-half mile long road that connects Highway 101 to Humboldt Road. This road cuts the corner that is created by the alignment of Highway 101 and Humboldt Road. Most of the motorists in the area use Sandmine Road to access Highway 101 north of the project area.

EXISTING INTERSECTION TRAFFIC VOLUMES

Peak hour turning movement traffic data was collected in the field on a typical weekday during the month of March 2001 during PM peak periods at three study intersections (i.e. Highway 101/Sandmine Road, Highway 101/Humboldt Road, and Humboldt Road/Sandmine Road). Peak hour factors were obtained from traffic counts ranging from 0.60 to 0.91 for study intersections.

Insert Figure 3-12

For the intersection of Highway 101/Elk Valley Road, the default Highway Capacity Manual peak hour factor of 0.88 for rural roadways was used. Traffic volumes at Highway 101/Elk Valley Road were obtained from another traffic study in December 1998. An average day PM peak hour is defined as being the highest volume hour between the hours of 4:00 to 6:00 p.m. Existing PM peak hour turning movements at the study intersections are depicted in **Figure 3-12.**

DAILY ROADWAY SEGMENT OPERATIONS

All roadways serving the Martin Ranch site are currently operating at acceptable levels of service. **Table 3-12** provides a description of operating conditions of relevant local roadways.

TABLE 3-12
DAILY ROADWAY SEGMENT PERFORMANCE EXISTING CONDITIONS

Roadway Segment	Daily Volume	Capacity	Volume/ Capacity	LOS
Highway				
Highway 101 - Humboldt County Line to SR-169	3,400	80,000	0.04	A
Highway 101 - SR-169 to Requa Road	4,450	23,000	0.19	B
Highway 101 - Requa Road to Sandmine Road	5,700	23,000	0.25	C
Highway 101 - Sandmine Road to Crescent City Limits	4,600	23,000	0.20	C
Highway 101 - Crescent City Limits to Elk Valley Road	4,600	17,000	0.27	C
Highway 101 - Elk Valley Road to Front Street	10,500	35,800	0.29	C
Highway 101 - Front Street to 4th Street	16,600	44,700	0.37	D
Highway 101 - 4th Street to 9th Street	22,300	44,700	0.50	D
Highway 101 - 9th Street to Northcrest Drive	26,500	44,700	0.59	D
Highway 101 - Northcrest Drive to Crescent City Limits	11,000	35,800	0.31	C
Highway 101 - Crescent City Limits to Wash. Blvd.	11,000	72,000	0.15	B
Highway 101 - Washington Blvd. to SR-199	9,600	80,000	0.12	B
Highway 101 - SR-199 to SR-197	7,400	23,000	0.32	C
Highway 101 - SR-197 to Fred Haight Drive	7,700	23,000	0.33	C
Highway 101 - Fred Haight Drive to Oregon State Line	6,600	23,000	0.29	C
Street				
Klamath Beach Road - Highway 101 to Ocean	800	23,000	0.03	A
Requa Road	900	23,000	0.04	A
Humboldt Road - Highway 101 to Howland Hill Road	2,600	23,000	0.11	B
Howland Hill Road - Elk Valley Road to Redwood Park	2,400	23,000	0.10	A
Elk Valley Road - Highway 101 to Howland Hill Road	4,200	28,000	0.15	B
Elk Valley Road - Howland Hill Road to SR-199	1,400	23,000	0.06	A

SOURCE: Del Norte County General Plan Update Public Hearing Draft EIR, 2000.

PEAK HOUR INTERSECTION PERFORMANCE

Level of service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. LOS A represents free flow conditions and LOS F represents forced flow or breakdown conditions. **Table 3-13** provides a description of operating conditions under the various LOS.

The only intersection in the study area that is signalized is Highway 101/Elk Valley Road. The other three existing study intersections (i.e. Highway 101/Sandmine Road, Highway

101/Humboldt Road, and Humboldt Road/Sandmine Road) are unsignalized. **Table 3-14** depicts the existing PM peak hour LOS at each study intersection.

TABLE 3-13
INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service	Description	Unsignalized (Average Total Delay in Seconds/Vehicle)	Signalized (Average Total Delay in Seconds/Vehicle)
A	Represents free flow. Individual users are virtually unaffected by others in the traffic stream.	< 10	< 10
B	Stable flow, but the presence of other users in the traffic stream begins to be noticeable.	10-15	10-20
C	Stable flow, but the operation of individual users becomes significantly affected by interactions with others in the traffic stream.	15-25	20-35
D	Represents high-density, but stable flow.	25-35	35-55
E	Represents operating conditions at or near the capacity level.	35-50	55-80
F	Represents forced or breakdown flow.	> 50	> 80

SOURCE: Transportation Research Board (TRB) Highway Capacity Manual, Special Report 209, 2000.

TABLE 3-14
EXISTING LEVELS OF SERVICE

Intersection *Approach*	Existing Conditions	
	Delay	LOS
Highway 101/Elk Valley Road	25.1	C
Highway 101/Sandmine Road		
WB (Sandmine Rd.) approach	10.2	B
SB (Highway 101) left-turn	8.1	A
Highway 101/Humboldt Road		
EB (Humboldt Rd.) approach	11.9	B
WB (Enderts Beach Rd.) approach	12.0	B
Humboldt Road/Sandmine Rd		
EB (Project Access) approach	9.6	A
WB (Sandmine Rd.) approach	--	--

NOTES: LOS = Level of Service
Delay is measured in average seconds per vehicle.
SOURCE: Whitlock & Weinberger Transportation, Inc. 2006; **Appendix C.**

Table 3-14 shows that all existing intersections currently operate at LOS C or better during PM peak hour conditions. Additionally, all of the unsignalized intersections are operating at a LOS of B or better (Whitlock & Weinberger Transportation, Inc. 2006; **Appendix C**). Intersection storage at Highway 101/Sandmine Road was evaluated for the southbound left-turn lane on Highway 101. During the PM peak hour there are a maximum of 3 queued vehicles.

EXISTING BICYCLE AND PEDESTRIAN SYSTEM

The Martin Ranch site is located in a rural setting, with negligible pedestrian activity, thus there are no sidewalks along vicinity roadways. Highway 101 has paved shoulders and is scenic in nature, which promotes the use of bicycles on this route. Humboldt Road is a designated bicycle route.

TRANSIT SERVICE

Fixed-route transit service is available in the vicinity of the Martin Ranch site. Currently, the Rancheria and Elk Valley Casino are accessible via public transit provided by Redwood Coast Transit, which provides services with five stops per day, seven days a week at the Elk Valley Rancheria.

3.8.2 LAND USE

REGIONAL SETTING

Del Norte County is located at the extreme northern end of California. Crescent City is California's northernmost coastal city. It is located approximately 350 miles north of San Francisco and 330 miles south of Portland, Oregon. The area is bordered by the Pacific Ocean, broad beaches, coastal bluffs, a harbor, scattered forests, and rural residences. The County contains large areas of parks, open space and agricultural land. There are very few urban areas. Most towns and cities are located along Highway 101, a major north-south highway.

PARKS AND RECREATIONAL OPPORTUNITIES ON PUBLIC LAND

Both sites are adjacent to the Redwood National and State Parks, home to some of the world's tallest trees: old-growth coast redwoods. Three California State parks and the National Park Service unit represent a cooperative management effort of the National Park Service and California Department of Parks and Recreation. They are Prairie Creek Redwoods State Park, Del Norte Coast Redwoods State Park, Jedediah Smith Redwoods State Park, and Redwood National Park, comprising 45 percent of all the old-growth redwood forest remaining in California. Together these parks are a World Heritage Site and International Biosphere Reserve, protecting resources cherished by citizens of many nations. East of the Redwood National and State Parks is Six Rivers National Forest, encompassing over 1 million acres, which includes the Smith River Recreation Area. North of Crescent City are recreational areas including Tolowa Dunes State Park and Pelican State Beach. Federal parks, State parks, and other recreational areas in Del Norte County offer scenic views, camping, fishing, trails, picnic areas, and swimming, among other activities.

MARTIN RANCH SITE

The Martin Ranch site is located on the east side of the intersection of Humboldt Road and Highway 101, south of Crescent City in unincorporated Del Norte County. The site lies within the City of Crescent City's Planning Area but outside of its City Limits and Urban Boundary. Surrounding land uses consist primarily of grazing lands, parklands, open space and residential housing (**Figure 3-13**). To the north of the Martin Ranch site is a residential neighborhood served by public sewer and water facilities. To the east are forested parklands owned by the State of California. South of the Martin Ranch site, there are lands owned by the State and Redwood National Park, a single-family residence, a California Department of Parks and Recreation building, and open space. To the west are state lands managed by the California Department of Fish and Game, including the Crescent City Marsh. A motel building is also located immediately west of the site, across Humboldt/Enderts Beach Road; otherwise, the land is undeveloped open space to the coastline. Highway 101 is located adjacent to the southwest portion of the site as shown in **Figure 3-13**.

The Martin Ranch site is currently used for livestock grazing and contains a single-family residence, large barn, and shop building.

Zoning and General Plan Designations

The site is bisected from northwest to southeast by the coastal zone boundary. As such, the site currently contains coastal and non-coastal zoning and land use designations.

Land Use Designations

The California Coastal Act of 1976 sets forth criteria for the development of Local Coastal Programs (LCPs). These programs consist of the Land Use Plan and Implementation Program and are developed by the local governmental jurisdiction, reviewed and certified by the California Coastal Commission, and then implemented at the local level. These LCPs satisfy the state's responsibility under its federally approved Coastal Management Program pursuant to the Coastal Zone Management Act (CZMA). An updated Del Norte General Plan was adopted in 2003 and was written to supercede both the former General Plan and the Local Coastal Element of 1984. However, the General Plan has not received approval from the California Coastal Commission, which is required to apply to the Coastal Zone. Thus, the policies in the 1984 Local Coastal Element apply to the coastal portions of the Martin Ranch site, and the updated General Plan applies to the non-coastal portions. The site is currently designated as Agricultural General (5-acre minimum parcel size; AG-5) and Resource Conservation Area (RCA) in the Coastal Zone and AG-5, Timberland, and RCA outside of the Coastal Zone (**Figure 3-14**). While a small portion of the coastal zone is designated as Timberland in the updated County General Plan, this designation will not apply until the Coastal Commission approves the updated General Plan (Kunstal, pers. comm., 2006). The Martin Ranch site is zoned as AG-5 and RCA-2 in the Coastal

Insert Figure 3-13

Insert Figure 3-14

Zone and Agricultural General outside of the Coastal Zone (**Figure 3-15**). The Del Norte County General Plan and General Plan Coastal Element contain the following discussions:

Agricultural General (5-acre)
This designation applies to both coastal and non-coastal portions of the property. The discussion in the Del Norte County General Plan and 1984 Coastal Element are substantially similar. This designation applies to general agriculture lands used for or adjacent to agriculturally used lands, where small-scale agriculture provides or can provide food, fiber or animal management for enjoyment or economic benefit. The minimum size is five or more contiguous acres. Its purpose is to provide for small-scale commercial and hobby agriculture and, where necessary, to provide a transition between other designation resource areas and higher intensity uses. Principal uses are agricultural production, structures directly related to agricultural production, and related land management activities. Single-family residence and home occupation are permitted. Other resource management uses such as mineral extraction and timber production may also be permitted.

Timberland
The Timberland designation applies only to non-coastal portions of the property and thus is discussed in the General Plan. This designation applies to areas, which have characteristics for the production of timber and comprise 20 or more contiguous acres. Its purpose is to encourage ongoing timber production and to prevent the intrusion of incompatible uses. The principal use of timberland is the growing and harvesting of trees with accessory activities such as logging roads, log landings, or portable chippers or mills. Additional permitted uses include temporary labor camps related to timber harvest or reforestation, and watershed and wildlife habitat management. Other resource management uses such as mineral extraction and agricultural grazing may be permitted where conversion of timberland is not required. Where it is demonstrated that there would be no detraction from or conflict with the principal uses, conditional use permits may be considered for public recreational uses such as camping, utility transmission facilities (gas, electric, water, communication, etc.), or one single-family dwelling subject to all other policies and standards for such development. Development for purposes other than timber production on land with 30 percent or greater slope is severely restricted.

Resource Conservation Areas
As this designation applies primarily to coastal portions of the property, the discussion is taken from the 1984 Local Coastal Element. RCAs are areas mapped on the accompanying constraint maps as wetlands and farmed wetlands, riparian corridors, estuaries, and coastal sand dunes.

Development within these areas is subject to the policies of the certified land use plan. No single-family residences or other structures shall be permitted within an RCA unless that would result in denial of substantially all reasonable use of the land. Where parcels totally within the RCA

Insert Figure 3-15

category are contiguous with a parcel outside (or partially outside) the RCA category, and where all of these parcels have a single owner, these parcels shall be merged as a condition of approving development on the non-RCA parcel. Development type and intensity on the non-RCA portion of the resulting parcel shall be that specified by other Land Use Plan (LUP) policies. The allowable uses within designated RCAs shall be limited to:

1. Fish and wildlife management.
2. Nature study.
3. Wetland restoration.
4. Hunting and fishing, including development of duck blinds and similar minor facilities.
5. In estuaries, maintenance and improvement of boating facilities consistent with other land use plan policies.
6. In Farmed Wetlands or agriculturally used parcels, agricultural operations are a principal use but such uses should maintain long-term habitat values and, where feasible, minimize short-term degradation.
7. Those recreational facilities included in a State Park and Recreation/Department of Fish and Game Master Plan submitted and approved as an amendment to the Local Coastal Program.
8. In riparian habitat areas the following uses are allowed:
    (i) Recreational trails.
    (ii) Hunting and fishing.
    (iii) Timber harvesting of conifers where heavy equipment is not used and where at least 50% of the coniferous tree canopy and where all of the hardwood tree canopy is retained and removal is otherwise consistent with forest practices rules for special treatment areas and stream protection zones.
    (iv) Maintenance of existing flood control and drainage channels.
    (v) Wells within rural areas.
    (vi) Firewood removal by owner, for use in residence on site.
    (vii) Road maintenance and repair of existing roads. New stream crossings shall be limited when feasible to right-angle crossings of streams and stream corridors.
9. In all resource areas, the maintenance of flood drainage control and drainage channels.
10. In all resource areas, removal of windblown trees that threaten existing structures.

The Del Norte County Coastal Element (1983 LCP) also contains the following discussion regarding the property:

Specific Area Recommendations
The parcel lying east of Highway 101 and Humboldt Road, known as assessor's parcel no. 115-020-28 shall be identified for an agricultural use as an interim use. Should the parcel be

developed for a public or quasi-public use, such as a community education center, this area may be used for low-intensive uses related to the public or quasi-public use in conformance with the local coastal program.

Zoning

Figure 3-15 shows the applicable zoning for the Martin Ranch site. The site contains A-5 (Agricultural General – 5 acres) and RCA-2 (FW) (Resource Conservation Area, Farmed Wetland) zoning in the Coastal Zone portion of the property, where use is regulated by Title 21 Coastal Zoning of the Del Norte County Code. The site contains Agricultural (A District) zoning, five-acre minimum parcel size, in the non-coastal section of the property, where use is regulated by Title 20 of the Del Norte County Code. The Agricultural zoning is inconsistent with the overlapping designation of Timberland; this inconsistency occurs throughout the County (Kunstal, pers. comm., 2006). The General Plan would need to be amended to support agricultural uses in areas designated as Timberland. The Del Norte County Code contains the following discussion on zoning:

Agricultural General (5-acre)

Since there is limited area within the County, which is suitable for and used intensively as agricultural land, this district is designed for the protection of agricultural and related industry against encroachment by other potentially conflicting uses. Changes of district from Agricultural to another classification are to be made only where such uses are in accord with the General Plan or adopted specific plan. The principal permitted uses include: agricultural uses excepting feed lots, accessory and agricultural buildings, a one-family residence, and an unlighted sign not over thirty-five square feet in size.

Resource Conservation Area, Farmed Wetland

The designated resource conservation area zone is intended to designate the location and type of resource conservation areas in order to protect and enhance the quality and productivity of these sensitive resource areas as mandated by state and federal regulations. Changes in zoning are to be made subject to Special Zoning Requirements (Section 21.11.060) and only where such uses are in accord with the General Plan or adopted specific plan. Principal permitted uses in farmed wetland areas include agricultural uses, maintenance and repair of agricultural drainage systems, nature study, fish and wildlife management, hunting, and fishing.

Agricultural

The intent of the zoning chapter is the same as that listed for A-5 districts. In addition, it is the intention of the zoning regulations for this district to deter developers from considering prime agricultural lands as potential urban subdivision property.

Uses permitted in Agricultural zones shall be as follows:

1. A one-family home. A manufactured home may be placed in lieu of a conventional unit;
2. Home occupations;
3. Nurseries and greenhouses;
4. Accessory buildings and accessory uses including barns, stables and other farm buildings, quarters for farm labor and/or servants employed on the premises;
5. All agricultural uses, including crop and tree farming, small livestock farming and animal husbandry;
6. Dairies and cheese processing plants;
7. Signs, not over thirty-five square feet and appurtenant to any permitted use;
8. Home enterprises which are agricultural in nature;
9. Guest lodging.

Uses permitted with a use permit shall be as follows:

1. Country clubs and golf courses;
2. Commercial enclosed kennels for dogs and cats;
3. Animal hospitals and veterinary clinics;
4. Public or quasi-public uses;
5. Guest ranches and public stables;
6. A mobile home in lieu of a conventional residential unit or a manufactured home;
7. Billboards not related to permitted use;
8. Airports;
9. Commercial excavations for rock and gravel and rock aggregate processing plants;
10. Asphalt and concrete batch plants;
11. Oil and gas drilling;
12. Stockyards, slaughterhouses and tanneries;
13. Hog ranches;
14. Home enterprises that are not agricultural in nature.

Coastal Zone

The Nation's coastal waters are protected by the Federal Coastal Zone Management Act (CZMA) of 1972, which is administered by the National Oceanic and Atmospheric Administration within the Department of Commerce. In California, the CZMA is administered by the California Coastal Commission (CCC), which was established by voter initiative and made permanent by the California Coastal Act of 1976. The CCC carries out its statutory responsibilities largely through the review and approval of local coastal programs (LCPs). Approximately one half of the property is within the California Coastal Zone (**Figure 3-14**). The Coastal Zone is defined by the California Coastal Act as, "the land and water area of the State of California from the Oregon Border to the border of the Republic of Mexico," as officially mapped on 7.5-minute USGS quadrangle maps and adopted by the CCC.

Title 15 CFR Part 930 requires federal consistency determinations for projects affecting the Coastal Zone (**Appendix N**). Federal consistency determinations stem from the CZMA requirement that federal actions (that are reasonably likely to affect any land or water use or natural resource of the Coastal Zone) be consistent with the enforceable policies of a coastal state's or territory's federally approved Coastal Management Program ("state CMP" or "CMP"). federal actions include: (1) direct federal actions--activities and development projects performed by a federal agency, or a contractor for the benefit of a federal agency; and (2) indirect federal actions--activities not performed by a federal agency, but requiring federal permits or licenses or other forms of federal approval, and federal financial assistance to states, territories, and local governments (**Appendix N**).

The objective is to ensure that federal agencies and applicants for federal approvals and funding adequately consider and comply with state CMPs. Under CZMA SEC. 307 (C), each federal agency shall provide a consistency determination to the relevant state agency designated at the earliest practical time, but in no case later than 90 days before final approval of the federal activity (unless both the federal agency and the state agency agree to a different schedule).

ENDERTS BEACH PROPERTY

Zoning and General Plan Designations

The area is designated a resource conservation zone. The implication of this classification is discussed in the previous subsection.

Coastal Zone

The Enderts Beach parcel is entirely within the Coastal Zone. Local Coastal Zone plans and policies are discussed in the previous section.

3.8.3 AGRICULTURE

WILLIAMSON ACT PROVISIONS

The California Land Conservation Act of 1965 (commonly referred to as the Williamson Act) enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive favorable property tax assessments because they are based upon farming and open space uses as opposed to full market value. Local governments receive an annual subvention of forgone property tax revenues from the state via the Open Space Subvention Act of 1971. The contract is self-renewing and the landowner may notify the County at any time of intent to withdraw the land from its preserve status. Withdrawal involves a 10-year period of tax adjustment to full market value before protected open space can be converted to urban uses. Consequently, land under the Williamson Act contract can be in either a renewal status or a non-renewal status. Lands with a non-renewal status indicate the farmer has withdrawn from the Williamson Act contract and is

waiting for a period of tax adjustment for the land to reach its full market value. Non-renewal lands are candidates for potential urbanization within the next 10 years. Although the Martin Ranch site and surrounding area consists of open land, there are no Williamson Act contracts on the site.

FARMLAND PROTECTION POLICY ACT

The Farmland Protection Policy Act (FPPA, Public Law 97-98) found at 7 USC § 4201-4209 requires federal agencies to take into account the adverse effects of their programs on the preservation of farmland, to consider alternative actions, as appropriate, that could lessen adverse effects, and to ensure that their programs, to the extent practicable are compatible with state and units of local government and private programs and policies to protect farmland. The goal of the FPPA is to minimize the extent that federal actions and programs result in the conversion of agricultural lands to non-agricultural uses. Once it is determined that farmland, as defined in 7 CFR § 658.2, exists, a Farmland Conversion Impact Rating Form (Form AD-1006) is used to determine the value of the farmland under consideration and the level of protection such land should receive. According to the NRCS, the site contains approximately 96 acres of prime and unique farmland (**Appendix E**).

MARTIN RANCH SITE

The property is currently used for cattle grazing and residential purposes. Historically, the site was used for small and then larger dairy operations between 1880 and 1928. After 1928, the site was used as a farm rental (leased land) for many years.

ENDERTS BEACH PROPERTY

The 22-acre Enderts Beach parcel has been used in the past as the site of a cabin, which had no sanitary improvements. Evidence of agricultural operations was not apparent. The site is now abandoned.

3.9 PUBLIC SERVICES

3.9.1 WATER SUPPLY

MARTIN RANCH SITE

As described in the Tribe's MOU with Del Norte County, and in letters from the City of Crescent City Public Works Director (**Appendix I**), domestic water for the project would be provided by the City of Crescent City and/or Bertsch Ocean View Community Services District (BOVCSD). The BOVCSD serves a small outlying area just east of Crescent City. The District contracts with the City for its water service.

Crescent City has water rights to the Smith River totaling 6.3 million gallons per day (MGD). The City obtains water from the aquifer below the river using a Ranney Collector. Collected water is considered groundwater under the influence of surface water. The collector is at capacity and the City consumed 3.6 MGD on its peak day of use in August 2003 (MWH America, Inc. 2004a; **Appendix L**).

The BOVCSD system connects to the Crescent City water system near Highway 101 and consists of a pump station (which operates at 180 gallons per minute), 6 to 12-inch diameter water lines, and a 750,000-gallon storage tank. There are 583 residential and commercial service accounts within the District that consume 53,885 gallons per month and 646,620 gallons per year. The average daily demand is 1,772 gallons per day. Since the BOVCSD system is hooked onto the Crescent City Water System, improvements to the Crescent City facilities must be made before capacity in the BOVCSD can be improved. The Tribe has an agreement with the City of Crescent City for bulk water purchases.

The BOVCSD has recently made approximately $9 million in improvements and upgrades to its system. In order to provide water to the proposed project, the water supply system would likely need to be looped through the site to connect to existing 8-inch diameter water mains in Humboldt Road and Roy Avenue (White Shield, Inc., 2002; MWH America, Inc. 2004a). The location of these facilities is shown in **Appendix L**. An existing two-inch diameter water line that connects to the community water system currently serves the single-family residence on site. The existing water line follows the access road from Humboldt Road. There are unimproved rights-of-way to the north of the Martin Ranch site that extend from Endert Street and Darby Street to the northern boundary of the Martin Ranch site. These unimproved rights of way could be used for future utility routes.

Water supplied by the BOVCSD is of high quality and the City has limited water treatment to additions of chlorine and fluoride prior to distribution (City of Crescent City, 2001; MWH, America, Inc. 2004a).

ENDERTS BEACH PROPERTY

Potable water is not currently available at the Enderts Beach site.

3.9.2 WASTEWATER SERVICE

MARTIN RANCH SITE

The City of Crescent City currently operates a treatment plant that serves City and County properties in the area. The plant serves a population of 14,387 and treats an average dry weather flow of 1.26 MGD. The plant is at capacity and does not have available capacity to treat the wastewater generated by the casino resort project (MWH America, Inc., 2004b; **Appendix M**).

A portion of the unincorporated Crescent City sub area is served by a wastewater collection system, which is owned and maintained by County Service Area No. 1. County Service Area No. 1 consists of two areas: Northcrest and Bertsch Ocean View. The remainder of the Crescent City unincorporated area uses on-site sewage disposal (the predominant type of disposal in the area), even in areas within the urban boundary. The residence on site is served by an individual septic tank and leach field system. Sewers were put into the Northcrest and Bertsch Ocean View areas because soils were not suitable for higher residential densities (Del Norte County, 1998). Within the district there is an option for on-site sewage disposal systems for parcels one acre and larger.

Sanitary sewer lines are located in Humboldt Road and Roy Avenue near the Martin Ranch site. The project would require installation of a 6-inch diameter line in Humboldt Road to connect to the existing 6-inch diameter line at the intersection of Humboldt Road and Roy Avenue and installation of a connecting line from Humboldt Road to the proposed facilities. Existing facilities are shown in **Appendix M**.

ENDERTS BEACH PROPERTY

The Enderts Beach site is not currently served by a public sewer system.

3.9.3 SOLID WASTE SERVICE

MARTIN RANCH SITE

Service for disposal of solid waste in the area is provided by the Del Norte County Solid Waste Management Authority (DNCSWMA), which is a Joint Powers Authority (JPA) composed of the City of Crescent City and Del Norte County. Curbside garbage pick-up is available to the Martin Ranch site through Del Norte Disposal, Inc., and is utilized at all existing Tribal facilities. As with other Tribal facilities, it is anticipated that dumpsters provided by Del Norte Disposal, Inc. would be located on site, including separate containers for recyclables.

Solid waste for Crescent City was formerly disposed of at the Crescent City Landfill, which was closed to the public on March 11, 2005. The new regional facility that serves the area is the Del Norte County Transfer Station, located at 1700 State Street in Crescent City. The transfer station exports solid waste out of state to the Dry Creek Landfill in White City, Oregon. In addition, the County is aggressively pursuing waste prevention, recycling, and composting to prolong existing capacity as long as possible and to meet state-mandated waste reduction timeframes (City of Crescent City, 2001; California Integrated Solid Waste Management Board, 2002).

ENDERTS BEACH PROPERTY

Solid waste collection service is available at the Enderts Beach site.

3.9.4 ELECTRICITY, NATURAL GAS AND TELECOMMUNICATIONS

ELECTRICAL AND GAS SERVICES

Pacific Power, a PacifiCorp Company, provides electrical service to the entire Crescent City area including both project sites. Three-phase, 460-volt electric power can be extended to the site from existing lines located in Humboldt Road. Power lines also exist on the subject property along the existing access road. There is no natural gas service available in this region of the coast. Heating, ventilation, air conditioning and other gas uses would have to be supplied from an on-site liquid propane gas tank.

TELECOMMUNICATIONS

Telephone service is provided by Verizon Communications. Both sites are within a franchise area and telephone service is available and operating on the Martin Ranch site. Telephone service is available at the Enderts Beach site. Cellular service providers in the County include Edge Wireless, Del Norte Cellular, US Cellular, Cal North Cellular, and Verizon. Fiber-optic service is not available.

3.9.5 PUBLIC HEALTH AND SAFETY

LAW ENFORCEMENT

The County of Del Norte Sheriff's Department currently provides general public safety and law enforcement service to both sites. The Department has offices in Crescent City. A Tribal security force also serves the existing Elk Valley Casino and would continue to serve the proposed facility. The California Highway Patrol also provides law enforcement services in the area. California is a Public Law 280 state that allows for state criminal law enforcement jurisdiction on Trust lands; however, this jurisdiction does not include regulatory civil law authority. Depending on the crime (pursuant to Public Law 280), federal law enforcement may provide support in specified situations.

The Tribe's MOU with Del Norte County as restated in a letter from the Office of Sheriff/Coroner (**Appendix Y**) addresses the need for law enforcement services. The Tribe and Sheriff/Coroner would be parties to a proposed cross-deputization agreement. This agreement includes provisions for notification procedures, jurisdiction, and criminal prosecution.

FIRE PROTECTION

Within the Crescent City area there are two fire districts that are responsible for fire protection: Crescent City Volunteer Fire Department and Crescent Fire Protection District (CFPD). These districts focus primarily upon emergency response services (EMT) and structural fires, but also handle wildfires. The CFPD serves the study area. CFPD's headquarters and main station are located at 255 West Washington Boulevard in the City of Crescent City. There is also a

substation at 550 East Cooper Avenue in the City of Crescent City, and a 1,760 square foot facility at 175 Humboldt Road which is approximately 1 mile north of the Martin Ranch site. Response time to the area is approximately 4 to 5 minutes for both sites. CFPD is staffed by 1 chief, 1 part-time administrative position, and 30 volunteers. Fire apparatus include 2 fire engines and 2 tenders at the main station, 1 fire engine at the Cooper Avenue station, and 2 fire engines at the Humboldt Road station. A benefit assessment passed by voters will provide extra funding to replace 3 aging fire apparatus. The CFPD is capable of handling aircraft emergencies. Mutual aid agreements exist between these districts for backup in large multiple fire scenarios and for general emergencies (Wakefield, pers. comm., 2006).

The Elk Valley Rancheria has a long-standing agreement with the CFPD, which is renewed annually. The agreement specifies that the District shall provide, for a fee, fire suppression services, pre-fire planning, annual fire inspections, plan check approvals, and required fire permit processes. Uniform Fire Codes are followed. The Tribe's current MOU with the County also states that the CFPD shall provide fire protection to the Martin Ranch site. Currently the CFPD responds to 1 medical aid incident every 2-3 months (Wakefield, pers. comm., 2006).

EMERGENCY MEDICAL SERVICES

Sutter Coast Hospital in Crescent City, as well as the local fire districts, offer emergency medical services. Emergency Transport Services are provided by the North Coast Emergency Medical Services Association. There is one privately owned and operated ambulance service, Del Norte Ambulance Service in Crescent City, which provides countywide service. Because of the geographic isolation of the area, air transports are necessary for intensive care cases. Air transport is provided by the Cal-Ore air ambulance service, which provides service to hospitals in Eureka, Redding, Medford, San Francisco, and Santa Rosa.

3.10 OTHER VALUES

3.10.1 NOISE

Noise is defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) which is measured in decibels (dB), with 0 dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain. Since the human ear is sensitive to only those sounds that produce certain frequencies, an "A"-weighting is used to measure only those noises sensitive to the human ear. The weighting of the noise reading results in a single figure signified by the notation dBA.

NOISE EXPOSURE AND COMMUNITY NOISE

An individual's noise exposure is a measure of noise over a period of time. Noise level is a measure of noise at a given instant in time. However, community noise varies continuously over

a period of time with respect to the contributing sound sources of the community noise environment. What makes community noise constantly variable throughout a day is the addition of short-duration single-event noise sources such as aircraft flyovers, vehicle pass-bys, sirens, or similar sources, all of which are readily identifiable to the individual. These successive additions of sound to the community noise environment vary the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. Commonly used noise descriptors are summarized below:

L_{eq}: The equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The L_{eq} is the constant sound level, which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

L_{dn}: 24-hour day and night A-weighed noise exposure level, which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 PM and 7:00 AM is weighted (penalized) by adding 10 dB to take into account the greater annoyance of nighttime noises.

CNEL: Similar to the L_{dn}, the Community Noise Equivalent Level (CNEL) adds a 5 dB "penalty" for the evening hours between 7:00 PM and 10:00 PM in addition to a 10 dBA penalty between the hours of 10:00 PM and 7:00 AM.

A wide variation in individual thresholds of annoyance exists, and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called "ambient noise" level. The more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause adverse response.

SENSITIVE RECEPTORS AND EXISTING NOISE SOURCES

Some land uses are considered more sensitive to ambient noise levels than others. Noise level sensitivity is measured as a function of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities involved. Residential land uses are generally more sensitive to noise than commercial and industrial land uses.

Martin Ranch Site

The nearest sensitive noise receptors include four single-family residences along Roy Avenue and two homes adjacent to the southern boundary of the Martin Ranch site. A residential subdivision extends north from Roy Avenue for several blocks. No other sensitive receptors exist or are proposed in the vicinity of the Martin Ranch site.

Roadways within 1,000 feet of the Martin Ranch site include Highway 101, Humboldt Road, and Sandmine Road. Highway 101, a constant noise source, is located immediately west of the Martin Ranch parcel. The Del Norte County General Plan Noise Element provides noise contours based on traffic levels on Highway 101 near the Martin Ranch site. The document states that noise levels of 65 dBA extend from 217 feet to 283 feet from the near lane of the highway. However, these contours were based on 1974 and 1975 traffic levels. It is assumed that current noise levels equal or exceed 300 feet from the nearest lane of Highway 101 adjacent to the Martin Ranch site. Noise levels are assumed to be less than this at 300 feet from Humboldt Road due to the reduced traffic volumes. Noise contours for the county roads specified have not been engineered for the vicinity. The Del Norte County Airport, owned and operated by the County of Del Norte, is roughly two miles from the Martin Ranch site. Classified as a commercial airport, with regular scheduled flights from United Express, this airport services the entire Del Norte County area.

Enderts Beach Property

There are no substantial noise receptors or sources of noise at the Enderts Beach site other than the wave action of the Pacific Ocean.

DESCRIPTION OF THE AFFECTED ENVIRONMENT

During field reviews conducted by White Shield, Inc. on December 29, 1998, a calibrated noise meter equipped with an oscilloscope and frequency analyzer was used to take noise level readings at several locations within the Martin Ranch site in an attempt to establish the ambient noise level of the site. Noise level readings were taken between the hours of 11:00 AM and 3:30 PM at a place on the site where noise from roads would be greatest (Intersection of Highway 101 and Humboldt Road). Median and peak noise levels were recorded at the assessment location. During this evaluation, the ambient noise level of the site was between 42 and 65 dBA. Peaks of 70 to 72 dBA were recorded at this location.

REGULATORY ENVIRONMENT

Noise criteria used in this study include the Federal Highway Administration (FHWA) Noise Abatement Criteria for the assessment of noise consequences related to surface traffic. In addition, environmental consequences are also evaluated relative to the change in ambient noise conditions at existing noise-sensitive uses in the project vicinity which would result from the project. These criteria are discussed below.

Federal Noise Abatement Criteria

The Federal Highway Administration (FHWA) establishes Noise Abatement Criteria (NAC) for various land uses that have been categorized based upon activity. Land uses are categorized on the basis of their sensitivity to noise, as indicated in **Table 3-15**. The **Table 3-15** standards, which may be considered applicable to this project, would be the 67 dB Leq exterior noise level standard for Residences and Motels (Category B), and the 52 dB interior noise level standard applied to those same uses under Category E.

TABLE 3-15
FEDERAL NOISE ABATEMENT CRITERIA
[HOURLY A-WEIGHTED SOUND LEVEL--DECIBELS (DBA)]

Activity Category	Leq (h), dBA	Activity Category Description
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	---	Undeveloped Lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

SOURCE: Federal Highway Administration, 2002; Bollard and Brennan, 2002.

3.10.2 HAZARDOUS MATERIALS

A Phase I Environmental Site Assessment (ESA) of the Martin Ranch site was conducted in January of 2003 by AES in accordance with American Society for Testing and Materials (ASTM) Practice E 1527-00, and BIA guidelines (AES, 2003). The purpose of this ESA was to identify environmental conditions and hazardous materials involvement that may pose a material risk to human health or to the environment, or in any way affect the proposed use of the subject property. The Phase I ESA was performed in conformance with the scope and limitations of ASTM Standard Practice E 1527-97, which specifies the appropriate inquiry requirements for the

innocent landowner defense under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). As part of the Phase I ESA, AES reviewed a current aerial photograph and historic aerial photographs from 1993 and 1962. In addition, AES reviewed historic topographic maps from 1956 and 1952 and database listings for records of known storage tank sites and known sites of hazardous materials generation, storage, or contamination. AES also performed a subject property walkover site reconnaissance to investigate the potential for existing sources of contamination on or near the subject property.

Databases were searched for sites up to 1.5 miles from a point roughly equivalent to the center of the property (**Table 3-16**). No mapped sites were found on the subject site or within the search radius for any of the databases reviewed.

3.10.3 VISUAL RESOURCES

MARTIN RANCH SITE

Del Norte County has an abundance of visual resources. The Pacific Ocean, redwood forests, agricultural lands, historical buildings and the Smith and Klamath Rivers are just a few of the numerous scenic features. The Martin Ranch site is characterized as rural with upward sloping terrain containing pasture and wetlands in the western and central portions of the site. Forested areas are located along the steeper sloping eastern boundary, where the elevations are higher. The only structures on the site are a house, barn and storage building. The center and eastern portions of the site have an excellent view of the coastline and Pacific Ocean.

The project vicinity includes several structures or developments that are visible from the Martin Ranch site and visible to the public traveling north and south of the Martin Ranch site along Highway 101 and Humboldt Road/Enderts Beach Road. These include a residential subdivision immediately north of the site, a motel at the intersection of Highway 101 and Humboldt Road, two single-family residences immediately south of the site, and four advertising billboards. Two billboards are located on the Martin Ranch site on the east side of Highway 101, near its intersection with Humboldt Road, and two more are located on the east and west sides of the highway at the southernmost point of the Martin Ranch site. Of the two billboard signs located on the Martin Ranch site, one sign is lighted and approximately 28 feet wide and 14 feet high. The other sign is approximately 22 feet wide and 16 feet high.

From the junction of Highway 101 and Humboldt Road on a clear day, visitors headed south on Highway 101 are met with a pleasing view of the Martin Ranch pasture and the forested Rellim Ridge to the east. Only a couple of ranching outbuildings are visible at this point (**Figure 3-16**).

Northbound Highway 101 motorists coming off the Crescent Grade from Redwood National Park often focus on the ocean, bay, and City of Crescent City rather than Martin Ranch to the right.

TABLE 3-16
DATABASES SEARCHED IN PHASE I ENVIRONMENTAL SITE ASSESSMENT

Database	Type of Record	Agency
AWP	Annual Workplan Sites	CALEPA
CAL-SITES	Calsites Database (potential or confirmed releases)	CADTSC
CHMIRS	California Hazardous Material Incident Report System	OES
CA BOND EXP.	California Bond Expenditure Plan for cleanup bonds	CADHS
CA WDS	Waste Discharge System	SWRCB
CLEANERS	Drycleaners Facilities	CADTSC
NPL	National Priority List	USEPA
PNPL	Proposed NPL	USEPA
NPLSB	NPL Site Boundaries	USEPA
DNPL	Delisted NPL	USEPA
NPL LIENS	Federal Superfund Liens	USEPA
NOTIFY 65	Prop 65 Records (releases that could affect water)	SWRCB
CORRACTS[1]	RCRA[2] Corrective Actions	USEPA
BRS	Biennial Reporting System for collection/generation	USEPA
RICRIS	Sites that make, transport, store, treat, etc. per RCRA	USEPA
CONSENT	Superfund Consent Decrees (CERCLA)	USEPA
CERCLIS[3]	Potentially hazardous sites reported per CERCLA	USEPA
ROD	Records of Decision	USEPA
FINDS	Facility Index System/Identification Program Report	USEPA
FTTS	FIFRA/TSCA Tracking System	USEPA
FTTS INSP	FIFRA/TSCA Tracking System	USEPA
CERCLISNFRAP[4]	Sites currently or formerly under review by USEPA	USEPA
LUST	Leaking Underground Storage Tanks	STATE
HAZNET	Hazardous Waste Information System	CALEPA
HMIRS	Hazardous Materials Information Reporting System	USDOT
MLTS	Material Licensing Tracking System	USNRC
MINES	Mines Master Index File	USDOL
PADS	PCB Activity Data Base System	USEPA
RAATS	RCRA Administrative Action Tracking System	USEPA
SWLF	Solid waste landfills/incinerators/transfer stations	STATE
CORTESE[5]	State index of properties with hazardous waste	STATE
TOXIC PITS	Toxic pits cleanup facilities	STATE
TRIS	Toxic Release Inventory Database	USEPA
TSCA	TSCA identifies manufacturers/importers of chemicals	USEPA
ERNS	Emergency Response Notification System of spills	USEPA
SWIS	Solid Waste Information System	ISWMB
SPILLS	State spills list	STATE
UST/AST	Registered underground or aboveground storage tanks	STATE/COUNTY
CA FID UST	Facility Inventory Database	CALEPA
HIST UST	Hazardous Substances Storage Container Data Base	SWRCB
WMUDS/SWAT	Waste Management Unit Database	SWRCB

NOTES: [1]CORRACTS: Corrective Action Report System, a USEPA database of corrective actions taken at a RCRA regulated site (also known as CARS).
[2]RCRA: Resource Conservation and Recovery Act.
[3]CERCLIS: Comprehensive Environmental Response, Compensation and Liability Information System.
[4]NFRAP: No Further Remedial Action Planned (archived CERCLIS sites).
[5]CORTESE: Based on input from 14 state databases.
SOURCE: Environmental Data Management, 2002.

Insert Figure 3-16

Views of several agricultural properties along Highway 101 and in the vicinity of the Martin Ranch Site consist of brush and trees at the property boundaries, which limit extensive views of the properties from the Highway.

The site is also visible from residences in the subdivision along Roy Avenue and the strip of property that fronts the northern end of the Martin Ranch Property. Rellim Ridge, the spruce knob, riparian strip, pasture, and barn are visible from vantage points along Roy Avenue east of its intersection with Enderts Street in the northern subdivision (**Figure 3-16**).

The area from Crescent City to Redwood National Park south of the site is identified in the visual resource inventory contained within the Del Norte County Coastal Element (LCP) of the General Plan (1983). The segment of Highway 101 that borders the Martin Ranch site is also included within a designated view corridor. The relevant discussion from the LCP pertains mostly to views of the ocean from Highway 101. The upland areas west of Highway 101 are not identified as a scenic resource.

The segment of Highway 101 from the south boundary of Redwoods State Park to the north boundary near the Martin Ranch site is an officially designated State Scenic Highway.

ENDERTS BEACH PROPERTY

The Enderts Beach site is not visible from Highway 101. Heavy forest and underbrush obscure the site from Enderts Beach Road and the Redwood National Park beach access point.

3.10.4 NIGHTTIME CONDITIONS

MARTIN RANCH SITE

Nighttime light conditions are consistent with typical rural residential areas.

ENDERTS BEACH PROPERTY

Nighttime light conditions are consistent with undeveloped park quality lands.