

# Chapter 3: Affected Environment

## 3.1 INTRODUCTION

This chapter describes the existing physical, biological, cultural, and social environment in the project area and vicinity. It describes the existing conditions of resources that may be affected by the project alternatives if they were implemented. These resource conditions represent the baseline information on which environmental consequences of the alternatives are evaluated in chapter 4.

The chapter is organized by resource categories: physical, biological, cultural, and social. Individual resources within each category are described under these headings. Each resource discussion includes a description of the resource area with background on how the resource is related to the proposed project, a general overview of relevant regulatory requirements pertaining to the resource, where applicable, and a discussion of the conditions of the resource within the project vicinity.

The *project area* (figure 3.1) encompasses the locale between the existing Cattle Point Road alignment (alternative A) and the three action alternative alignments (B, C, and D). The



**Figure 3.1 - Project area and project vicinity**

western edge of the project begins near MP 7.9 in the San Juan Island National Historical Park (park) and proceeds east for approximately 5,200 feet, ending near MP 8.4 in the Cattle Point NRCA, close to the intersection of the NRCA trail and the existing Cattle Point Road. The southern edge of the project area is bounded by the existing road alignment, and the northern

edge is located on the ridgeline of Mt. Finlayson, approximately 150 feet up-slope from the existing road. The *project vicinity* includes the entire Cattle Point peninsula, from the north and west boundaries of the American Camp Unit of the SJINHP to the tip of Cape San Juan.

The areas described above comprise the baseline project area and project vicinity. The spatial scope of the resource analysis may be larger, depending on the geographic area of potential impacts for the individual resource of concern. Thus, the area of impact may differ from resource to resource. Any differences in area of impact will be clarified in the resource descriptions and the environmental consequences section.

## 3.2 PHYSICAL ENVIRONMENT

### 3.2.1 Topography

Cattle Point is situated on the southeastern tip of San Juan Island. The area is characterized by low rolling hills with the highest point on Mt. Finlayson at 295 feet. The Cattle Point peninsula consists of prairie grassland to the south, with mixed coniferous and deciduous forest located to the north of the Mt. Finlayson ridge. The point is bounded on the south by the ocean waters of the Strait of Juan de Fuca, which separates San Juan Island from the Olympic Peninsula. The southern shoreline consists of long gravel beaches broken by rock outcroppings and protected sandy coves. The northern shoreline of Cattle Point is located on Griffin Bay. This area consists of long gravel beaches as well as three temperate marine lagoons (NPS 2008).

The project area has a southerly aspect, with slopes varying from 0 to 38 degrees and elevations ranging from 140 feet near the existing road to 295 feet at the summit of Mt. Finlayson. The topography in the project area is dominated by two undulating benches and the flat ridgeline of Mt. Finlayson.

### 3.2.2 Geology and Soils

The geology of the San Juan Islands and Puget Sound has been heavily influenced by glacial processes and plate tectonics. In recent ice ages, the area was covered with ice over one mile in depth. As the glaciers retreated, large quantities of glacial sediments were deposited while the land also rose in the glacial rebound process. At certain times during glacial retreat (theorized to be when glacial rebound matched sea level change), wave-cut benches were created on the slopes of Mt. Finlayson. These benches remain visible in the project area in the form of two to three slope breaks between the ridgeline and the coastal bluff. The open grassland and intact natural topography make the area a prime example of the benches resulting from this process (figure 3.2).

San Juan Island is located in close proximity to the convergence zone of two major tectonic plates, the Juan de Fuca Plate and the North American Plate. Deep-seated, major tectonic events of magnitude 7 or greater are possible along tectonic plate boundaries, and evidence from studies in Japan and on the coasts of Oregon and Washington indicate that a seismic event of this magnitude may have occurred off the Oregon-Washington coast as recently as 300 years ago. Seismic activity also occurs on shallower, near-surface faults in northwestern Washington; however, no active faults are known to be located in the greater project area and no historical earthquakes are known to have occurred in the area of Cattle Point (WFLHD 2005).

Cattle Point is characterized by substantial depths of glacially deposited sand and gravel overlying bedrock. Glacial soils occupy most of the project area. Soils associated with the



*Figure 3.2 - Bench areas on south side of Mt. Finlayson*

prairie and slopes of Mt. Finlayson are of the same type, are somewhat excessively drained, and contain occasional boulders. Depending on slope, runoff can be low to very low (NPS 2008).

No bedrock outcrops occur within the proposed project area, but an outcrop of bedrock is visible on the beach below and to the east of the project area. If bedrock is present in the project area, it is likely to be similar to bedrock exposed along the shoreline near the eastern tip of the island, which consists of a variety of metamorphosed sedimentary and volcanic rocks (WFLHD 2005).

Three subsurface exploration borings ranging from 70 to 150 feet in depth were performed along the existing road as a part of previous investigations for the project. These borings were located on the existing road near the base of Mt. Finlayson (WFLHD 2005). All three subsurface borings encountered gravelly and silty sand at all depths. Two water well borings were drilled in the vicinity of the project by the Cape San Juan Water District in 1965. One of the water wells encountered bedrock at a depth of 58 feet. Bedrock was not encountered in the other water well boring, drilled to a depth of 282 feet (Milbor-Pita 2001).

#### Bluff Retreat Rate

The need for the project is driven by the erosion of the shoreline and bluff and the potential impacts the erosion could have on the Cattle Point Road. A section of road approximately 500 feet in length is located less than 70 feet from the edge of the eroding bluff. The area immediately south of this section of roadway slopes variably to a steep bluff edge then drops steeply to the shoreline of the Strait of Juan de Fuca, approximately 150 feet below (figure 3.3).



*Figure 3.3 - Roadway at the eroding bluff*

Studies have been conducted to better understand the bluff erosion process. An erosion study commissioned by San Juan County was completed by Landau Associates in 2002. Another study of bluff erosion was conducted independently by Lindsey Baumann in May of 2002. This study was performed as a research project for undergraduate studies at the University of Montana.

Both the Landau and Baumann studies identify coastal wave action as the main cause of erosion at the toe of the slope. Wave cutting processes are generally highest in the winter months particularly when large storm waves and high tides coincide (Landau 2002). Wave action cuts steep scarps at the bluff toe, which leads to translational/progressive failure of the soils on the slope above, and ultimately failure of the bluff top (Landau 2002). Wind erosion (particularly under dry conditions) also contributes to slope instability. Due to the high permeability of the soils, little erosion is attributed to surface water because most precipitation infiltrates into the soil. Human foot traffic was also cited as a contributor to slope instability at the top of the bluff (Landau 2002).

Using aerial photographs taken in 1970, 1980, and 2001, Landau Associates measured the rate of retreat at both the toe and top of the bluff in eight locations within the area where the road is located closest to the bluff. During the 31-year period, the bluff toe retreated between 85 and 100 feet and the bluff top retreated 35 to 50 feet. Using these measurements, Landau calculated that the rate of retreat at the toe of the bluff averaged 3.2 feet per year and the rate of retreat at the top of the bluff averaged 1.3 feet per year. Error due to differences in scale and difficulty in clearly identifying the edges of the bluff was estimated to be less than 10 percent. The study

measured the closest point of the road to the bluff edge at about 50 feet. However, it was assumed that because of the over-steepened nature of the slope, the amount of bluff retreat that could occur without endangering the road was less than 20 feet. Based on 20 feet of additional allowable bluff retreat and a retreat rate of 3.2 feet per year, the study concluded that the life expectancy of this section of road was approximately 6 years. This prediction has not proven to be accurate.

The Baumann study measured the rate of retreat at the top of the slope from 60 reference points located in the area where the roadway is closest to the bluff. Measurements taken from April 2001 to April 2002 showed that the rate of retreat at these sites ranged from 0 to 40 inches. From this information, the average rate of retreat at the top of the bluff was calculated at 1.3 feet per year, which corresponds with the Landau Associates' findings. Baumann stated that a more comprehensive study of the rate of erosion would need to be conducted over a period of several years in order to draw long-range conclusions regarding bluff erosion rates. Since the conclusion of Bauman's formal study in 2002, the Cattle Point Home Owners Association has continued to monitor and measure the reference points using the study protocol. Table 3.1 presents the measurements taken in 2001, 2002, 2003, 2004 and 2009, and shows the distance between the road guard rail and the edge of the bluff. The last measurements were reported in September 2009. The average erosion rate at each stake for the period between 2001 and 2009 is shown in the far right column.

*Table 3.1 – Bluff erosion from guard rail to edge of bluff scarp.*

Reference Stake	Guard Rail to Edge of Bluff Scarp (feet)						Total erosion 2001-2009	Annual erosion rate
	4/28/2001	1/21/2002	1/3/2003	2/7/2004	12/30/2004	9/15/2009		
1	69.6	68.8	67.5	66.8	66.1	66.1	3.5	0.4
2	65.6	63.3	63.2	62.5	62.4	62.4	3.2	0.4
3	61.9	60.4	58.8	58.8	58.5	58.1	3.8	0.5
4	61.0	59.0	57.3	57.0	56.9	56.2	4.8	0.6
5	59.6	57.9	56.1	55.9	55.9	55.3	4.3	0.5
6	57.3	56.7	55.4	55.6	55.5	52.8	4.5	0.6
7	57.8	56.8	56.4	56.2	56.2	54.3	3.5	0.4
8	56.0	55.8	53.2	53.2	53.2	52.7	3.3	0.4
9	55.4	54.0	52.7	52.0	51.5	50.0	5.4	0.7
10	54.9	54.6	52.9	51.9	51.9	51.6	3.3	0.4
11	51.3	50.9	49.2	49.6	49.3	46.3	5.0	0.6
12	48.8	48.8	47.8	47.7	46.8	41.3	7.5	0.9
13	48.0	46.5	45.3	45.2	45.0	38.1	9.9	1.2
14	46.9	45.4	45.8	44.9	44.9	37.8	9.1	1.1
15	43.8	43.0	42.4	42.2	42.2	35.1	8.7	1.1
16	41.4	40.2	40.1	39.5	39.5	32.0	9.4	1.2
17	41.0	40.6	39.4	39.5	39.5	32.0	9.0	1.1
18	39.8	38.1	37.5	37.1	37.1	32.8	7.0	0.9
19	39.3	38.2	38.4	37.5	36.8	33.9	5.4	0.7
20	38.5	37.5	37.6	36.5	36.5	31.4	7.1	0.9
21	41.1	40.3	40.3	39.4	38.9	31.2	9.9	1.2
22	42.5	41.5	40.9	40.9	40.9	33.9	8.6	1.1

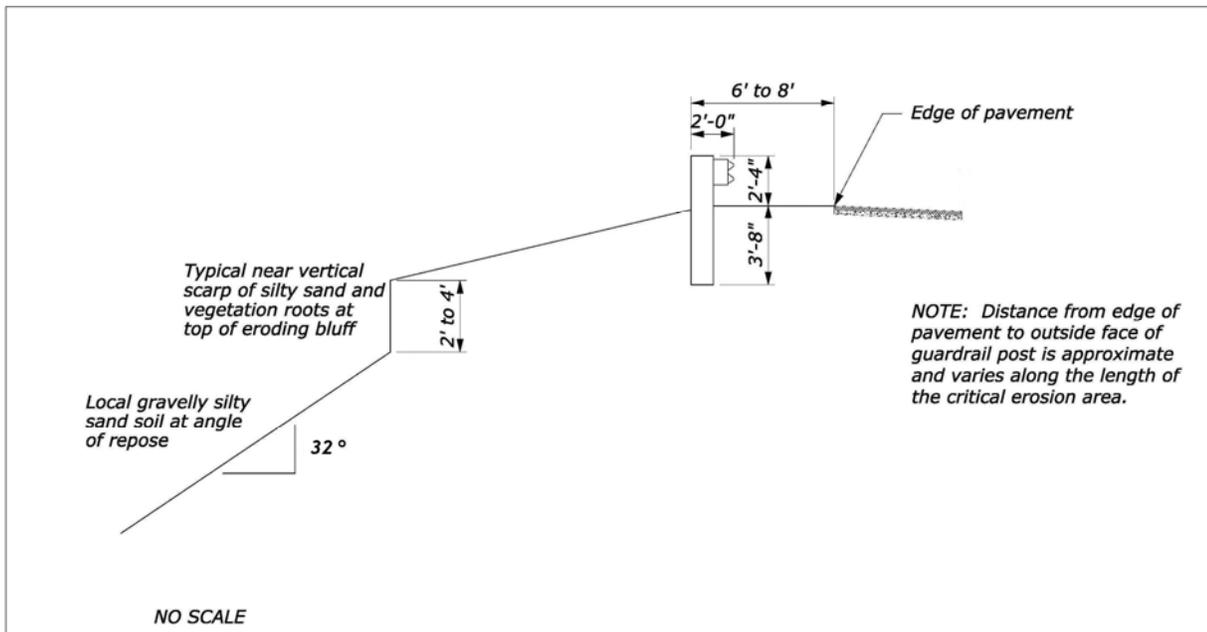
Reference Stake	Guard Rail to Edge of Bluff Scarp (feet)						Total erosion 2001-2009	Annual erosion rate
	4/28/2001	1/21/2002	1/3/2003	2/7/2004	12/30/2004	9/15/2009		
23	44.5	43.2	43.2	43.2	43.2	35.6	8.9	1.1
24	44.8	44.0	43.8	43.1	43.1	35.6	9.2	1.2
25	44.9	44.1	43.6	42.7	42.1	33.7	11.2	1.4
26	46.2	43.9	42.7	41.0	39.7	32.4	13.8	1.7
27	45.3	44.1	43.3	42.3	41.3	34.8	10.5	1.3
28	44.8	43.4	42.7	40.1	40.1	34.9	9.9	1.2
29	44.2	43.6	42.1	42.1	40.1	35.8	8.4	1.0
30	45.3	43.5	43.5	43.1	41.5	34.3	11.0	1.4
31	44.1	43.2	41.8	42.0	40.3	32.8	11.3	1.4
32	41.7	40.7	39.8	39.8	38.8	33.1	8.6	1.1
33	43.3	41.5	38.4	38.0	38.0	33.2	10.1	1.3
34	48.3	46.2	43.7	43.1	41.8	35.4	12.9	1.6
35	45.4	44.9	44.4	44.3	43.5	37.0	8.4	1.0
36	45.5	45.4	44.8	44.7	44.3	38.3	7.2	0.9
37	45.1	45.1	42.8	42.8	42.8	39.4	5.7	0.7
38	47.2	47.0	45.8	45.5	45.3	38.3	8.9	1.1
39	49.3	48.8	48.8	48.0	47.2	41.9	7.4	0.9
40	49.5	48.6	48.5	48.5	48.5	42.3	7.2	0.9
41	49.3	47.8	47.1	46.8	46.7	43.8	5.5	0.7
42	49.2	46.8	47.3	47.2	47.1	44.9	4.3	0.5
43	52.1	50.5	48.6	48.1	48.1	43.7	8.4	1.0
44	53.4	52.6	51.8	51.0	51.0	46.0	7.4	0.9
45	55.2	54.7	54.1	53.2	51.8	49.7	5.5	0.7
46	56.2	54.5	54.6	54.2	52.8	51.1	5.1	0.6
47	57.3	55.3	55.1	54.2	54.2	51.8	5.5	0.7
48	58.8	57.2	56.6	55.2	54.0	53.2	5.6	0.7
49	60.0	57.9	55.5	55.0	54.3	53.2	6.8	0.8
50	62.5	59.3	57.5	56.4	55.5	55.3	7.2	0.9
51	63.0	61.1	59.5	59.1	59.1	55.7	7.3	0.9
52	63.0	61.5	60.7	60.0	60.0	57.6	5.4	0.7
53	62.4	61.8	59.5	60.1	58.7	54.9	7.5	0.9
54	63.3	62.4	61.0	58.8	58.4	55.6	7.7	1.0
55	65.4	62.0	58.3	58.6	58.0	56.3	9.1	1.1
56	64.9	62.1	62.2	59.2	58.8	57.7	7.2	0.9
57	62.7	62.0	61.6	60.0	59.8	59.1	3.6	0.4
58	63.3	63.3	62.5	61.0	60.3	58.3	5.0	0.6
59	63.2	62.8	62.8	61.2	61.2	55.8	7.4	0.9
60	64.9	64.8	64.4	64.3	62.5	59.8	5.1	0.6

FHWA calculations of bluff erosion rate and timing are based on data at stake 26 (Baumann study). Within the Baumann study area, stake 26 was the third-closest as measured from the guardrail to the bluff in September 2009, and had the highest average annual erosion rate and total erosion from 2001 to 2009 (table 3.1).

Baseline criteria used to estimate bluff erosion rate:

- Average bluff erosion rate is 1.7 feet per year slope distance at stake 26. Upper slope angle is 20 degrees, which is 1V:2.75H.
- Angle of repose of eroding slope is 32 degrees.
- Height of bluff scarp is 4 feet.
- Reference data date is September 15, 2009 (latest reported Baumann study area measurements). At that time the distance from bluff scarp to guardrail was 32.4 feet slope-distance. The location on the guardrail where the measurement was made is unknown, top of guardrail is assumed.
- On September 15, 2012 the scaled distance from bluff scarp to base of guardrail post is 31.2 feet slope distance.
- Because of the load-bearing characteristics and frictional properties of the underlying gravelly silty sand on which the road is located, under normal conditions the slope would not experience a global failure (NPS 2001b, Malcolm Ulrich, FHWA geotechnical engineer, personal communication 2009).
- AASHTO Roadside Design Guide states that a minimum 2-foot embankment width from the outside face of guardrail post is adequate for post support and guardrail function (AASHTO 2006).

At an average erosion rate of 1.7 feet per year, FHWA calculates that the bluff scarp at stake 26 would reach a point 2 feet horizontal-distance from the outside face of the guardrail post in about 14 years from present (i.e. 2026). The guardrail post is about 6 to 8 feet from the striped edge of roadway pavement (figure 3.4).



**Figure 3.4 – Relative location of the road, guardrail, bluff edge, and angle of repose.**

Because of the load-bearing characteristics of the foundation soils on which the road is located, it is interpreted that the roadway would remain stable at the time when the bluff scarp progresses to within 2 feet of the outside face of the guardrail post. It is expected that bluff erosion would continue progressively, eventually causing roadway damage and closure.

Given the variable erosion rates in the critical bluff area and the unpredictable environmental factors that affect erosion rates, it is extremely difficult to quantify when progressive erosion would cause roadway failure.

The FHWA and NPS have determined that the data from which the erosion rate has been derived is appropriate for use in this document considering the time frame, information, and technology available.

### 3.2.3 Air Quality

Air quality is regulated by the U.S. Environmental Protection Agency (EPA) and Washington State Department of Ecology (WDOE) through authority of the Clean Air Act of 1970. The EPA has established National Ambient Air Quality Standards (NAAQS) to protect the health and welfare of the public for six criteria pollutants established under the Clean Air Act. These pollutants are carbon monoxide, ozone, nitrogen oxides, sulfur dioxide, lead, and fine particulate matter.

The Clean Air Act requires that land managers protect air quality to meet all federal, state, and local pollution standards. It prohibits federal entities from taking actions in nonattainment or maintenance areas which do not conform to the state implementation plan for the attainment and maintenance of NAAQS. In 1993, the EPA established criteria and procedures for determining if transportation plans, programs, and projects funded under the Federal Transit Act conform to the state implementation plan (SIP).

The EPA Air Data website ([www.epa.gov/air/data/index.html](http://www.epa.gov/air/data/index.html)) shows that the proposed project is in an attainment area for the six NAAQS criteria pollutants. Because of this, the SIP does not include transportation control measures, and conformity procedures do not apply to this project.

The park area has been designated a Class II area under the Clean Air Act (NPS 2008). Class II areas allow only moderate increases in ambient air pollution over the park.

Air quality in the Pacific Northwest region is good compared with other areas of the United States (Eilers, Rose, and Sullivan 1994 in NPS 2008). Winds regularly deliver clean moist air from the atmosphere over the Pacific Ocean through the Strait of Juan de Fuca, mixing with local air masses and dispersing air pollution (Puget Sound Clean Air Agency 2003). Nearby particulate monitoring stations at Oak Harbor, Anacortes, and Mt. Vernon show no danger of exceeding ambient air quality standards (Franzmann 2003).

### **3.2.4 Water Resources**

#### **3.2.4.1 Floodplains, Wetlands, and Waterbodies**

Floodplains are regulated under Executive Order 11988 (*Floodplain Management*), which requires the assessment of impacts and the potential risks involved in placing facilities within floodplains. The order directs that the long and short-term adverse impacts associated with the occupancy and modification of floodplains be avoided wherever there is a practicable alternative.

Wetlands are regulated under the Clean Water Act (33 USC 1344) and Executive Order 11990 (*Protection of Wetlands*). These regulations direct that long and short-term adverse impacts associated with the destruction or modification of wetlands and direct or indirect support of new construction in wetlands be avoided wherever there is a practicable alternative. In addition, the NPS 2006 *Management Policies* require preservation and no net loss of wetlands.

There are no streams or other waterbodies present in the project area. The nearest waterbody is the saltwater shoreline at the base of the eroding bluff. At its closest, the shoreline is approximately 200 feet down-slope from the project area (Biological Report 2006).

Although many small springs support wetland areas within American Camp, there are no mapped springs and there is no evidence that springs exist within the project area. The closest mapped spring is 0.2 miles southwest of the western end of the project area. A 1998 wetlands survey performed by the NPS found that there are no wetlands or floodplains (as defined in the NPS floodplain management guides) present in the project vicinity (Holmes 1998).

Three temperate marine lagoons, Old Town, Jakle's, and Third, are located adjacent to the shoreline on the north side of American Camp (figure 3.5). The closest (Third Lagoon) is located about 2,500 feet northwest of the project area. Because they are rare to the Pacific Northwest coast, these lagoons represent valuable ecological resources and are an important natural resource of the park and NRCA (Flora and Sharrow 1992 in NPS 2008). Jakle's Lagoon, the largest body of surface water in the park, has been designated as an Environmental Study Area by the University of Washington.

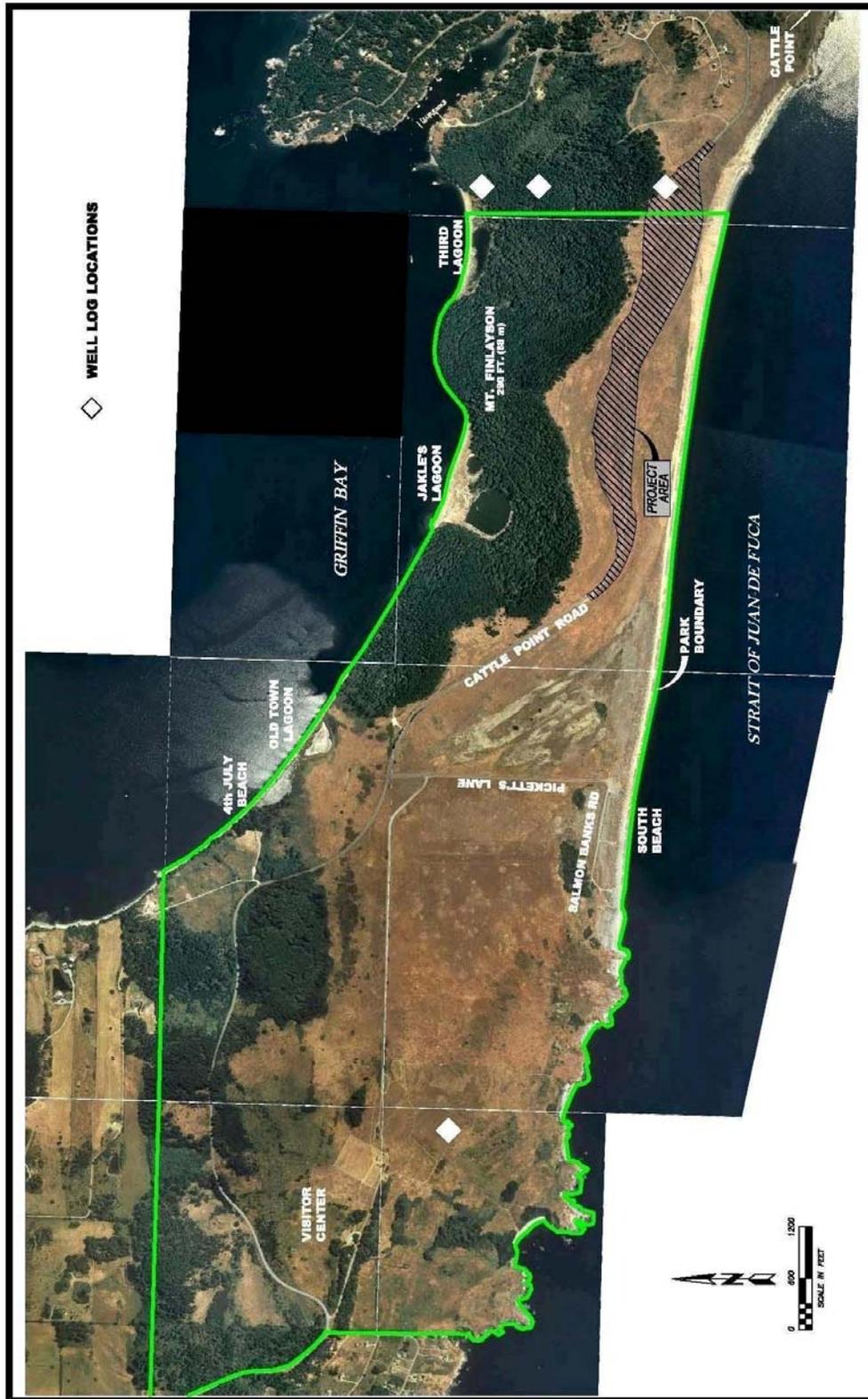


Figure 3.5 - Temperate marine lagoon locations and well log locations

### 3.2.4.2 Hydrology

With the growing population and dependence on glacial-deposit and bedrock aquifers in the San Juan Islands, there is growing concern about the quality and availability of ground water. For residents of Cattle Point, potable water is a critical resource. Residents depend on a well system that is fed by water from an aquifer under Mt. Finlayson; consequently, concerns have been raised over potential impacts to the aquifer from the proposed Cattle Point Road project. The aquifer is accessed by a system of three wells located on the east flank of Mt. Finlayson (figure 3.5). The well system is managed by the Cape San Juan Water District (CSJWD). In 1998, the CSJWD wells provided household water to 110 connections serving approximately 150 full-time and 50 part-time residents (CSJWD 1998). CSJWD well number 3 is located within the project area.

CSJWD adopted a Wellhead Protection Plan in April 1998. According to the plan, the sediments in which the three wells are located are a succession of porous and permeable, poorly sorted unconsolidated sands, silts, and gravels. Well logs found no confining units of clay above the static water level, which allows for rainwater to percolate freely down to the water table without significant restriction. The downward percolation results in an extended natural filtration occurring through 77 feet of sand in the shallowest well and up to 264 feet in the deepest well. The static water level of CSJWD well number 3 is at a depth of about 264 feet (CSJWD 1998).

Groundwater recharge results from local precipitation infiltration. The drainage divide at the Mt. Finlayson ridge separates the project area, where water flows toward the Strait of Juan de Fuca, from the north side of the ridge where water flows toward Griffin Bay (figure 3.6). A key issue in assessing groundwater availability is to determine the amount of recharge to the aquifers from precipitation. Most recharge occurs between September and April (NPS 1998). Precipitation averages about 22 inches per year at American Camp, and the recharge potential is described as relatively high (NPS 1998). A recent U.S. Geological Survey study on recharge in the San Juan Islands found that average island-wide recharge is most closely related to the amount of area overlain by glacial deposits. Cattle Point is overlain by large glacial deposits, therefore the recharge potential locally is likely to be high (Orr et al. 2002).

The drainage divide at the Mt. Finlayson ridge separates the project area, where water flows toward the Strait of Juan de Fuca, from the north side of the ridge where water flows toward Griffin Bay. CSJWD wells 1 and 2 are located on the north side of the Mt. Finlayson ridge, while well number 3 is located on the south side of the ridge.

The drainage basin in which the project area is located is small and relatively undeveloped. The basin lies entirely within NPS and DNR property. A drainage basin is an area of land where water from rain and snow-melt drains down-slope into a body of water. The drainage basin includes streams and rivers that convey water as well as the land surface from which water drains into the channels, and is separated from adjacent basins by a hydrologic divide. There are no streams or other waterbodies within the drainage basin to the south of the Mt. Finlayson ridge. Water falling within the basin either flows overland into the ocean, seeps into the soil, or evaporates. Cattle Point Road is the only road or structure within the drainage basin.

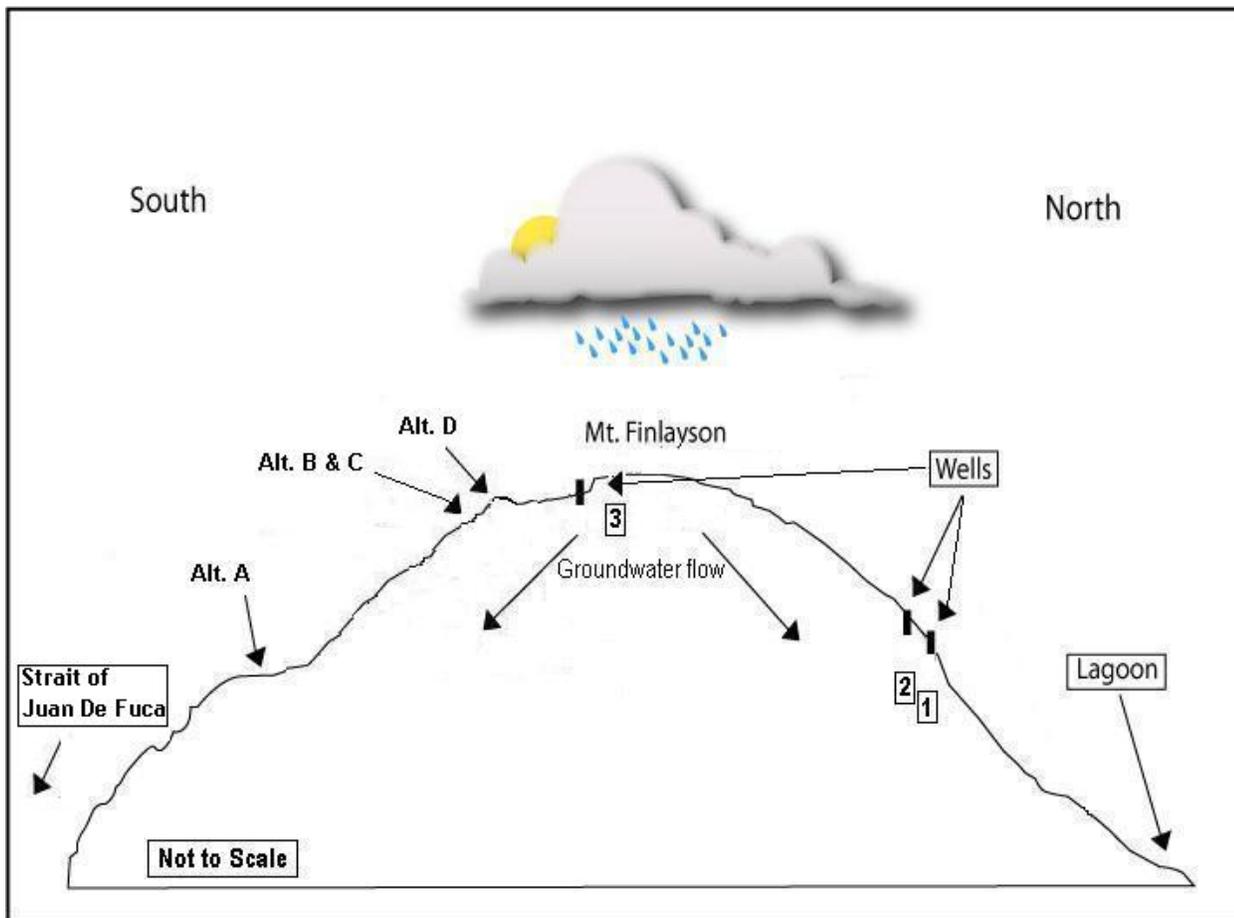


Figure 3.6 – Conceptual cross section of Mt. Finlayson groundwater flow and water resources

### 3.2.4.3 Water Quality

Water quality is regulated by the EPA and U.S. Army Corps of Engineers through authority of the Clean Water Act. The Act uses several regulatory tools to reduce pollutant discharges into waterways and wetlands. The National Pollutant Discharge Elimination System (NPDES) permit applies to construction projects that disturb over 1 acre of land. This permit requires the implementation of a Storm Water Pollution Prevention Plan (SWPPP) to control erosion and the discharge of sediment from construction projects into waterways. The 404 permit is required for discharge of fill material into wetlands and waters of the U.S.

Overall, water quality in the region of San Juan Island Historical Park, including Cattle Point, is relatively high. Marine waters surrounding the islands are rated class AA by the state (Garland 1996 in NPS 2008). Class AA waters have all beneficial uses to a high degree. Beneficial uses include water supply; fish and shellfish spawning, rearing, migration, and harvesting; wildlife habitat; recreation; and navigation. Class AA waters have the highest water quality standards ([www.crcwater.org/onalaska/waterquality](http://www.crcwater.org/onalaska/waterquality)).

A 2006 NPS report assessed the coastal resources and watersheds in the park. The report lists potential problems with water resources in the Strait of Juan de Fuca near American Camp from toxic compounds (due to potential for fuel/oil spills), water withdrawals, coastal erosion, and marine debris. The report identifies the Cattle Point Road project and recommends making efforts to reduce the impacts of any road-building activities on the near-shore environment.

The Safe Drinking Water Act (SDWA) (42 U.S.C. 300f) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and ground water wells. The SDWA requires that every state develop a wellhead protection program. In Washington, the Department of Health (DOH) administers the wellhead protection program. Washington's wellhead protection requirements are designed to prevent contamination of groundwater used for drinking water. Public water systems work with local governments and regulatory agencies to develop and implement their own local wellhead protection programs (DOH 2010).

CSJWD adopted a Wellhead Protection Plan in 1998. The plan outlines wellhead protection areas surrounding each of its three wellheads located on Mt. Finlayson. A wellhead protection area is the surface and subsurface around a well through which contaminants are likely to pass to reach the drinking water source. It is the area a community or water system manages to protect groundwater-based drinking water supplies from contamination. The wellhead protection area has three zones; 1-year, 5-year, and 10-year. Each zone represents the hypothetical amount of time it would take a particle of water traveling in the aquifer to reach the well (DOH 2010). For CSJWD well number 3 the 1-year protection boundary (known as zone 1) extends in a 125-foot radius around the wellhead, the 5-year boundary (zone 2) extends 279 feet, and the 10-year boundary (zone 3) extends 395 feet (CSJWD 1998). CSJWD well number 3 and its wellhead protection area fall within the project area (figure 3.5). Procedures in the Washington State Wellhead Protection Program Guidance Document (DOH 2010) advise that the community plan and site future high risk and medium risk contamination sources outside of wellhead protection areas. Potential short-term contaminant sources associated with road construction include hazardous (petroleum products) and non-hazardous material storage, waste storage, material stockpiles, and transportation of materials. Potential long-term contaminant sources associated with road operations include de-icing salts and storage, and urban runoff (DOH 2010).

### **3.2.5 Visual Quality**

The San Juan Islands are well known for their beauty, rural landscape character, and slower pace of life. American Camp has the longest undeveloped stretch of beach on the island (NPS 2008).

The project area is located on the south slope of Mt. Finlayson. The slope consists of an ancient prairie, which lies between the coastal bluffs and the summit. The setting of the road on an open grassland and elevated hillside offers outstanding views to Mount Baker, the Cascade Mountains, the Olympic Mountains, Mt. Rainier, the Strait of Juan de Fuca, Vancouver Island, and other islands. The views become more expansive up the slope to the top of Mt. Finlayson, which is 295 feet in elevation. The scenery changes dramatically on the north slope of Mt. Finlayson. The north slope is covered by a large expanse of dense, mature forest vegetation and offers limited scenic views.

The visual resources of the project area include views from the Cattle Point Road as well as the view of the road itself from areas throughout the park and NRCA. There are a number of other important view-sheds associated with the project area. These include the view from offshore, the beach, the air, the residential areas, and other important locations including those identified in the park's Cultural Landscape Inventory. View-sheds having cultural importance are discussed in Section 3.4.

The existing roadway has vegetated cut and fill slopes that serve to blend somewhat into the surrounding landscape. The road surface and guardrail create a visual impact to which area users have become accustomed. From other areas of Cattle Point including residences and surrounding waters, the road itself creates a minor interruption in the natural landscape, though this is somewhat masked by the vegetated cut and fill slopes. The black pavement and guardrail section is visible from certain eastern parts of the park (especially upslope) and the NRCA, including the trail system.



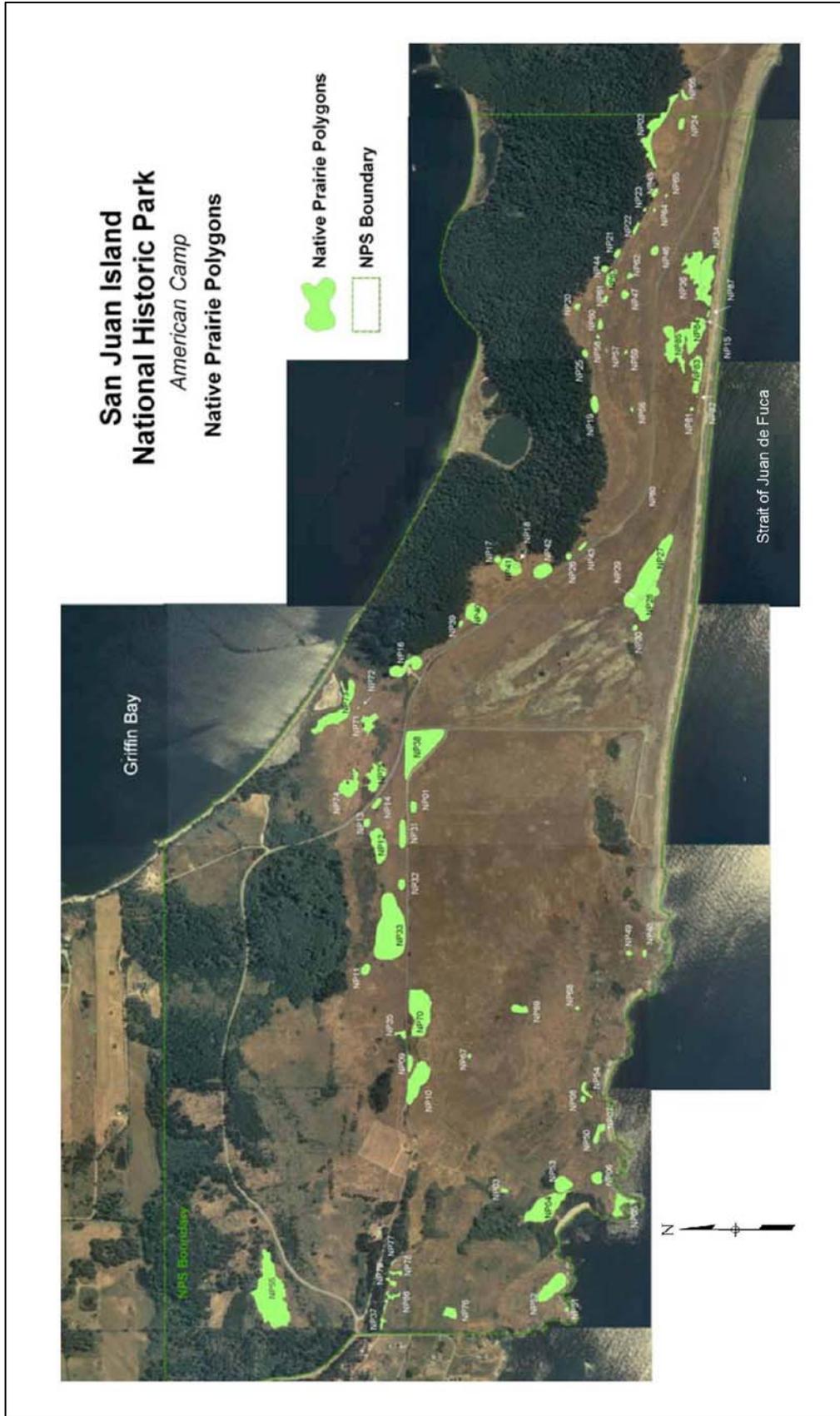
Figure 3.7 – Cattle Point Road setting and views

## 3.3 BIOLOGICAL ENVIRONMENT

### 3.3.1 Vegetation

Prairie vegetation is the dominant cover in the project area. It occupies the area from the coastal bluffs up to the south facing slopes of Mt. Finlayson (NPS 2008). Non-native species have invaded the prairie, but remnants of native grasses and wildflowers still exist (NPS 2005b)(figure 3.8).

Native vegetation is dominated by red fescue (*Festuca rubra*), Roemers' fescue (*Festuca idahoensis* var. *roemeri*), many-flowered wood-rush (*Luzula multiflora*), great camas (*Camassia leichtlinii*), field chickweed (*Cerastium arvense*), and western buttercup (*Ranunculus occidentalis*) (Lambert 2003 in NPS 2008). Much of the grassland has been altered from its pre-settlement condition and is now dominated by non-native vegetation. Non-native species include Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), and Himalayan blackberry (*Rubus discolor*). These species tend to form monocultures, decreasing the biodiversity of the prairie (NPS 2008).



**Figure 3.8 – American Camp native prairie polygons**

The park's vegetation management goals focus on restoring native vegetation without compromising the historic landscape. Due to the degraded state of the grassland, the park has begun a long term program to restore areas where possible, including those in the project area.

The north slopes of Mt. Finlayson are dominated by Douglas-fir (*Pseudotsuga menziesii*) and western hemlock (*Tsuga heterophylla*) combined with western red cedar (*Thuja plicata*), grand fir (*Abies grandis*), and lodgepole pine (*Pinus contora*). The understory includes evergreen salal (*Gaultheria shallon*) and western sword fern (*Polystichum munitum*) (NPS 2008).

### 3.3.2 Wildlife and Fish

Cattle Point is divided by the ridgeline of Mt. Finlayson. Exposed open grassland is located on the south slope, while the leeward north slope is forested. This creates two unique habitats with important fringe habitat along the ridgeline where wildlife species transition between forest and grassland.

Forest and grassland habitats in the vicinity of the project area are inhabited by a variety of mammals including the Columbian black-tailed deer (*Odocoileus hemionus*), the European rabbit (*Oryctolagus cuniculus*), and the red fox (*Vulpes vulpes*). The latter two species are non-native, and the rabbits have negatively affected the prairie ecosystem in the project area (NPS 2008). There are also numerous species of small mammals including mice, shrews, voles, and bats.

The presence of 93 species of birds has been confirmed in the park (NPS 2008). These include a variety of songbirds, shorebirds, seabirds, and waterfowl.

Commonly-seen birds in the project area include the savanna sparrow (*Passerculus sandwichensis*), spotted towhee (*Pipilo maculatus*), chestnut-backed chickadee (*Poecile rufescens*), western tanager (*Piranga ludoviciana*), northern flicker (*Colaptes auratus*), great-horned owl (*Bubo virginianus*), Pacific slope flycatcher (*Empidonax difficilis*), violet-green swallow (*Tachycineta thalassina*), dark-eyed junco (*Junco hyemalis*), red-breasted nuthatch (*Sitta canadensis*), brown creeper (*Certhia americana*), bald eagle (*Haliaeetus leucocephalus*), northern harrier (*Circus cyaneus*), and turkey vulture (*Cathartes aura*). Also present in the project area are crows and ravens, and a variety of hawk, sparrow, wren, finch, and warbler species. Ducks, loons, gulls, cormorants, oystercatchers, geese, and other birds frequent the project area or use the waters offshore (NPS 2008).

Two amphibian and two reptile species have been documented in the park, and an additional four amphibian and four reptile species are likely to be found in the park (NPS 2008). The Pacific chorus frog (*Pseudacris regilla*), the red-legged frog (*Rana aurora*), the northern alligator lizard (*Elgaria coerulea*), and the northwestern garter snake (*Thamnophis ordinoides*) have been observed in the park (NPS 2008). Amphibian species are primarily found in wetland and forest habitats of the island. While there are forested areas to the north, there are no wetlands or waterways within the project area.

A variety of butterflies, moths, snails, slugs, and other invertebrate species are also present in the Cattle Point area. Because of the presence of grassland and other habitats favorable to butterflies, species diversity near Cattle Point is high relative to most of western Washington, with more than 30 butterfly and moth species identified in the park (Pyle 2004).

Outside of the project area, the shoreline and offshore environments contain numerous species, ranging from shellfish to orcas, elephant seals, and other marine mammals.

The project area contains no rivers, streams, or other surface waterbodies; therefore no fish or aquatic organisms are found within the project area.

### 3.3.3 Federally-Listed Threatened, Endangered, and Protected Species

Species of plants and animals that are in serious decline on a national, state, or local level and which may be threatened with extinction are listed by the U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA) Fisheries Service (also known as the National Marine Fisheries Service [NMFS]), or the state of Washington as threatened or endangered.

Section 7 of the Federal Endangered Species Act (ESA) requires that federal agencies review all actions authorized, funded, or carried out by them to ensure that those actions do not jeopardize the continued existence of any federally-listed species or result in the destruction or adverse modification of critical habitat.

Under the ESA, the following designations have been established ([www.fws.gov/endangered/ESA/sec3.html](http://www.fws.gov/endangered/ESA/sec3.html)):

**Endangered:** An endangered species is determined to be in danger of extinction throughout all or a significant portion of its range.

**Threatened:** A threatened species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Information on ESA-listed species within San Juan County was obtained from the USFWS and NOAA websites and last updated on December 9, 2011.

Other applicable federal laws protecting wildlife in the project area include the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, and the Marine Mammal Protection Act.

The Migratory Bird Treaty Act (MBTA) of 1918 and later amendments, implements various treaties and conventions between the U.S. and Canada, Japan, Mexico, and Russia for the protection of migratory birds. Under the Act, it is unlawful to take, kill, or possess migratory birds. Migratory birds are those species that generally migrate each fall from breeding grounds to their wintering grounds. In the spring they return to their breeding grounds, where they have young and the cycle repeats. All native birds commonly found in the United States except native resident birds and introduced species are protected under the MBTA. A resident bird is one that does not make seasonal migrations.

The Bald and Golden Eagle Protection Act (BGEPA), enacted in 1940 and amended several times since then, prohibits anyone from taking eagles, including their parts, nests, or eggs. Among other actions, take includes disturbances that agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, 1) injury to an eagle; 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or 3) nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior ([www.fws.gov/pacific/eagle](http://www.fws.gov/pacific/eagle)).

The Marine Mammal Protection Act (MMPA), enacted in 1972, protects all marine mammals. Marine mammals are mammals that are well adapted for life in the marine environment. They include whales, dolphins, porpoises, seals, sea lions, and walrus. The MMPA prohibits the take of marine mammals in U.S. waters or by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S. Under the MMPA, take is

defined as harass, hunt, capture, kill, or collect, or to attempt to harass, hunt, capture, kill, or collect.

To compile the information gathered for use in this document and in the Biological Assessment, both a biological and a plant survey report were completed by the project consultant (Widener 2006a, 2006b). NPS and DNR staff was consulted regarding species and habitat presence in the project area and potential impacts of the proposed project to these species. The information in the 2006 reports was reviewed and updated in December 2011 to incorporate the latest updates to the federal and state threatened, endangered, candidate, and rare species lists.

Using the information obtained from surveys and reports, the proposed project area was evaluated to determine which listed threatened or endangered species might occur within the area of potential impacts. The evaluation was based on the presence of probable habitat types, biological requirements of the species, and known observations.

For terrestrial wildlife species, the area of potential impacts extends beyond the immediate project area to include areas which may be directly or indirectly affected by construction activities. This includes the area within a 0.5-mile radius of the project, which represents the most commonly recognized distance within which disturbance to terrestrial species occurs (WSDOT Feb 2001 as cited in Biological Report), excluding high noise activities such as impact pile driving, blasting, and use of jack hammers. None of the proposed alternatives involves high noise activities.

There are no waterways or wetlands within the project area and there are no surface-flow connections from the project area to aquatic resources to the north or south of the project area; therefore the marine environment adjacent to San Juan Island is not included in the area of potential impacts for marine species.

Federally-listed threatened and endangered species and other federally-protected species that may be present in the project are listed in table 3.1. No critical habitat has been formally designated by the USFWS or NOAA Fisheries Service for any listed species in the project area, and no species is proposed for listing. Species having MBTA and MMPA protection in addition to state endangered and rare status are listed in tables 3.2 and 3.3. These tables are not an all inclusive list of birds in the project area protected under the MBTA. The official list of bird species protected under the MBTA can be found at 50 CFR 10.13.

*Table 3.1 – Federally-listed threatened and endangered species and federally-protected species potentially occurring in the project area*

<b>Federally-Listed Threatened, Endangered, and Protected Species Potentially Occurring in the Project Area</b>				
Common Name	Scientific Name	Status *	Habitat Requirements	Occurrence in Project Area
<b>Birds</b>				
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA, MBTA	See detailed information below.	Yes See detailed information below
Marbled murrelet	<i>Brachyramphus marmoratus</i>	FT, MBTA	Inhabit calm, shallow, coastal waters and bays, and nest inland, up to 45 miles from shore, in dense, mossy, old-growth conifer stands ( <a href="http://www.seattleaudubon.org/birdweb/browse_birds.asp">www.seattleaudubon.org/birdweb/browse_birds.asp</a> 2008).	No. May feed in waters off Cattle Point but do not nest in project vicinity
<b>Fish</b>				
Chinook salmon	<i>Oncorhynchus tshawytscha</i>	FT	Important habitat provided in freshwater streams and estuaries. Eggs laid in deeper water with large gravel. Need cool water and good water flow to survive. Juveniles may spend many months rearing in estuaries before migrating to sea (NOAA 2009).	No. No stream habitat within the project area and marine waters are outside area of potential impacts
Steelhead	<i>Oncorhynchus mykiss</i>	FT	Require cool, clean water during all phases of life cycle. Habitat consists of streams with pools having escape cover such as large woody debris, and undercut banks ( <a href="http://www.naparcd.org/steelheadtrout.htm">www.naparcd.org/steelheadtrout.htm</a> 2009).	No. No stream habitat within project area and marine waters are outside area of potential impacts
<b>Marine Mammals</b>				
Humpback whale	<i>Megaptera novaeangliae</i>	FE, MMPA	Migrate between California and the Gulf of Alaska during summer and fall. Often range relatively close to shore; however, require deep water for migration.  Waters within 0.5 miles of project area are no more than 20 feet deep and most waters are less than 10 feet deep (NPS 2008).	No. Marine waters within 0.5 miles of project area are too shallow

**Federally-Listed Threatened, Endangered, and Protected Species  
Potentially Occurring in the Project Area**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status *</b>	<b>Habitat Requirements</b>	<b>Occurrence in Project Area</b>
Southern resident killer whale	<i>Orcinus orca</i>	FE, MMPA	A small population range from the Queen Charlotte Islands in British Columbia to Monterey, California. They spend much of the summer in protected inshore waters near San Juan Islands in the Strait of Juan de Fuca, Haro Strait, and Georgia Strait, feeding mostly on Chinook salmon.	No. Marine waters adjacent to San Juan Island are outside area of potential impacts
Steller sea lion	<i>Eumetopias jubatus</i>	FT, MMPA	May occur in Puget Sound and in marine waters adjacent to San Juan Island; although no communal haul-out sites are known to be present in the waters surrounding the project area.	No. No haul-out sites within 0.5 mile of project area
<b>Plants</b>				
Golden paintbrush	<i>Castilleja levisecta</i>	FT	Found in open grassland areas and most successful where native prairie species dominate. Commonly associated with Idaho fescue ( <i>Festuca idahoensis</i> ) or red fescue ( <i>Festuca rubra</i> ).  Historically present at Cattle Point, but currently thought to be extirpated from project area. Project area contains suitable habitat, but species not found during NPS 2005b field survey.  USFWS recovery priority 2. High potential for recovery. Possible for reintroduction in project area.	No. Habitat in project area, but no individuals found during survey

\* Status -

**BGPA\*= Protected under Bald and Golden Eagle Protection Act**

**FE= Federally-listed Endangered**

**FT= Federally-listed Threatened**

**MBTA\*= Protected under Migratory Bird Treaty Act**

**MMPA\*= Protected under Marine Mammal Protection Act**

### Bald Eagle

The bald eagle was first listed under the Endangered Species Preservation Act of 1966. Following passage of the Endangered Species Act of 1973, the species was listed as endangered in the lower 48 states, except in Michigan, Minnesota, Oregon, Washington, and Wisconsin, where it was listed as threatened. In 1995, the bald eagle was down-listed to threatened in all lower 48 states. In 2007, the USFWS announced the recovery of the species and removed it from the list of threatened and endangered species; however, the bald eagle is still protected by the Bald and Golden Eagle Protection Act. This Act prohibits the take, possession, sale, or

purchase of bald eagles, including their parts, nests, or eggs without a permit. The bald eagle is also classified as sensitive by the state of Washington.

Bald eagles are aquatic ecosystem birds that primarily forage on fish but will occasionally prey on water fowl, seagulls, and prairie species. Carrion is also an important food source. Bald eagles require a good food base as well as suitable perching areas and nesting sites. Their habitat includes estuaries, large lakes, reservoirs, rivers, and some seacoasts (USFWS 2007a).

Bald eagles use large trees or other elevated sites such as cliffs for spotting prey and as night roosts for sheltering. They typically nest in the tops of large trees near water in areas free from disturbances and often return to the same nest every year. In winter, bald eagles typically congregate near open water or in the vicinity of concentrated food resources such as fish spawning areas, waterfowl concentration areas, or sources of mammalian carrion such as ungulate winter ranges. An important component of bald eagle nesting and wintering areas is a consistent source of food. The availability of food resources is critical during brood rearing, when food limits survival of young (Stalmaster in USFWS 2007b).

The bald eagle is identified on the species list as occurring within San Juan County (USFWS 2009). USFWS information indicates that wintering concentrations of bald eagles can be found at nine locations within the county, including southeast San Juan Island, from about October 31 to March 31. Information about winter use by bald eagles in the park is limited. There is a possible roost site to the west of the park (Stofel, personal communication in USFWS 2005) and it is likely that bald eagles are using perching sites within the park for winter foraging (USFWS 2005). The project area is located within the 800-foot shoreline foraging buffer identified by the Washington Department of Fish and Wildlife (WDFW) priority habitat and species data ([wdfw.wa.gov/hab/phslist.htm](http://wdfw.wa.gov/hab/phslist.htm), accessed March 26, 2007).

WDFW data show that the project area is located within two historic bald eagle territories identified as the Mt. Finlayson Bald Eagle Territory and the Cattle Point Bald Eagle Territory, and it is adjacent to a third bald eagle territory known as Old Camp Bald Eagle Territory. Six historic nest sites containing nine nests are located within 0.5 miles of the project area. The upper point on the proposed road realignment is located within the 800-foot buffer of one bald eagle nest located near the peak of Mt. Finlayson ([wdfw.wa.gov/wlm/diversity/baldeagles/index.htm](http://wdfw.wa.gov/wlm/diversity/baldeagles/index.htm)). Bald eagle nesting activities occur from January 1 to August 15 (USFWS 2004). Bald eagle territories and nest sites are also located within 1 mile of the project area on Lopez Island and near the American Camp historic areas.

NPS information shows that there are several historic bald eagle nest sites at American Camp but there are currently only two known occupied nest territories within the park boundary (NPS 2009). The bald eagle nest sites near the American Camp historic areas have been monitored by the NPS since the early 1990s. The Mt. Finlayson historic nest sites were monitored in 2009. Of the seven nest locations in the Mt. Finlayson area shown in the WDFW database, only one nest was found, and it was in disrepair and unoccupied (NPS 2009). The nest located closest to the proposed road realignments could not be found by the NPS in 2009.

### **3.3.4 State-Listed Threatened and Endangered Species**

Since the project area includes state lands (NRCA), impacts to state special status species are also considered in this FEIS. Similar to federal ESA designations, the state has listed threatened, endangered, and candidate species that it has determined are at risk on a statewide

level and that require special protection. Under Washington Administrative Code (WAC) 232-12-297, these are defined as follows:

**Endangered:** Any wildlife species native to the state of Washington that is seriously threatened with extinction throughout all or a significant portion of its range within the state.

**Threatened:** Any wildlife species native to the state of Washington that is likely to become endangered throughout a significant portion of its range within the state within the foreseeable future without cooperative management or removal of threats.

In the spring of 2005 a survey was conducted by a NPS botanist to identify native and non-native plants in the project area. Previous field surveys had identified appropriate habitat for nine rare species. The focus of this survey was to verify if these or any other rare plant species were in the project area, to map their locations, and to estimate population numbers of any rare plants, as well as to compile a comprehensive list of all plant species present in the project area. An intensive field survey was conducted in the project area in accordance with the Washington Natural Heritage Program (WNHP) field survey guidelines. Site visits were conducted in April and again in May to increase the likelihood that all species were in fruit or flower during the survey period.

The information from this survey was documented in the NPS Vascular Plant Survey Report (NPS 2005b), which assessed the conditions of plant habitat and confirmed the location of native prairie. The report also identified any unique plant species and plants that provide habitat for key wildlife species. The only rare plant identified within the project vicinity was the state-threatened California buttercup, *Ranunculus californicus*.

Information on state threatened and endangered species was also included in the biological and plant survey reports completed by the project consultant (Widener 2006a, 2006b).

State-listed threatened and endangered species that may be present in the project area are included in table 3.2.

*Table 3.2 – State-listed threatened and endangered species potentially occurring in the project area*

<b>State-Listed Threatened and Endangered Species Potentially Occurring in the Project Area</b>				
<b>Common Name</b>	<b>Scientific Name</b>	<b>Status *</b>	<b>Habitat Requirements</b>	<b>Occurrence in Project Area</b>
<b>Birds</b>				
Marbled murrelet	<i>Brachyramphus marmoratus</i>	ST, MBTA	See Federal Table 3.1	No
Streaked horned lark	<i>Eremophila alpestris strigata</i>	SE, WNHP, MBTA	Nests on the ground in sparsely vegetated sites in short-grass dominated habitats (historically prairies) in lowland areas.  Thought to be extirpated from San Juan Islands  Reintroduction under consideration	No  Extirpated from San Juan Islands
<b>Marine Mammals</b>				
Humpback whale	<i>Megaptera novaeangliae</i>	SE, MMPA	See Federal Table 3.1	No
Northern sea otter	<i>Enhydra lutris kenyoni</i>	SE, MMPA	Occupy coastal marine habitats. Generally occur within 1.24 miles (mi) of shore especially shallows with kelp beds and abundant shellfish (USFWS 2004).	No  Marine waters adjacent to San Juan Island are outside area of potential impacts
Southern resident killer whale	<i>Orcinus orca</i>	SE, MMPA	See Federal Table 3.1	No
Steller sea lion	<i>Eumetopias jubatus</i>	ST, MMPA	See Federal Table 3.1	No

**State-Listed Threatened and Endangered Species  
Potentially Occurring in the Project Area**

**Reptiles/Amphibians**

Northwestern pond turtle	<i>Emys (Clemmys) marmorata marmorata</i>	SE	Found in ponds and small lakes.	No No suitable habitat in project area
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**Invertebrates**

Whulge (Taylor's) checkerspot	<i>Euphydryas editha taylori</i>	SE	Dependent on native grassland. Although project area likely contains suitable habitat, species not documented in the project area and not observed during 2003 field surveys (Pyle 2003a, 2003b in NPS 2008).	No Habitat in project area, but no individuals found during survey
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**Plants**

Bear's foot sanicle	<i>Sanicula arctopoides</i>	SE	Found in coastal bluffs and grassy sand dunes near salt water.	No No suitable habitat in project area
California buttercup	<i>Ranunculus californicus</i>	ST	See detailed information below	Yes See detailed information below
Erect pygmy weed	<i>Crassula connata</i>	ST	Preferred habitat is chaparral and wet to moist vernal pools on coastal bluffs.	No No suitable habitat in project area
Golden paintbrush	<i>Castilleja levisecta</i>	SE	See Federal Table 3.1	No Habitat in project area but no individuals found during survey
Sharp fruited peppergrass	<i>Lepidium oxycarpum</i>	ST	Occurs in moist areas in salt spray zone and in direct sunlight.	No No suitable habitat in project area

\* Status -

SE= State of Washington Endangered

ST= State of Washington Threatened

MBTA= Protected under Migratory Bird Treaty Act

MMPA= Protected under Marine Mammal Protection Act

WNHP= Washington Natural Heritage Program Priority Species

### California Buttercup

The California buttercup is classified by the state of Washington as threatened and critically imperiled (five or fewer known occurrences in the state).

The California buttercup grows at low elevations on bluffs, rocky wooded areas, and in open grasslands along the coast. This species generally prefers relatively dry grassland areas, but can be found in moister ecosystems. The plant typically flowers in May and June (WNHP 2004).



The American Camp population of California buttercup (*Ranunculus californicus*) is complicated by the presence of the western buttercup (*Ranunculus occidentalis*) and the resulting hybrid (Steve Hahn, NPS botanist, personal communication email, May 15, 2004). During the 2005 survey, several morphological features were compared to determine if the plants were *R. californicus*, *R. occidentalis*, or hybrids. The American Camp population was found to contain approximately 3 percent *R. occidentalis*, 30 percent *R. californicus*, and 67 percent hybrids. However, the hybrids were more closely related to *R. californicus* than *R. occidentalis* (NPS 2005).

During the spring 2005 field survey, the NPS identified 33 groups (consisting of 2 to 260 individuals) of California buttercup within the project area where the total number is estimated at 1,839. However, due to the low, ground-based and multi-branched growth habits of this species, determining individual plant numbers is difficult. Altogether, the plants occupy a total of approximately 0.5 acres within the project area (NPS 2005). California buttercup also occurs outside of the project area on the American Camp prairie; however a comprehensive survey has not been conducted to determine the actual number of groups or individuals (NPS 2005).

### **3.3.5 Other Special Status Species**

Additional special status species include rare species listings from the Washington Department of Fish and Wildlife (WDFW) Priority Habitat and Species (last revised June 30, 2008), as well as species in the area that are known to be sensitive or unique though not formally designated. State sensitive species are defined as any wildlife species native to the state of Washington that are vulnerable or declining, and are likely to become endangered or threatened in a significant portion of their range within the state without cooperative management or removal of threats.

Federal and state candidate species are plants and animals for which the regulatory agencies have sufficient information on their biological status and environmental threats to propose them as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other higher priority listing activities. Candidate species receive no statutory protection under the ESA. However, the regulatory agencies encourage the formation of partnerships to conserve these species since they are, by definition, species that may warrant future protection under the ESA.

The USFWS and NOAA also identify species of concern, which are species likely to be in need of conservation action. This may range from a need for periodic monitoring of populations and threats to the species and their habitat, to the necessity for listing them as threatened or

endangered. Such species receive no legal protection under the Endangered Species Act and the designation does not necessarily imply that a species will eventually be proposed for listing.

Information on these special status species and ecosystems comes from a wide variety of sources, including the DNR Washington Natural Heritage Program (WNHP) and other state/federal agency botanists, Native Plant Society members, consultants, the University of Washington Rare Care program, and published literature. The WNHP manages site-specific and species/ecosystem-specific information on priority species and ecosystems; those that are rare or have very limited distribution. Park and DNR personnel also provided information on species found in the area.

According to the WNHP database, there are several high quality occurrences of plant communities/ecosystems at Third Lagoon and Jakle’s Lagoon, but none are identified within the project area.

The following table lists species with federal and state special status designations. These species are not legally protected under the Endangered Species Act; however, they are of importance in considering the effects of the proposed project.

**Table 3.3 – Other species of concern potentially occurring in the project area**

<b>Other Special Status Species Potentially Occurring in the Project Area</b>				
<b>Common Name</b>	<b>Scientific Name</b>	<b>Status *</b>	<b>Habitat Requirements</b>	<b>Occurrence in Project Area</b>
<b>Birds</b>				
Black oyster catcher	<i>Haematopus bachmani</i>	WDFW-P MBTA	Inhabits rocky seacoasts and islands, less commonly sandy beaches	Potentially present in project vicinity  Breeding colonies located within 1 mile east of project area
Northern goshawk	<i>Accipiter gentiles</i>	SC, MBTA	Inhabits forested areas  Prefers coniferous forests but also found in deciduous and mixed forests from sea level to subalpine areas	Potentially present in project vicinity, though most likely found in forested areas
Olive-sided flycatcher	<i>Contopus cooperi</i>	FSC, MBTA	Preferred habitat consists of mid- to high-elevation montane and coniferous forests, often associated with forest openings and edges	Potentially present in project vicinity, though most likely found in forested areas

<b>Other Special Status Species Potentially Occurring in the Project Area</b>				
<b>Common Name</b>	<b>Scientific Name</b>	<b>Status *</b>	<b>Habitat Requirements</b>	<b>Occurrence in Project Area</b>
Oregon vesper sparrow	<i>Pooectetes gramineus affinis</i>	SC, MBTA	Breeds in sparsely vegetated, grassland habitats with scattered trees or shrubs  Structural diversity of habitat important because species use taller perches for singing and open areas for foraging	Potentially present in project area
Osprey	<i>Pandion haliaetus</i>	WDFW-P MBTA	Diet consists almost exclusively of fish  Nest in any location near a body of water providing an adequate food supply	May potentially forage in project vicinity  Nest located about 1 mile northwest of project site
Peregrine falcon	<i>Falco peregrinus</i>	FSC, SS, MBTA	Hunt in open areas, especially along the coast and near other bodies of water that provide habitat for prey  Nest on cliffs and cliff-like structures	Potentially present in project vicinity
<b>Bats</b>				
Long-eared myotis	<i>Myotis evotis</i>	FSC	Lives in coniferous forests in mountain areas, roosts in small colonies in caves, buildings, and under tree bark	Potentially present in project vicinity though more likely found in forested areas
Long-legged myotis	<i>Myotis volans</i>	FSC	Likes forested mountainous areas, sometimes desert lowlands  Roosts in tree hollows and under bark, in crevices and buildings	No
Pacific Townsend's big-eared bat	<i>Corynorhinus townsendii townsendii</i>	SC	Snag/log dependent  Primarily cavity-dwellers, with most roost sites in Washington located in caves or abandoned mines (Lacki et al. 1994, Sherwin et al. 2000)	Potentially present in project vicinity
<b>Fish</b>				
Bull trout	<i>Salvelinus confluentus</i>	SC	See Federal Table 3.1	No
Chinook salmon	<i>Oncorhynchus tshawytscha</i>	SC	See Federal Table 3.1	No

**Other Special Status Species  
Potentially Occurring in the Project Area**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status *</b>	<b>Habitat Requirements</b>	<b>Occurrence in Project Area</b>
Coho salmon	<i>Oncorhynchus kisutch</i>	FSC	Rear and feed in streams and small freshwater tributaries Spawning habitat is small streams with stable gravel substrates The remainder of the life cycle is spent foraging in estuarine and marine waters of the Pacific Ocean	No No stream habitat within project area and marine waters are outside area of potential impacts
River lamprey	<i>Lampetra ayresi</i>	SC	Require clean gravel substrate in streams for spawning and egg incubation After hatching they burrow in silt and mud in off-channel areas, typically remaining for years	No No suitable habitat in project area
<b>Marine Mammals</b>				
Harbor seal	<i>Phoca vitulina</i>	WDFW-P	Inhabit shallow areas of estuaries, rivers, and places where sandbars and beaches are uncovered at low tide Haul-out sites identified within 0.5 miles of the project vicinity off the east and north coasts of Cattle Point These marine environments are outside of the area of potential impacts	No No suitable habitat within area of potential impacts
<b>Invertebrates</b>				
Island marble butterfly	<i>Euchloe ausonides insulana</i>	FSC, SC	See detailed information below	Yes See detailed information below
Moss' elfin	<i>Incisalia mossii</i>	SML	Moss' Elfin lives along canyon slopes, brushy ravines, and steep hills Found in southeastern Vancouver Island	No Potential habitat in project area, though species not found during NPS 2005 survey
Propertius duskywing	<i>Erynnis propertius</i>	SML	Found from sea level up onto hillsides, in woodland clearings, trails, and in open meadows, always near oaks	No Larval host plant not found in project area

Other Special Status Species Potentially Occurring in the Project Area				
Common Name	Scientific Name	Status *	Habitat Requirements	Occurrence in Project Area
Valley silverspot	<i>Speyeria zerene bremnerii</i>	FSC, SC	Dependent on early blue violet ( <i>Viola adunca</i> ), which is known to grow in grasslands east of redoubt and South Beach  However, early blue violet not found in project area during NPS 2005 field survey	Potentially present in project area
Whulge (Taylor's) checkerspot butterfly	<i>Euphydryas editha taylori</i>	FC	See State Table 3.2	No  Habitat in project area, but no individuals found during survey
<b>Reptiles/Amphibians</b>				
Western toad	<i>Bufo boreas</i>	SC	Occur in a variety of terrestrial habitats including prairies, forests, canyon grasslands, and ponderosa pine  Most common around marshes and small lakes  Breeding waters usually permanent wetlands, ponds, lakes, reservoir coves, and the still water off-channel habitats of rivers	Potentially present in project area
<b>Plants</b>				
Annual sandwort	<i>Minuartia pusilla var. pusilla</i>	SPC	Found in plains, open pine forest, chaparral slopes, and dry rock cliffs at an elevation of 25 to 7900 feet	No
Nuttall's quillwort	<i>Isoetes nuttallii</i>	SS	Terrestrial in wet ground or seepages and in mud near vernal pools  Low to middle elevations	No
Slender crazyweed	<i>Oxytropis campestris var. gracillia</i>	SS	Occurs in prairies, mountain meadows, open woodlands, and on gravelly flood plains in moist or dry soils	Potential habitat in project area

\* Status \* -

FC= Federal Candidate

FSC= Federal Species of Concern

SC= State of Washington Candidate

SS= State of Washington Sensitive Species

SML= State of Washington Monitor List

SPC= State of Washington Potential Concern

WDFW-P= WDFW Priority Habitat and Species Database

## Island Marble Butterfly

The island marble butterfly is a federal species of concern and a state candidate species. In November 2006, following a 12-month status review, the USFWS concluded that the island marble butterfly does not warrant listing under the ESA.

The island marble butterfly historically inhabited the open grasslands and Garry oak woodlands on the San Juan Islands and on Gabriola and Vancouver Islands in Canada. It was last seen in 1908 and was believed to be extinct until a small population was found in the San Juan Island National Historical Park in 1998.

Lambert studied the population ecology and life history of the island marble over four flight seasons in 2004 and 2008. Based on this work, it was found that the life cycle of the island marble is closely associated with its host plants. During the vascular plant survey in spring 2005, the NPS documented that the larval host plants, tumble mustard (*Sisymbrium altissimum*) and field mustard (*Brassica campestris*), were present but uncommon in the project area. In addition to its host plants, the island marble butterfly has been observed feeding on approximately 10 different plant species within the park (Pyle 2004). During the 2005 NPS field survey, seven of these plant species were identified within the project area; however, their abundance was classified as uncommon (NPS 2005).

During DNR-USFWS surveys conducted in May and June of 2006, island marble butterflies were observed using tumble mustard near the Cattle Point Road, close to the east boundary of the park (DNR 2006). According to the DNR, stands of field mustard on DNR property within the project area hosted the island marble butterfly in 2005 (DNR, personal communication October 2005).

On October 31, 2006, the NPS and the USFWS concluded a conservation agreement entitled *A Conservation Agreement and Strategy for the Island Marble Butterfly (Euchloe ausonides insulanus Guppy & Shepard) Between the San Juan Island National Historical Park, National Park Service and the U.S. Fish and Wildlife Service*. The agreement is aimed at helping ensure the long term continued existence of the island marble butterfly and contributing to its recovery. It lays out general guidelines for a wide array of activities at American Camp, including proposed realignment of the Cattle Point Road. The conservation measures agreed to as part of the Conservation Agreement are included as project mitigation in section 4.4.4

### 3.3.6 Essential Fish Habitat (EFH)

The Magnuson-Stevens Fishery Conservation and Management Act requires that federal agencies consult with the NOAA Fisheries Service (also known as the National Marine Fisheries Service) on activities that may adversely affect Essential Fish Habitat (EFH). EFH is broadly defined as “those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity” (Magnuson-Stevens Act, 16 U.S.C. 1801 et seq). Freshwater EFH for salmon applies to all streams, lakes, ponds, and wetlands that support Chinook, coho and Puget Sound pink salmon.

The Pacific Fisheries Management Council has designated EFH for several species, including salmon, in the marine waters offshore of the project area (PFMC 2008, NOAA 2006b).



There are no streams, lakes, ponds, or wetlands within the project area, and no waterbodies flowing into marine waters. The marine waters adjacent to San Juan Island are outside of the area of potential effects for the project.

## 3.4 CULTURAL AND HISTORIC ENVIRONMENT

### 3.4.1 Cultural Setting

San Juan Island and Cattle Point have been shaped by human activity since ancient times. The oldest archaeological site found on the island is located on the bluff above South Beach at American Camp. Cascade spear points used by native peoples from about 7,000 to 9,000 years ago were discovered at the site in 1948 (NPS 2008).

Sometime between 2,500 and 1,500 years ago the number of people living on the San Juan Islands increased. People from the mainland moved to occupy the islands year-round, where before they had visited only seasonally to fish, dig camas, and collect berries (NPS 2008). By early historic times, the indigenous people from six Central Coast Salish tribes were occupying the San Juan Islands and nearby mainland areas. Three settlements were located in northern San Juan Island.

The first Europeans known to have explored the San Juan Islands were the Spanish. The Nootka Convention of 1790 opened the region between Russian America and Spanish California to joint exploration and occupation between Great Britain and Spain. The Spanish charted Vancouver Island and the Strait of Georgia while the British focused on Puget Sound and the Strait of Georgia. In the early 1790s, Francisco Eliza explored the region and is generally credited with giving the islands the name San Juan (NPS 2008).

A U.S. exploratory expedition was dispatched by the United States in 1841 to chart the Pacific Basin. In 1846, the signing of the Oregon Treaty established the 49<sup>th</sup> parallel as the principle boundary between British and American possessions in the West; however, it left ambiguous the question of the final boundary between Vancouver Island and the mainland, which threw possession of the San Juan Islands into dispute (NPS 2008).

Euro-American exploitation of the San Juan Islands may have begun as early as 1840 with some timber harvesting operations. Between 1850 and 1851, the Hudson's Bay Company set up its first seasonal fishing station on San Juan Island. By 1853, the governor of the British crown colony of Vancouver Island hoped to further entrench British claims on the islands by establishing a permanent agricultural station on the southern end of San Juan Island. Belle Vue Sheep Farm eventually supported a herd of 4,500 sheep. The farm was comprised of houses, barns, outbuildings, and fenced pastures with more than 100 acres under cultivation (NPS 2008).

By June 1859, about 25 Americans lived on the island. American surveyors staked out speculative claims on Oak Prairie and near the Hudson's Bay Company dock on Griffin Bay. This act attracted a score of failed American miners and others looking for free land (NPS 2008).

The military confrontation known as the Pig War stems from an incident on June 15, 1859, in which an American settler shot a boar foraging in his potato patch. The boar belonged to Belle Vue Sheep Farm, and the subsequent disagreements over compensation as well as exaggerated accounts of the event led to the American settlers on the island petitioning the government for

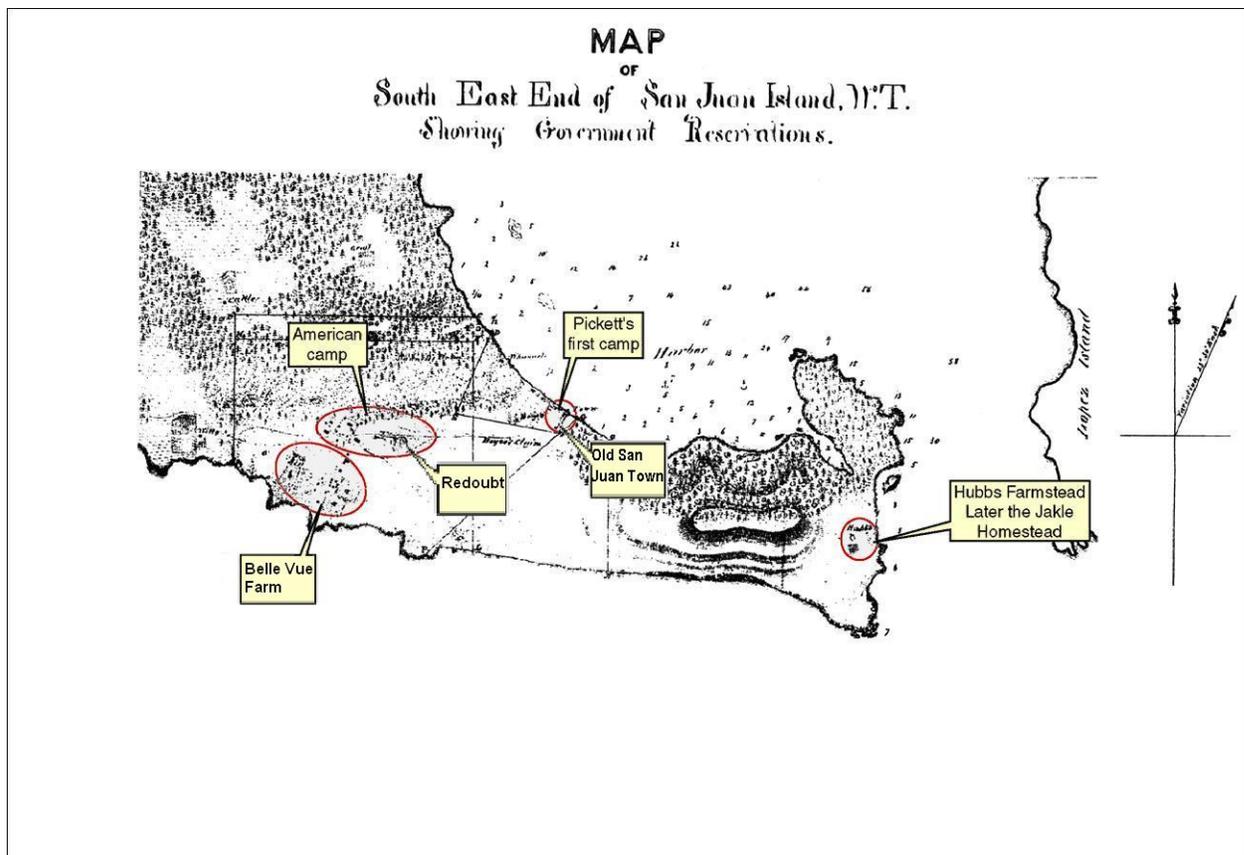
protection. On July 27, 1859, American troops landed at the Hudson's Bay Company dock on Griffin Bay and established their camp just up from the beach on the Griffin Bay shore. In response to the arrival of American troops, the British government sent three vessels of the Royal Navy to Griffin Bay with orders to evict as trespassers all Americans on the island. An uneasy standoff ensued with reinforcements supplied to both sides and construction of an earthen fortification, thereafter known as the redoubt, by the Americans (NPS 2008). Negotiation of a peaceful stand-down was undertaken by the United States and Great Britain, and by October of 1895 a joint military occupation of San Juan Island was agreed upon, buying time for the boundary dispute to be resolved (NPS 2008).

In March of 1860, British Royal Marines were dispatched to the north end of San Juan Island with supplies and provisions for construction of a British encampment. A permanent American encampment was established near Cattle Point, which offered a commanding view of Griffin Bay, the Strait of Juan de Fuca, and the British settlement of Victoria on the western horizon. A primary physical feature of the camp was the large earthen redoubt (figure 3.9), which formed the easternmost edge of the campsite.



*Figure 3.9 - Historic Redoubt. The structure has changed little from the time of the 1859 Pig War.*

Barracks, officers housing, a laundry, hospital, guardhouse, kitchen, mess hall, and bake house along with a parade ground, vegetable garden, and extensive fencing were in place at the American camp by the early 1860s. The village of San Juan sprang up around the Hudson's Bay Company wharf on Griffin Bay following the arrival of American forces in 1859. The village consisted of approximately 14 crude structures. Following the withdrawal of the military and the establishment of Friday Harbor as the county seat, the town was slowly abandoned and finally burned to the ground in 1890 (NPS 2008). Figure 3.10 shows the locations of historic resources in the Cattle Point area.



*Figure 3.10 – 1860 Map of Cattle Point showing historic resources (modified from Thompson 1972)*

The joint military occupation of San Juan Island continued for twelve years. In 1872, the San Juan Islands were awarded to the United States following the 1871 Treaty of Washington (NPS 2008).

After the military departed, both camps were sold to private individuals. At American Camp, the land was initially kept as a military reservation, but was later opened to settlement by presidential proclamation. The military buildings were sold at auction, and most were removed from the site. In 1951, the Washington State Parks and Recreation Commission acquired five acres of the historic campsite at American Camp. Commission actions to purchase lands at the American and English camp sites continued until 1963. In 1966, with the creation of the San Juan Island National Historical Park, both the English and American Camp sites were donated by Washington State Parks to the National Park Service (NPS 2008).

### **3.4.2 Cultural, Historic, and Archaeological Resources**

Most of the project area is located within the American Camp unit of San Juan Island National Historical Park (SJINHP). The park was established for the purpose of interpreting and preserving the historic sites and events that occurred on the island in connection with the final settlement of the Oregon Territory boundary dispute and the Pig War of 1859. In addition to the historic resources associated with the park, the area has shown evidence of ancient occupation by indigenous peoples as well as more recent Euro-American settlement (NPS 2008).

Section 106 of the National Historic Preservation Act (NHPA) requires that federal agencies take into account the effects of any federally funded or permitted project on cultural, prehistoric, and historic resources eligible for the National Register for Historic Places (NRHP). Section

106 also requires that all federal agencies consult with Indian Tribes for undertakings which may affect properties of traditional religious and cultural significance. In addition, federal agencies are required to comply with all other federal laws for the protection of cultural and archaeological resources. National Park Service direction relevant to cultural resources includes chapter 5 of NPS 2006 *Management Policies*, and Director's Order (DO) - 28: *Cultural Resource Management*, as well as other related policy directives such as the National Park Service *Museum Handbook*, the National Park Service *Manual for Museums*, and *Interpretation and Education Services Guidelines* (DO-6).

Special conditions associated with Native American Indian presence also apply, including identification of sacred sites (EO 13007) and Indian Trust resources (ECM95-2). Secretarial Order 3175 requires that any anticipated impacts to Native American Indian trust resources from a proposed project or action by Department of Interior agencies be addressed in environmental documents. The federal Indian trust responsibility is a legally enforceable obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry out the mandates of federal law with respect to American Indian and Alaska Native tribes.

#### 3.4.2.1 Archaeological Resources

Because of the attention paid to the park by archaeologists and historians over the years, a large number of prehistoric and historic archaeological sites outside of the project area have been recorded in the Washington State Archaeological Site Inventory (NPS 2008).

In 2004, field surveys and research were conducted by an archaeological consultant to identify potential archaeological resources within the project area using standard surface and subsurface survey methods. Two isolated finds of pre-contact stone tool-making debris were found near the ridgeline of Mt. Finlayson. Additional subsurface probes in the area did not yield any additional artifacts or features (Northwest Archaeological Associates 2004).

The finds were recorded and evaluated as part of the *Cultural Resources Assessment of the San Juan Island National Historical Park, Cattle Point Road Project San Juan County, Washington* (Northwest Archaeological Associates 2004). The assessment concluded that both finds were isolated basalt flakes and represented very limited stone tool manufacturing, use, or discard. Neither find met the significance or integrity criteria to be recommended as eligible for listing on the NRHP.

No Native American Indian trust resources have been identified within the park and no sacred sites have been identified in the project area. Human remains dating to the period before European settlement have been found in a number of locations west of the project area. Based on these findings, along with coordination with the tribes and the results of the cultural survey, it is possible, though not likely, that Native American remains are present in the project area (Northwest Archaeological Associates).

#### 3.4.2.2 Cultural Resources

The cultural and archaeological resources of the American Camp unit of the park have been surveyed, evaluated, and documented over many years. American Camp is eligible for listing on the NRHP as a historic site and the entire park is designated as a National Historic Landmark. This is the highest historic classification a property can receive.

American Camp contains important historic resources including two of the original military buildings, the reconstructed military fence and flagpole, and numerous archaeological sites

(NPS 2008). American Camp is a cultural landscape incorporating natural features, vegetation, views and vistas, buildings and structures, and archaeological sites that provide a background for interpreting the story of the Pig War and the subsequent joint military occupation (NPS 2004).

The park completed a Cultural Landscapes Inventory (CLI) for American Camp in 2004. Inventoried landscapes are listed on, or eligible for, the National Register of Historic Places (NRHP), or are treated as cultural resources. The cultural landscape boundary for the American Camp unit is shown in figure 3.11. The boundary was chosen by the NPS to include all contributing features retaining historic integrity, including vegetation and clearings that contribute to the historic scene (NPS 2004).



*Figure 3.11 – Cultural landscape boundary and historic sites (modified from NPS 2004)*

The setting of American Camp has been altered since the historic period; however, the spatial organization associated with the development of the military encampment retains integrity and contributes to the significance of the site. The primary function of the military operation, establishing a defensible space, was achieved by sighting the camp to take advantage of the natural environment. The location on a ridge and proximate to two bays allowed for good visibility and physical access to the water. The sweeping views, which characterize the landscape of American Camp, also retain integrity and contribute to the significance of the site (NPS 2004).

The following historic view-sheds have been identified within the cultural landscape. They are located to the west of the project area (NPS 2004):

1. Territorial views of the Strait of Juan de Fuca, Griffin Bay, Cattle Point, and surrounding islands from the redoubt (figures 3.12 and 3.13).



*Figure 3.12 - View of the Strait of Juan de Fuca from the Redoubt*



*Figure 3.13 - View of Cattle Point and Mt. Finlayson from the Redoubt*

2. Views of the Strait of Juan de Fuca from the cantonment (the military camp) (figure 3.14).



*Figure 3.14 – View of the Strait of Juan de Fuca from the Parade Ground (in the military camp).*

The project area is not visible in either of these historic view-sheds. However, the project area is remotely visible from a portion of South Beach, which is designated as part of the cultural landscape (figure 3.15). The visible portion of the project area consists of a section of the grassland slope located just west of the bluff erosion problem area. A length of slope is visible from the existing road near the bluff to near the ridgeline. At its closest point, this location is approximately one mile from South Beach.



*Figure 3.15 – Magnified view of existing road from South Beach*

## 3.5 SOCIAL AND ECONOMIC ENVIRONMENT

### 3.5.1 Land Use

Approximately 90 percent of the land in the project area is within the San Juan Island National Historical Park (park), which is managed by the National Park Service (NPS). Approximately 10 percent of the project area is in the Cattle Point Natural Resources Conservation Area (NRCA), which is managed by the Washington State Department of Natural Resources (DNR) (figure 3.16).

The park was established by Congress in 1966 for the purpose of interpreting and preserving American and English camps and of commemorating the historic events occurring in connection with the final settlement of the Oregon Territory boundary dispute (NPS 2008). The project area is located within the American Camp unit of the park.

NRCAs were created by the state of Washington in 1987 to protect special areas of statewide significance. They protect outstanding examples of native ecosystems; habitat for endangered, threatened, and sensitive plants and animals; and scenic landscapes. They also provide opportunities for education and low-impact public use (DNR 2008). The Cattle Point NRCA contains trails, informational signing, and a day-use picnic area.



*Figure 3.16 - Land ownership and use*

The Cattle Point Road provides vehicular access to both the park and NRCA.

Four publicly-owned parcels are located on the eastern boundary of the park and NRCA units. One parcel is jointly owned by the San Juan County Land Bank and the DNR, two are owned solely by the DNR, and one is owned by the Bureau of Land Management (BLM). The Cattle Point Water District owns a small property adjacent to the NRCA, where it maintains a desalinization facility for treatment of drinking water for area residences. The BLM property is a 27-acre parcel located at the south end of Cattle Point. It contains a small network of trails, interpretive panels and a kiosk for day use. The U.S. Coast Guard owns and maintains an active marine-navigation lighthouse located on the BLM property. The Coast Guard uses the Cattle Point Road to service and maintain the lighthouse.

The northeast tip of Cattle Point consists of private property in the Cattle Point Estates and Cape San Juan subdivisions. The Cape San Juan subdivision was approved by San Juan County for development in 1963, with subsequent additions approved in 1965, 1966, and 1967. Cattle Point Estates development was approved in 1978 and 1980 (Lee McEnery, San Juan County, personal communication, 2009). The subdivisions contain a total of approximately 150 residential lots, some of which have not yet been developed. Lot sizes vary from 0.5 to nearly 6 acres, with the larger lots located in Cattle Point Estates (NPS 2008). The closest private residence is located approximately 500 feet from the east end of the project area, with multiple residences in low density continuing to the northeast. Approximately seven residences are located within 500 to 1,000 feet of the east end of the construction area. The Cattle Point Road is the only road access for the east end of Cattle Point, including the Cattle Point and Cape San Juan residential areas.

Other private property is located to the west of the park, further from the project area. The Eagle Cove, Eagle Cove Acres, and Eagle Cove Estates subdivisions total 43 single-family lots, averaging approximately 1 acre in size. Over half of the lots have been developed. Eagle Cove subdivision was approved by the county in 1960, Eagle Cove Acres in 1976, Eagle Cove Estates in 1969 and 1980 (Lee McEnery, San Juan County, personal communication, 2009). These residential areas are located over 1.5 miles from the west end of the project area.

Current county zoning designates the private property at the east end of Cattle Point and to the west of the park as rural residential. The park, NRCA, and BLM properties are designated as conservancy (figure 3.17).

The San Juan County Comprehensive Plan (2006) describes rural residential as land consisting of small acreage areas generally with private covenants and restrictions. Conservancy land is described as areas possessing valuable natural features or resources or areas possessing scenic, historical, or recreational qualities of considerable local, regional, state, or national significance.

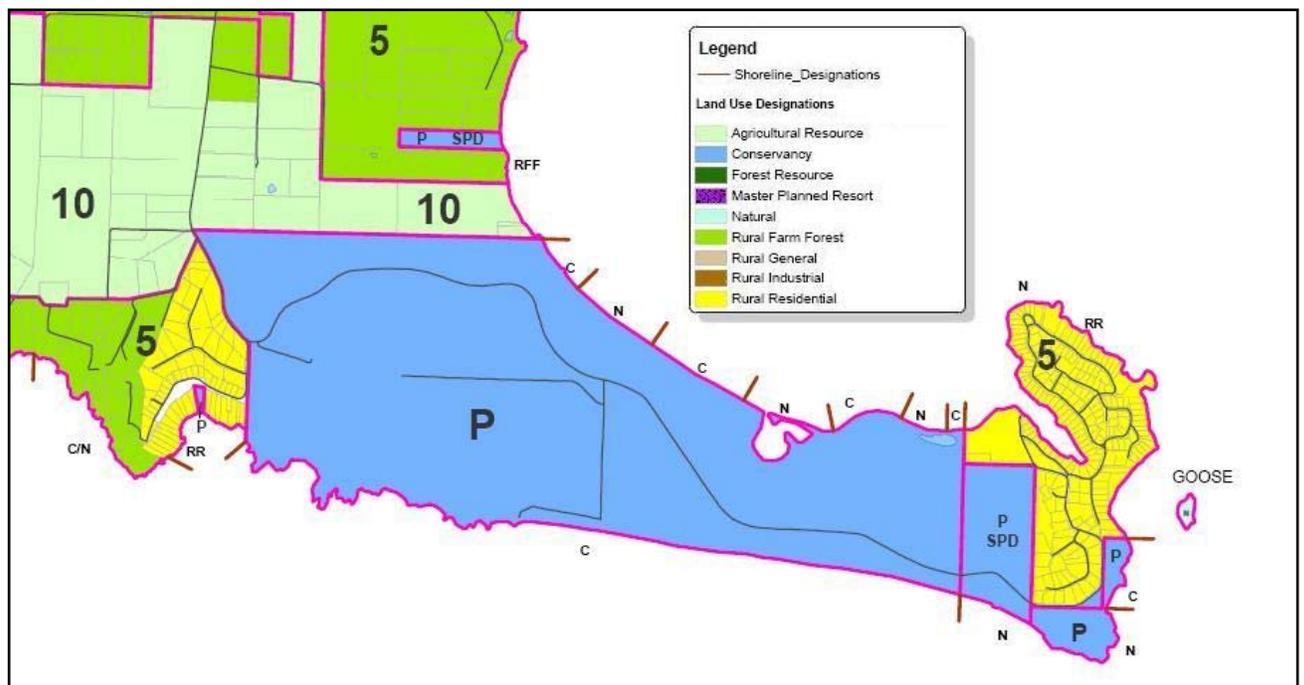


Figure 3.17 – County land use designations ([www.co.san-juan.wa.us/planning/officialmaps.aspx](http://www.co.san-juan.wa.us/planning/officialmaps.aspx))

### 3.5.2 Local Plans

Three government agency plans apply to Cattle Point Road area.

- *San Juan Island National Historical Park Final General Management Plan and EIS (NPS 2008)*, applicable to national park property
- *Natural Resources Conservation Area State-Wide Management Plan (DNR 1992)*, applicable to the Cattle Point NRCA
- *San Juan County Comprehensive Plan* (adopted December 20, 1998, revised July 2006), applicable to county and private property

### 3.5.2.1 San Juan Island National Historical Park Final General Management Plan (GMP) and EIS 2008

It is the policy of the National Park Service to protect both the abundance and diversity of the naturally-occurring communities and the cultural historical resources for which the park was created. The park manages land in accordance with management goals that consist of three major facets.

- Protect natural and cultural resources
- Provide opportunities for education and for scientific research of resources
- Promote understanding and enjoyment of park resources for visitors

The varied landscapes and settings of San Juan Island National Historical Park provide year-round recreational opportunities and experiences that are compatible with the historic settings and values of the park.

Resources and values in the GMP pertinent to the project area are:

- Opportunities to experience tranquility, natural sounds, and dark night sky
- Opportunities for non-motorized recreation
- Open landscapes providing historic and unobstructed, broad sweeping views
- Intact shoreline areas comprising the longest and most varied expanse of publicly accessible shoreline in the San Juan Islands

Management actions in the GMP that are pertinent to the Cattle Point Road project include:

- Maintenance of vehicular road access for residents at Cape San Juan and Cattle Point Estates and visitors to the Cattle Point Interpretive Area
- Cooperation between the state and county to provide appropriate access to private land adjacent to the park where rights-of-way exist
- Protection of examples of wave-cut marine terraces or other glacial features for educational, interpretive, and scientific purposes
- Protection of scenic resources of the park as required by law and policy
- Construct of new facilities to be compatible with scenic resources
- Restoration of the historic prairie to enhance native species composition, ecological function, and visual quality as it existed during the encampment period

### 3.5.2.2 Natural Resources Conservation Area Statewide Management Plan

Cattle Point NRCA does not have a site specific management plan; therefore, general management of the area is guided by the 1992 NRCA Statewide Management Plan (Alison Hitchcock, DNR, personal communication, 2009).

The primary goal of the NRCA program is protection, enhancement, and restoration of natural resources. Management guidelines in the NRCA Statewide Management Plan pertinent to the Cattle Point Road project include:

- Activities shall not compromise a site's ecological, geological, scenic, historic, and archaeological integrity.

- Existing roads will remain open to the general public when they meet DNR recreation road standards for safe public access, and where an existing public ROW already exists or the road is determined as essential to access of the site for low-impact use.
- An objective evaluation of allowable uses must be completed and a determination made that the uses will not adversely affect the resource values of the site.

NRCA uses must not adversely affect the quality of the site's natural resources or disrupt long-term ecological processes and must be appropriate to the site's maintenance as a relatively unmodified natural setting. NRCA management gives weight to natural resource conservation and as well as public use, but where conflicts arise, resource conservation prevails (DNR 2004).

### 3.5.2.3 San Juan County Comprehensive Plan

The San Juan County Comprehensive Plan, together with its supporting documents, is the official policy statement of the county. It provides a long-range framework to guide citizens, county government, private agencies, and service providers in their planning, design, and location decisions about growth, land uses, conservation of natural resources, and major capital facility expenditures.

The Comprehensive Plan designates the private property at the tip of Cattle Point as *rural residential*. The planning goal of rural residential lands is "To protect the predominantly residential character of some rural areas and provide for a variety of residential living opportunities at rural densities." The park, DNR, and BLM properties are designated as *conservancy*. The planning goal for conservancy lands is "To protect, conserve, and manage existing natural conditions, resources, and valuable historic, scenic, educational, or scientific research areas for the benefit of existing and future generations without precluding compatible human uses."

Planning policies in the Comprehensive Plan that are pertinent to the Cattle Point Road project include:

- Ensure that the location and design of all development within conservancy areas will minimize adverse impacts on the natural features or resources of the site.
- Recognize the needs and desires of residents of each island in making decisions regarding transportation facilities and their operation.
- Bridges and tunnels between islands and from the mainland are inconsistent with the goals of this plan and should not be allowed.
- Maintain a public road system that is as safe and efficient as possible while recognizing the importance of conserving environmental and scenic qualities of island roads.
- Accommodate diverse modes of transportation.
- While safety of county roads is primary, the design, construction, and maintenance of roads should minimize adverse impacts on the scenic character of roadways provided by roadside trees, brush, and terrain, the routes themselves, and vistas from them.
- Establish standards for road improvements that are responsive to the preferences of island residents and that are in accordance with types and intensities of land-uses to be served as well as volumes of traffic to be accommodated.

- A thorough public participation program and interdisciplinary teams advisory to the county engineer should be included in the design phase of major projects. Adjacent property owners and other affected persons should be represented on interdisciplinary teams.

### 3.5.3 Visitor Uses

Visitors currently experience the natural resources of Cattle Point in a variety of ways. Motorists often stop at pullouts and pedestrians pause along the shoulder of the road to enjoy panoramic views of the San Juan Islands, the Cascade and Olympic mountain ranges, the Strait of Juan de Fuca, the Olympic Peninsula, and Vancouver Island. In Friday Harbor and Roche Harbor, visitors can rent a variety of unconventional motor vehicles including two and three-wheeled mopeds to travel throughout the island. Cattle Point is a popular destination for bicycling because of its views and relatively light vehicle traffic. The trail network is used by visitors and residents to experience the wide variety of natural and cultural resources in the area.

The NPS provides a year-round visitor center and interpretive opportunities including self-guided walks and hikes, as well as ranger-guided walks covering historical and natural themes. The trail system in the project area is often used for these programs.

During the summer, the number of visitors to San Juan Island greatly increases its population. Statistics for 2005 indicate that the island's population increased by about 40 percent during the tourist season (San Juan County 2005). The American Camp area averages from 140,000 to 200,000 visits per year, with the months of June, July, and August receiving the highest visitation (NPS 2008). The park also receives substantial visitation outside of the summer tourist season. During the slower months of November through February, the park typically receives about one-quarter of the monthly visitations of summer (NPS 2005).

In 2000, San Juan County estimated that approximately 253,000 cars traveled the Cattle Point and American Camp roads. About 100,000 cars (40 percent) traveled solely to park locations while the remainder traveled as far as the Cape San Juan residential area. The county estimates that traffic in the Cattle Point area will increase by 7.46 percent annually (San Juan County in NPS 2005a).

Currently, motorists in the Cattle Point project area use the road shoulder and pullouts for parking, standing, and walking to view the scenic vistas, wildlife, and other features that attract them to the area. These facilities are particularly important to visitors with limited mobility or limited time who can only enjoy the area by vehicle. Overlook pullouts are located in the NRCA on the east end of the project area and in the park, about 200 yards west of the project area (figure 3.18).

Formal trailhead parking for the Jakle's Lagoon and Mt. Finlayson trails is located further to the west of the project area. This parking area is popular for trail users year-round and is consistently full during the summer months (Peter Dederich, NPS, personal communication, 2008). Another popular destination on Cattle Point is South Beach, which is located west of the project area and south of Cattle Point Road. Vehicles, bicycles, and mopeds use the short gravel road to access a parking lot near the beach. Visitors stop to sightsee and walk the beach from the parking lot. Informal parking and trail access also occurs at the Jackson overlook (at the west end of the project area in figure 3.18)



Figure 3.18 - Parking areas, overlooks, and roads in Cattle Point

The Cattle Point Interpretive Area is located on a parcel of the NRCA property located on the east end of Cattle Point. This site includes a day-use recreation area and interpretive site with a parking lot and picnic area, as well as access to the rocky seashore (Alison Hitchcock, DNR, personal communication, 2009). This site is a popular stop for visitors to observe area resources and walk along the shore. A 27-acre parcel of BLM-managed property containing a trail network, interpretive signs and kiosk, as well as a functioning U.S. Coast Guard lighthouse, is located on the southeast tip of Cattle Point (Gregario Teague, BLM, personal communication email, February 5, 2009). These facilities attract interest by the general public as well as lighthouse enthusiasts.

### 3.5.4 Trail System

Cattle Point area trails are important to both visitors and residents. Trails provide a relaxed means to experience the area’s features up-close. Area trails are both formal and informal, with formal trails designated and maintained by government owner-agencies, and informal trails having no regular maintenance. Some trails cross jurisdictional property boundaries between the park and NRCA. Cattle Point peninsula contains a total of about 9 miles of trails (San Juan Trails Committee 2006).

NPS-designated trails throughout American Camp are mapped, signed, and widely used by visitors and residents. These trails allow access to historic points of interest, vistas, wildlife viewing, and other interesting features in the park. Some of the trailheads include vehicle parking. Adjacent NRCA trails connect to park trails and are also popular with visitors and residents. Trails on the NRCA and BLM property located at the southeast end of Cattle Point

are a stopping point for day-use visitors and residents accessing the seashore. Designated park and adjacent NRCA trails are shown in figure 3.19.

Commercial recreation vendors on the island publish maps showing trails and roads. These maps are distributed to island visitors at vehicle rental agencies, hotels, and other commercial establishments. The San Juan Island Trails Committee developed a San Juan Island Trails Plan in September 2006 ([www.sanjuanislandtrails.org/TrailsPlan.pdf](http://www.sanjuanislandtrails.org/TrailsPlan.pdf)) and is working with the park to develop connections to park trails. The county developed and adopted the Non-Motorized Transportation Plan in August of 2005.

Although there is no formal data on the number of trail users, based on the amount of trail-related public comments received during project scoping and on observations by agency and county staff, it is clear that the combined formal and informal trail system is widely used by both residents and visitors.

### **3.5.5 Transportation**

San Juan Island is isolated from the mainland road and rail systems. Boats, airplanes, and the car-ferry system provide the only means for travel and transportation of goods between the island and mainland. Cattle Point Road is the only road access between the east end of Cattle Point and the rest of San Juan Island, including Friday Harbor, which is the only major town on San Juan Island. Schools, emergency services, airport, and ferry terminal as well as most businesses and consumer goods are located in Friday Harbor. Cattle Point Road also provides access to a working U.S. Coast Guard navigational-aid lighthouse that is serviced regularly, as well as to private residences and county, park, BLM, and DNR lands and the resources they contain.

Travel to the mainland is important not only for visitors but for residents who conduct business and access goods and services not available on the island. The Washington State Ferries system provides the main means of access to the island at Friday Harbor. This year-round service has multiple daily trips and transports residents, tourists, vehicles, and goods.

The two main water access points for San Juan Island are Friday Harbor and Roche Harbor. There are also a number of small harbors and private docks on the island. On Cattle Point, there is a small protected marina and dock area at Fish Creek that serves a number of residents of Cape San Juan.

One commercial airline (which includes airport and seaplane service) and several charter airlines serve Friday Harbor. The airport accommodates commercial and private planes. Aircraft can also land at a small airstrip at Roche Harbor.



### 3.5.5.1 Existing Road System

Cattle Point Road begins at the intersection with Mullis Street and Argyle Avenue, south of the town of Friday Harbor. The road extends southeast through rural county and private land, through the national park and NRCA, back through private property, and ends at Cape San Juan (figure 3.20).

Cattle Point Road is the only road providing access to the east end of Cattle Point. Cattle Point residents depend on the road to access their homes, commute to work and school, and to obtain goods and services. The road provides access from Cattle Point to the airport and ferry system in Friday Harbor for transportation to and from destinations off the island.

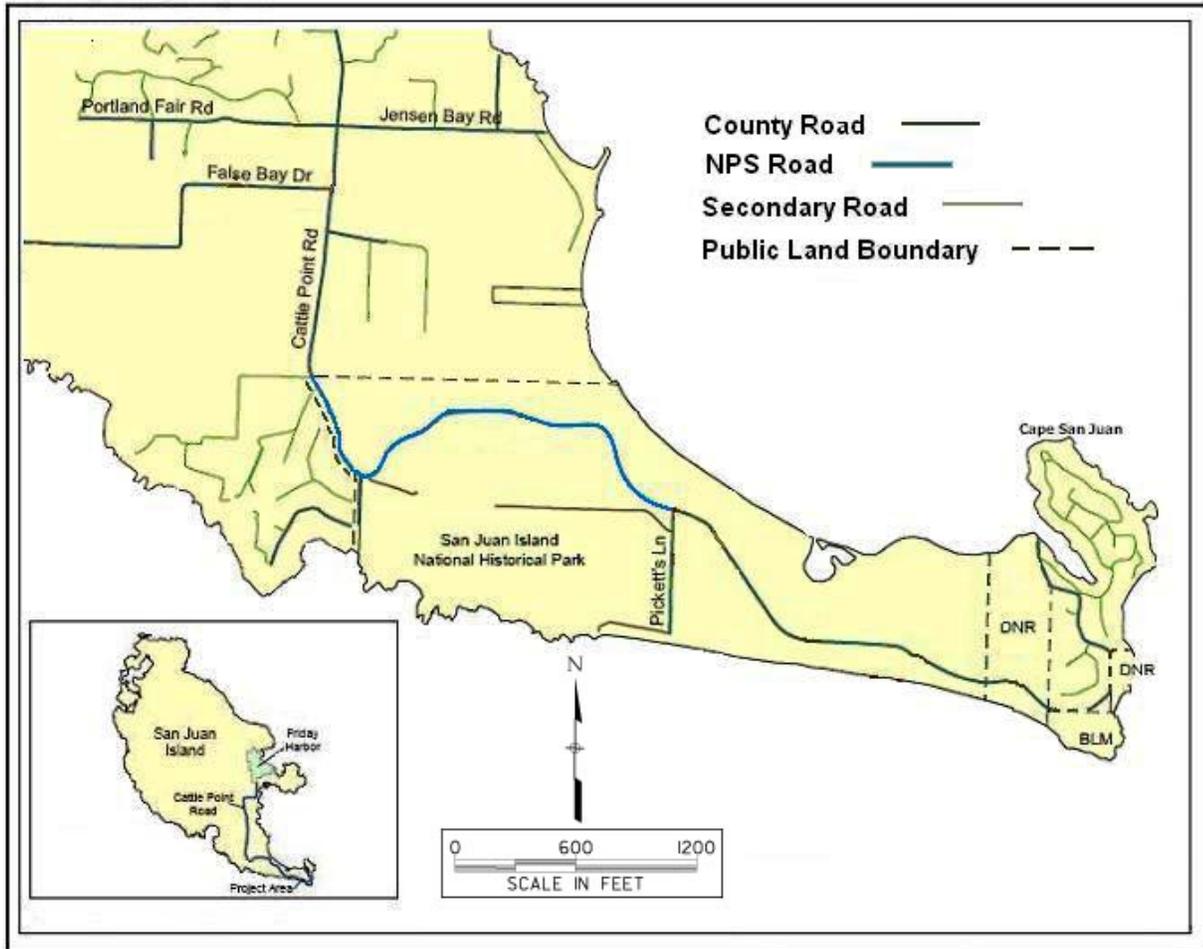


Figure 3.20 – Cattle Point road system (Russ Harvey, SJC Public Works, personal communication, email, May 6, 2008).

The road is used by pedestrians, bicyclists, and motorists. Residences are accessed primarily by vehicle, while recreational use involves all three modes of transportation. Pedestrians often use the road in conjunction with the trail system to enjoy the views and features of the area. Since bicycle use is restricted on much of the trail system, the road provides the only access for bicyclists to enjoy the area.

Cattle Point Road is designated by the county as a rural major collector route in good overall condition. The following information from San Juan County displays existing use and road conditions (Russ Harvey, San Juan County Public Works, personal communication, email, May

6, 2008). Average daily traffic is a measurement of the number of vehicles which use a highway over a period of a year divided by 365 to obtain the average for a 24-hour period.

Average Daily Traffic (2007):	574 vehicles per day
Projected Average Daily Traffic (2027):	940 vehicles per day (based upon 2.5%/year growth)
Road Classification:	Rural Major Collector
Terrain:	Rolling, grades to 6%
Current Posted Speed:	45 miles per hour
Estimated Travel Speed *:	45 to 55 miles per hour

\* Range is based on the 85<sup>th</sup> Percentile Speed, the range that includes an estimated 85% of user speeds

Cattle Point Road is managed by San Juan County and the National Park Service (NPS), depending on land ownership. The portion of the road north of the park boundary is owned and maintained by the county. From the park entrance eastward, the road is maintained by the county on lands owned by the park and DNR. The county retains a right-of-way on park land from Pickett's Lane east to the DNR boundary. Within the park, county maintenance is performed through an informal agreement between the county and NPS.

San Juan County has designated a section of Cattle Point Road as the Henry M. Jackson Scenic Drive, beginning at Pickett's Lane and ending at the DNR Interpretive Site. The proposed project is located within the scenic drive area. The scenic drive was designated by a resolution of the San Juan County Board of County Commissioners on June 9, 1987. The resolution documents the designation and directs that two scenic overlooks (referred to as "vistas" in the FEIS) be developed depicting major scenic views commemorating the role of the late Senator Jackson in his conservation leadership. In addition, in 2008 the state designated the Cattle Point Road as part of the San Juan Islands Scenic Byway.

Cattle Point Road is classified by the NPS as a public use park road and intended for the primary use of visitors for access into and within a park. The public use park road classification includes all roads that provide vehicular access for visitors, or access to such representative park areas as points of scenic or historic interest, campgrounds, picnic areas, trailheads, and similar features. In addition, the road provides access for the park's administrative needs.

### 3.5.5.2 Special Vehicles, Bicycles, and Pedestrians

Historic features, natural resources, and spectacular vistas in the park and NRCA have created a destination for recreational visitors. Two and three-wheeled mopeds or "scoot cars" (figure 3.21), pedestrians, and bicyclists are all routine users of island roads including the Cattle Point Road. These vehicles travel at considerably slower speeds than standard motor vehicles, particularly when climbing grades. They use road shoulders where available and make frequent stops to enjoy the area resources. These road users can present safety issues and conflicts with other motor vehicle users. Mopeds can be rented at several locations in Friday Harbor and Roche Harbor. One popular travel route for these vehicles is from Friday Harbor along Cattle Point Road to South Beach, just west of the project area.



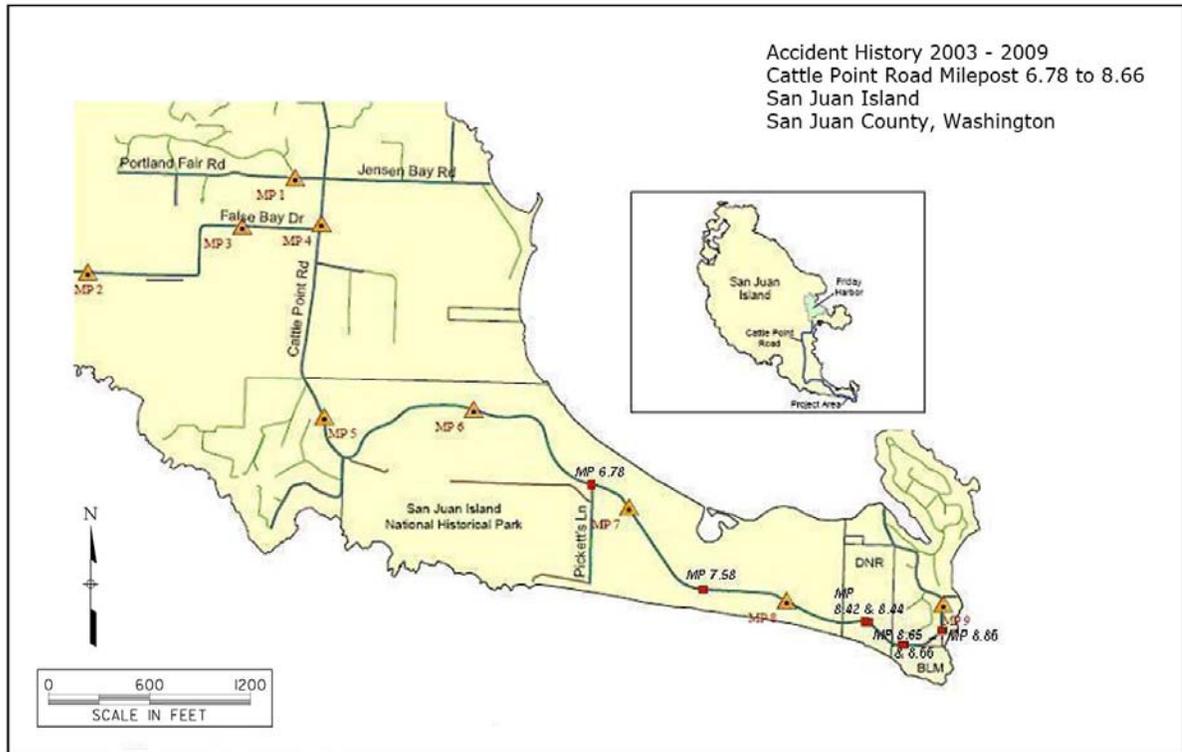
*Figure 3.21 - Three-Wheeled moped or “scoot car” (source: susiesmopeds.com)*

Bicycling is also very popular on San Juan Island, and Cattle Point is no exception because it provides moderate terrain with limited vehicular traffic and spectacular vistas. Pedestrians often use the road as they explore from their vehicles or make a loop to a hiking trail. Commuting by bike or foot through the project area does not likely take place in large numbers due to the distance to Friday Harbor (approximately 10 miles from Cape San Juan) and other business destinations. Recent fuel cost increases may increase use of non-motorized commuting.

#### 3.5.5.3 Road Safety

Cattle Point Road is made up of long curves and moderate grades (less than 6 percent). Within the project area, the roadway consists of two paved lanes, 11 to 12 feet in width with gravel shoulders or no shoulders. A section of guardrail at the eroding bluff and slopes on either side of the road through the project area prevent vehicle travel off the road surface. Northwest of the project area, the county recently reconstructed the roadway with two 11-foot travel lanes with 4-foot-wide paved shoulders.

Figure 3.22 shows accident locations on the Cattle Point Road near the project area from January 1, 2003 through August, 2009. During this time period, there were six reported vehicle accidents from MP 6.0 to MP 9.0, including one fatality at MP 8.42. Only one of these accidents was within the project area, which is located from approximately MP 7.4 to MP 8.3. There have been no reported accidents in the area since 2007. It is reasonable to assume that there have been a number of minor vehicle-animal collisions that have been unreported (Russ Harvey, JSC Public Works, personal communication, email, May 6, 2008).



**Figure 3.22 - Accident locations designated by ■ (Russ Harvey, SJC Public Works, personal communication, email, May 6, 2008)**

Using the 2007 Average Daily Traffic rate of 574 for the area from MP 6.0 to 9.0, the accident rate for this portion of the Cattle Point Road is estimated to be about 1.67 per million vehicle miles. The accident rate for San Juan County is 2.84 accidents per million vehicles miles traveled (WSDOT, current traffic data personal communication, email, 2008). These figures indicate that the accident rate for this stretch of Cattle Point Road is lower than the county-wide average.

Of the seven reported accidents near the project area, six were attributed to driver error and one to driving under the influence. The accident at MP 6.78 involved a vehicle passing mopeds then making a right turn in front of them, with the moped striking the vehicle. The accident at MP 8.66 involved a school bus backing into another vehicle. The remaining five accidents involved the driver losing control of the vehicle. Two of these accidents, one involving a fatality, occurred in nearly the same location near a curve at MP 8.42 and 8.44, and were both attributed to speeding. See figure 3.23 for accident details.

<i>Date</i>	<i>Milepost</i>	<i>Non-Injury</i>	<i>Injury</i>	<i>Fatal</i>	<i>Vehicles</i>	<i>Contributing Factor</i>
11/8/03	8.44	x			1 car	Speed too fast for conditions
1/17/04	7.58		1		1 car	Speed too fast for conditions
5/24/05	8.66	x			1 car, 1 bus	Improper backing
8/12/06	6.78	x			1 car, 1 moped	Improper turning
3/5/07	8.42		1	1	1 car	Speed too fast for conditions
6/9/07	8.65	x			1 car	Impaired driving

*Figure 3.23 – 2003 through August 2009 accidents between MP 6.78 and 8.66 (source San Juan County 2008)*

Road design standards indicate that the existing road width and sight distance are sufficient for the types of vehicles using the road (San Juan County 2008). Weather, wildlife, natural obstacles, and the presence of pedestrians, bicycles, and unconventional motorized vehicles represent potential safety hazards on and near the road. The narrow or non-existent road shoulders present a hazard to bicyclists, pedestrians, and mopeds.

### **3.5.6 Socioeconomics**

#### **3.5.6.1 Population and Demographics**

San Juan County, the smallest of Washington’s 39 counties, has a population of just over 15,000 people (U.S. Census Bureau 2000). San Juan Island itself has about 7,000 residents, including over 2,000 living in the town of Friday Harbor.

San Juan County is one of the fastest growing counties in Washington. During the 20-year period from 1980 to 2000, the population grew by nearly 80 percent (from 7,838 to 14,077). Of the 6,239 residents gained during that time period, only 378 (6 percent) were the result of natural population increases; the remaining 5,872 (94 percent) resulted from net in-migration. Projections for 2000 to 2025 estimate a gain of 8,457 residents. Though the natural population is expected to decrease by 3,477 during that time, these figures will be more than offset by an expected net in-migration of 11,934 people (U.S. Census Bureau 2000; Washington State 2008).

The demographics of population change in San Juan County are unique. The island environment leads to gentrification, where the population is made up of seniors and the wealthy. Most people do not move to the island to work, but to live and, in many cases, to retire. As a result, San Juan County has the highest proportion of elderly people in the state. In 2000, the median age of islanders was 47.4 years, compared to 35.3 years for the state of Washington (U.S. Census Bureau 2000).

This demographic change in age and income is more dramatic in San Juan County than mainland counties experiencing the same phenomenon. Typically, as people in lower income

brackets are displaced by the economics of land value and income, they move outward toward rural and less expensive property. Because this is not possible on an island, the economic diversity of the San Juan Island community has diminished.

The racial composition of San Juan County has changed subtly from 1990 to 2000. Whereas the white population comprised nearly 98 percent of the residents in 1990, ten years later the estimated share of the population had decreased to about 95 percent. This change is the result of an increase (135 percent) in the number of non-white residents being offset by an increase in the number (36 percent) of white residents. All racial classes registered positive growth during the decade. The county's largest non-white population, the Hispanic population, grew by about 180 percent, though it still only represents 2.4 percent of the total population.

When compared to statewide statistics, Hispanic, Asian, and African American populations are appreciably underrepresented in the population of San Juan County as well as in visitation to the park. At 0.8 percent, the percentage of Native Americans in the county is less than the state average of 1.6 percent (U.S. Census Bureau 2000).

Information on demographics specific to Cattle Point is not available; however, there is no indication that minority populations in the project area are higher than the rest of the county.

#### 3.5.6.2 Local Industry

Although agriculture was formerly the dominant industry in the county, presently, wholly agricultural lands constitute only 12 percent of the total acreage. Although a number of large farming and grazing tracts remain in the ownership of long-term residents, the goal of these individuals is generally land retention rather than productivity. In addition to agriculture, the early economy of the island was fueled by commercial fishing, timber harvesting, and limestone mining. All of these industries have given way in the post World War II era to tourism and recreational services, which are now by far the largest industries in the county (San Juan County Profile September 1999).

Today, tourism industries, including services and retail sales, account for as much as half of the island's jobs. Other noteworthy employers include government and construction. Manufacturing and resource harvesting industries such as farming and fishing make up a small percentage of employment.

Employers in the project vicinity include the National Park Service as well as a few home businesses located within the residential areas of Cattle Point Estates and Cape San Juan. The immediate project area is park and DNR property, which is undeveloped, with no businesses or other industry present; though tourism-based industries are supported by visitors who travel to Cattle Point.

The park is one of many attractions on the popular tourist destination of San Juan Island. Park visitors spend money on the island, which generates direct personal income for local residents and supports jobs in area tourism businesses. According to NPS Social Science Program modeling, the park's annual economic benefit to the community is over 15 million dollars based on a visitation of about 250,000 for fiscal year 2005. Twenty percent of park visitors surveyed estimated their total expenditures during their visit to be \$250 or more. The average visitor group expenditure was \$169, or \$51 per capita (NPS 2008).

### 3.5.6.3 Employment and Income

According to the 2000 Census, the San Juan County civilian labor force totaled 6,822 individuals, with an average unemployment rate of 3.2 percent. This is less than the unemployment rate for the state of Washington, which averaged 6.2 percent in 2000.

The poverty rate for families in San Juan County stands at 6 percent, whereas the average rate statewide is 7.3 percent. The poverty rate for individuals in San Juan County is 9.2 percent, compared to 10.6 percent for the state as a whole. For individuals over 65, the poverty rate is 3.1 percent, appreciably lower than the state rate of 7.5 percent and likely a reflection of the relatively affluent retired segment of the county's population.

The Cattle Point area contains waterfront property and luxury homes, indicating property values consistent with or higher than county averages. This is confirmed by a sampling of individual home values from the County Assessor's interactive property value map (Paul Dosset, San Juan County Assessor, personal communications, November 7, 2005). Because of high property values, it is likely that Cattle Point area residents and landowners are retired or have higher incomes. Although there is no census data available specifically for Cattle Point, there are no known disadvantaged or impoverished populations in the Cattle Point community. No survey or interview data exist for the racial makeup of park visitors or the percentage of park visitors who are unemployed or in poverty.

### 3.5.7 Environmental Justice

Executive Order 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*) requires that federal agencies incorporate environmental justice into their missions by identifying and addressing whether their programs or policies have a disproportionately high or adverse human health or environmental effect on minorities and low-income populations or communities.

The closest and most concerned public in the project area are the residents living east of the project in Cattle Point Estates and Cape San Juan subdivision. The Cattle Point Road is the sole road access for these residents to and from their homes. Island visitors also use the Cattle Point Road to access the natural and historic resources of the area. The tourist industry accounts for a substantial portion of the economic base of the area, and any impacts to this industry would affect those employed by it as well.

There are no known statistics specifically for the Cattle Point area regarding minority and low-income populations; however, it is highly unlikely that members of these groups are found in numbers greater than the general population in the project area.

### 3.5.8 Relocation

All project alternatives are located on undeveloped park and DNR property. There are no residences or public structures in the project area other than the road itself; therefore, no relocation would be required.

### 3.5.9 Public Health and Safety

Emergency services are provided by the San Juan County Public Health Department, County Sheriff, San Juan County Fire District No. 3, and San Juan Island Emergency Medical Services Hospital District No. 1 (ambulance service provider).

Medical services are available at the Inter Island Medical Center in Friday Harbor. This facility provides daytime medical services and nighttime doctor contact services. Medical services are limited to general practice and do not include specialized care, major surgery, or emergency care.

Major medical services are located off-island, involving personal transport via the ferry, commercial air transport, or by emergency air evacuation from Friday Harbor Airport. Helicopters are also used for major emergencies.

Cattle Point Road is the primary access for all fire, law enforcement, and emergency medical services for residents of the Cattle Point area. Helicopter access is possible in a number of locations. Float planes and small vessels can dock at the marina and shore landing is possible at a few sites.

### **3.5.10 Utilities**

The road provides a corridor for the utilities serving the Cape San Juan and Cattle Point subdivisions. Electrical power, phone, cable television, and internet lines are buried beneath the road shoulders within the road corridor.

These utilities exist within the road corridor under the authority of a utility franchise issued by San Juan County. For purposes of this analysis, it is assumed that utilities would be relocated along with the road, and that a legal easement would be negotiated for that purpose.

## **3.6 OTHER RESOURCES**

### **3.6.1 Hazardous and Solid Waste and Materials**

The EPA administers hazardous waste regulations through both the Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The EPA's website ([www.epa.gov/superfund/sites/npl/wa.htm](http://www.epa.gov/superfund/sites/npl/wa.htm)) was consulted to determine hazardous waste producers, users, and site information. The list includes sites on the National Priorities List, CERCLA Library Sites, and licensed sites for generation, use, and storage. No waste sites were identified in the project area or on the island. There are 13 hazardous waste users registered on the island, but none is located in the project area. The history of the area is well documented and researched. There have been no commercial, industrial, or other activities that would have produced or disposed of hazardous waste. The county currently transfers solid waste generated by residential and commercial use off of the island for disposal and recycling.

### **3.6.2 Energy**

Fossil fuel is the only natural or depletable energy resource use related to the road. Fossil fuel is used by motor vehicles traveling the road and for periodic roadway maintenance. Fuel and oil are delivered to San Juan Island by trucks. Full fuel trucks are transported to the island by barge and empty fuel trucks return to the mainland on the ferry system. Because of high transport costs, fuel prices on the island are higher than on the mainland.

The residents at Cattle Point use energy for residential electricity and heating, most of which is delivered through the electrical utility line in the existing road corridor. This electricity is transferred from energy sources to the island by Orcas Power and Light Cooperative electrical

cable. The electricity comes from a wide variety of energy sources. In general, about two-thirds of the energy in Washington comes from hydroelectricity, followed by coal, natural gas-fired, and nuclear-powered electrical generation. Other renewable electricity sources account for less than two percent of production (State of Washington 2007).

### **3.6.3 Noise**

The National Park Service Organic Act mandates the preservation and/or restoration of natural resources within parks, including the acoustical environment. The acoustical environment can be defined as the actual physical sound resources, regardless of audibility, at a particular location. Natural, cultural, and historic sounds are important components of the many national park units. Natural sounds can include wildlife, water, vegetation, or weather sounds. These sounds are important to the protection of wildlife and their natural setting as well as visitor experience and enjoyment. Intrusive sounds are of concern because they sometimes impede the ability of the NPS to accomplish its mission. NPS Directors Order 47 details the value of the natural soundscape and implements measures to preserve park soundscapes through planning and management activities.

Federal regulations for transportation noise standards (23 CFR 772) classify *Noise Abatement Criteria* for construction noise for different land use types. The project area is categorized as undeveloped, which places it in Activity Category D per 23 CFR 772.19, with no noise limits specified.

Although noise limits are not specified, wildlife, visitors, and residents of the Cattle Point area currently enjoy a soundscape with low levels of human-caused noise. Current traffic noise usually consists of an intermittent passing vehicle. Planes frequently generate noise while flying overhead on their way to and from the Friday Harbor Airport. Sounds from pedestrians and bicyclists generate negligible noise. Offshore, motorboats and ships generate noise, especially during summer months when whale-watching tours and salmon fishing are common.

The area's natural soundscape consists mainly of wind-generated noise, as the exposed land is often buffeted by strong winds. Birds and other animals create low-level noise. Marine mammals can occasionally be heard offshore.

### **3.6.4 Light**

NPS 2006 *Management Policies* identify lightscapes as an important natural resource with a policy to preserve, to the greatest extent possible, the natural lightscapes of parks. Natural lightscapes, including dark night skies, are not only a resource unto themselves, but can be an integral component of the park experience. There is no artificial lighting on or around the project area, other than an occasional passing vehicle and distant residences on Cattle Point. There is some light generated from the city of Victoria, British Columbia, visible in the sky to the west. The natural darkness is a key component to the Cattle Point environment. Nocturnal animals use the darkness for their survival, and views of the night sky are valued by human visitors and residents.

### **3.6.5 Prime and Unique Farm Lands**

Prime and unique farm lands are protected by the Farmland Protection Policy Act. The purpose of the Act is to minimize the impact of federal projects on the irreversible conversion of farmland to nonagricultural uses.

The most recent soil survey by the Natural Resources Conservation Service (NRCS) identifies one small piece of land in the project area that would classify as prime farmland if irrigated (websoilsurvey.nrcs.usda.gov). The area is located on the flat ridgeline of Mt. Finlayson. No agriculture has taken place in the project area during recent decades. No suitable water source exists for potential irrigation, and farming is not compatible with the purposes for which the park and NRCA are managed.

### **3.6.6 Coastal Zone**

Washington's coastal zone is comprised of fifteen counties, including San Juan County. The coastal zone includes all lands in the coastal counties and waters from the coastline seaward for three nautical miles. In addition, the Washington State Shoreline Management Act applies to all *shorelines of the state* including *shorelines of statewide significance*. *Shorelines* include all marine waters, and extend 200 feet landward from the edge of marine waters. All waters of the Strait of Juan de Fuca have been identified as *shorelines of statewide significance* (Revised Code of Washington RCW 90.58).

The Coastal Zone Management Act (CZMA) specifically excludes lands held in trust by the federal government (16 USC 1453 Section 304). However, actions excluded from the coastal zone may affect land or water uses or natural resources outside of the excluded area and therefore are subject to provisions of the CZMA.

The Coastal Zone Management Act (CZMA) programs are aimed at the "wise use" of the land and water resources of the coastal zone, while fully considering ecological, cultural, historic, and aesthetic values, as well as the need for compatible economic development. Washington's Coastal Zone Management Program is administered by the WDOE Shorelands and Environmental Assistance Program.

Activities and development affecting Washington's coastal resources which involve federal actions or permits must be evaluated for compliance with the CZMP through a process called *federal consistency* (Section 307). This requires that activities of federal agencies be consistent to the maximum extent practicable with the enforceable policies of CZMA management programs.

The project area is located within Washington's coastal zone.

### **3.6.7 4(f) Resources**

The Department of Transportation (DOT) Act of 1966 includes a special provision, Section 4(f), which stipulates that the FHWA and other DOT agencies cannot approve the use of land from publicly-owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless:

- There is no feasible and prudent avoidance alternative to the use of the property.
- The action includes all possible planning to minimize harm to the property resulting from the use.
- The FHWA determines that use of the property, including any measures to minimize harm, will have a *de minimis* impact on the property.

Section 4(f) was codified under Title 49 United States Code (U.S.C.) Section 1653(f) (Section 4(f) of the USDOT Act of 1966). In 2005, the Safe, Accountable, Flexible, and Efficient

Transportation Equity Act: A Legacy for Users Act (SAFTEA-LU) made the first substantive revision to Section 4(f) since 1966. Under Section 6009 of SAFTEA-LU, once the DOT determines that a transportation use of Section 4(f) property results in a *de minimis* impact, analysis of avoidance alternatives is not required. *De minimis* impacts on publicly owned parks, recreation areas, and wildlife and waterfowl refuges are defined as those that do not “adversely affect the activities, features, and attributes” of the Section 4(f) resource. *De minimis* impacts on historic sites are defined as those that will have “no adverse effect” on the historic property.

The national park is considered to be a Section 4(f) resource as a publicly-owned park; however, park roads are exempt from Section 4 (f) requirements under 49 U.S.C 303(c). A park road is defined as a public road that is located within, or provides access to, an area in the National Park System with title and maintenance responsibilities vested in the United States (23 U.S.C. 101(a)(19)). The county retains ROW for a portion of the Cattle Point Road within the park, from Pickett's Lane eastward to the DNR boundary, and the county may be granted ROW and take responsibility for maintenance if a new alignment is chosen. As a result, the exemption cannot be applied at this time.

The entire park is listed on the National Register of Historic Places as a National Historic Landmark, and as such, is also considered to be a Section 4(f) resource as an historic site.

A section of trail connecting the Mt. Finlayson trail with the Cattle Point Road would be obliterated by the proposed road alignment. The Mt. Finlayson trail is located on park and DNR property; however, the section of trail that would be directly affected is located on DNR property and would be considered a Section 4(f) resource as a publicly-owned trail.

Realignment of the Cattle Point Road would use land within the park, historic site, and trail for transportation purposes.