Chapter 1

Purpose and Need for Action

Introduction

This Draft Environmental Impact Statement/Environmental Impact Report (DEIS/DEIR) has been prepared to assist the public, the National Park Service (Park Service), and the California State Lands Commission (CSLC) in formulating a wetlands restoration plan for the Waldo Giacomini Ranch (Giacomini Ranch) and Olema Marsh. Together, the Giacomini Ranch and Olema Marsh represent the Project Area for the Giacomini Wetland Restoration Project (hereinafter referred to as the proposed project).

This document has been prepared in accordance with both the 1969 National Environmental Policy Act (NEPA) and the 1970 California Environmental Quality Act (CEQA). The intent of both NEPA and its California counterpart, CEQA, is to help local, state, and/or federal agencies make informed decisions regarding the environmental impact of proposed actions. As required by NEPA and CEQA, this DEIS/EIR analyzes a full range of alternatives that could meet the objectives for the plan — that is to restore wetlands and to create public access opportunities within the Project Area — and presents a comparison of the probable impacts of implementing each.

The Project Area is located approximately 40 miles northwest of San Francisco in Marin County, California (Figure 1). The Giacomini Ranch lies at the southern end of Tomales Bay, a 6,800-acre, 12-mile-long, approximately 1-mile-wide estuarine embayment that runs along Point Reyes National Seashore (Seashore)'s northern perimeter (RWQCB 2001; Figure 2). The towns of Point Reyes Station and Inverness Park border the Project Area to the east and west, respectively. Lagunitas Creek, the largest subwatershed within Tomales Bay, bisects the Giacomini Ranch into the East and West Pastures. Olema Marsh is located directly south of the Giacomini Ranch at the downstream end of Bear Valley Creek before its confluence with Lagunitas Creek.

The Park Service is acting as the lead NEPA agency and principal project proponent and manager. The Park Service owns approximately 550 acres of the Giacomini Ranch (Figure 2). The portion of Lagunitas Creek in between the Giacomini Ranch's East and West Pastures and the undiked or unleveed tidal lands north of the Giacomini Ranch are owned by the CSLC and have the potential to be affected by the proposed project (Figure 2). CSLC has agreed to participate as the lead under CEQA. The Park Service also owns approximately 50 percent of Olema Marsh. Two of the five proposed alternatives involve restoration of the 63-acre Olema Marsh, which is also partially owned by the non-profit organization, Audubon Canyon Ranch. Audubon Canyon Ranch is actively working with the Park Service and CSLC on the proposed project. The Park Service and CSLC have also been working collaboratively with the County of Marin Public Works department and the County of Marin Parks and Open Space district, as well as the Gulf of the Farallones National Marine Sanctuary, whose jurisdiction extends into the southern portion of Tomales Bay.

Excessive sedimentation in the Tomales Bay watershed during the late 1800s from logging and agricultural development resulted in large-scale conversion of subtidal and unvegetated intertidal aquatic habitats to vegetated intertidal marsh, nearly doubling wetland acreage in the bay. Many of these tidal marshes were subsequently disconnected by construction of berms or earthen "walls" for roads, railroads, livestock ponds, and duck clubs that isolated marshes both hydrologically and ecologically from Tomales Bay.

These hydrologic and topographic alterations not only often converted salt marsh to freshwater marsh or even upland or non-wetland habitats, but substantially reduced the functionality of these marshes in terms of storing floodwaters, dissipating the energy of flood flows, improving water quality, and supporting wildlife. The largest loss of hydrologically connected wetlands came with diking of approximately 550 acres for operation of the Waldo Giacomini dairy ranch and pastures in 1946. Since then, the Project Area has been subjected to numerous hydrologic and topographic changes or alterations to improve operation of the dairy, including construction and maintenance of levees, tidegates, and culverts to exclude tides and restrict creek flow; ditching and straightening of creeks; frequent dredging of ditches and creeks; spreading of manure; irrigation of pastures to improve forage; and grazing.

A large portion of Tomales Bay watershed lands were acquired by the Park Service in the 1960s and 1970s for establishment of two neighboring parks -- Point Reyes National Seashore (Seashore) and Golden Gate

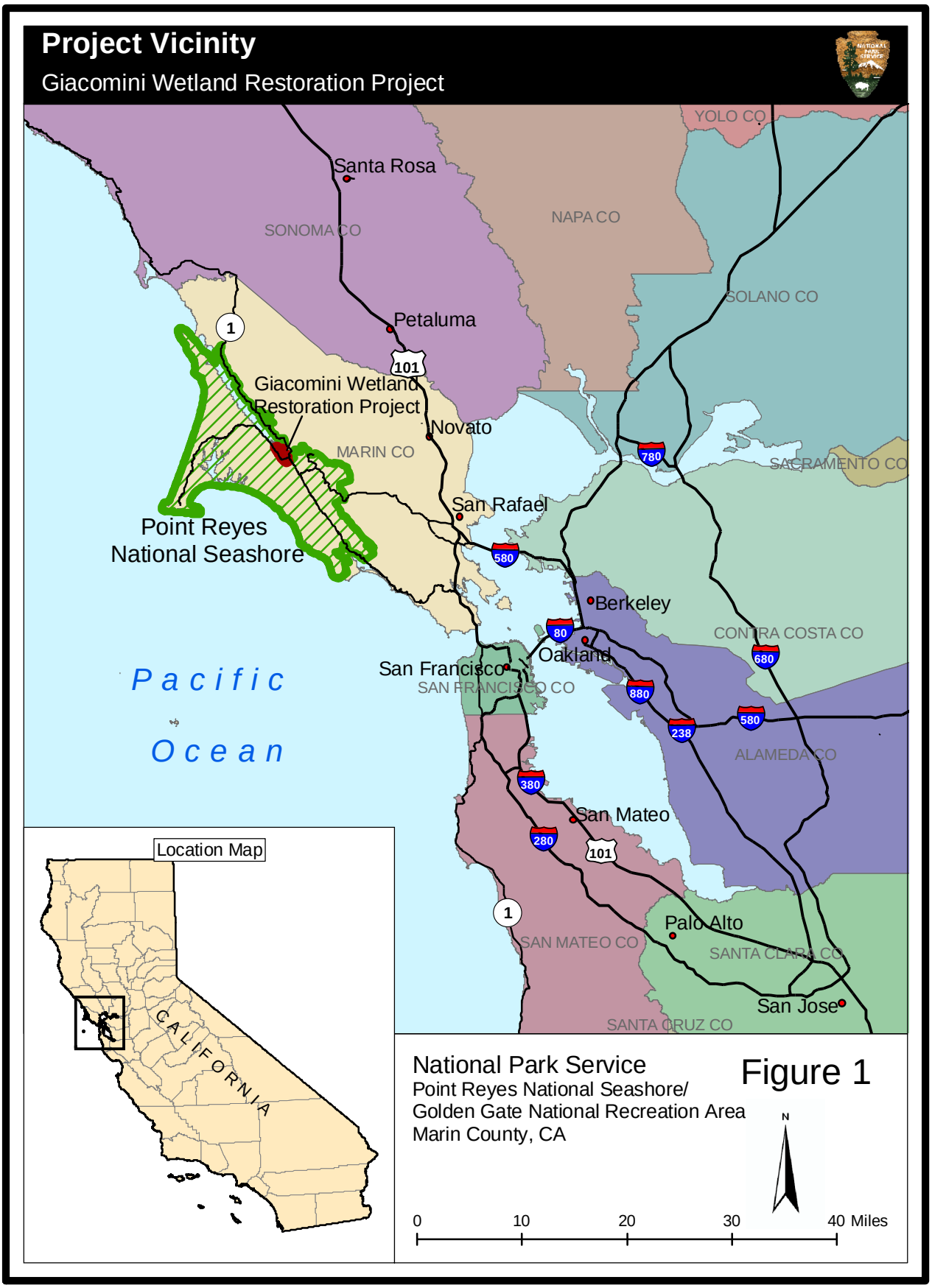
National Recreation Area (GGNRA). In 1980, the boundary for GGNRA was expanded to include the Giacomini Ranch and the eastern portion of Tomales Bay. The Giacomini Ranch falls within the north district of the GGNRA, which is administered by the Seashore. For several decades, the Park Service discussed purchase of the ranch with the Giacomini family for the purposes of restoring the historic coastal marsh, however, funding did not become available until the early 1990s. The ranch was eventually acquired in February 2000 with a combination of Congressional appropriations and state monies. State funding was secured from the California Department of Transportation (CalTrans), which transferred funds to the Park Service for purchase, planning, and implementation of a restoration project in exchange for the Park Service assuming wetland mitigation obligations for impacts associated with a repair of State Route 1 in the coastal portion of Marin County.

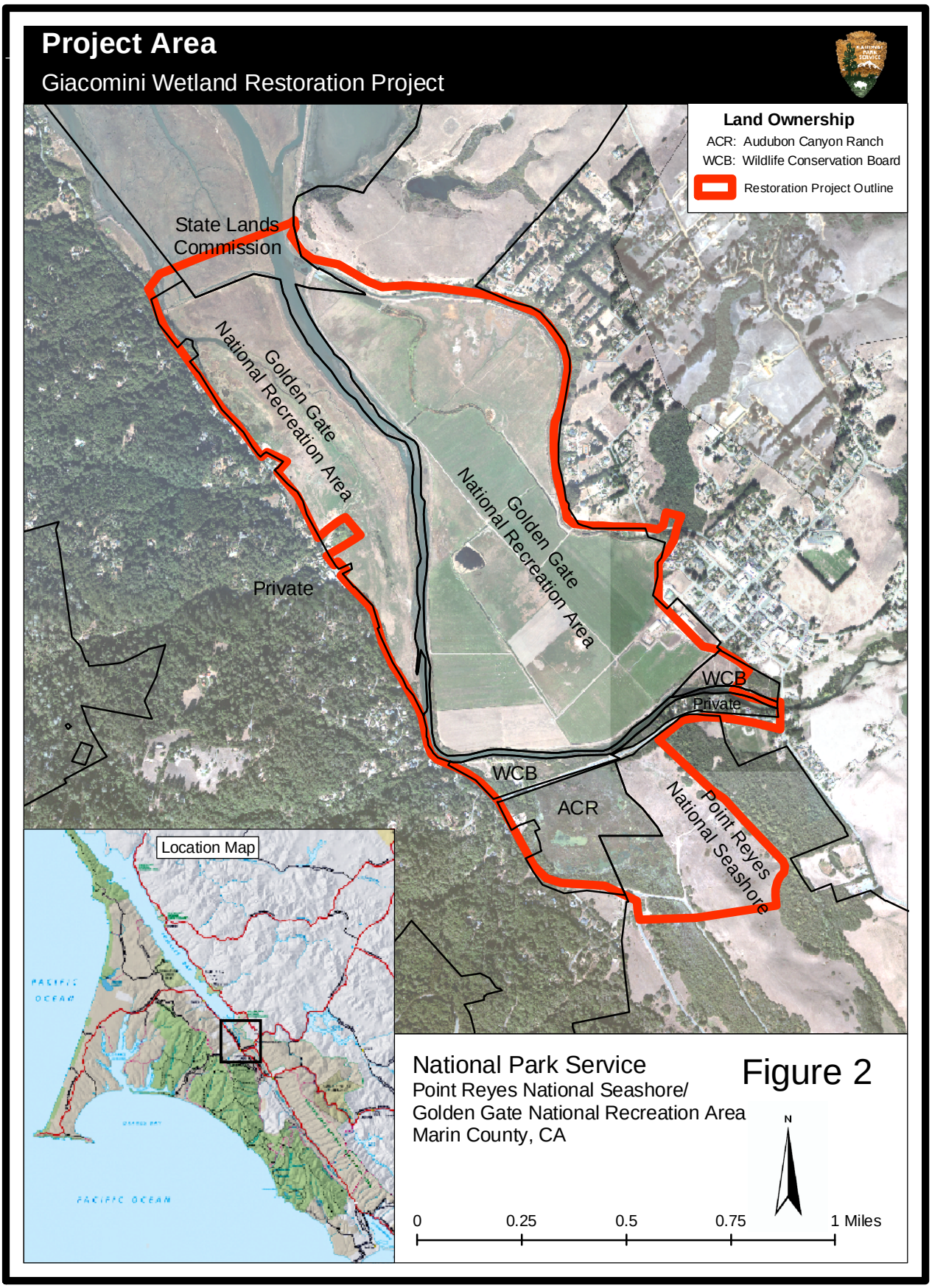
The purpose of the proposed project is to restore natural hydrologic and ecological processes and functions on a significant portion of the Project Area.

While the Park Service is required under its agreement with CalTrans and regulatory agencies to mitigate only a small amount of wetlands, the purpose of the proposed project is to restore natural hydrologic and ecological processes and functions on a significant portion of the Project Area. Natural hydrologic processes include marine-influenced tidal action with the daily ebb and flood of tides and fluvial or creek action, which encompasses the seasonal cycle of freshwater flow, as well as overbank flooding onto floodplains and movement of the creek channel during storm events. These hydrologic processes drive important wetland functions that benefit both wildlife and humans such as floodwater storage, water quality improvement, groundwater recharge, food production, and wildlife habitat. The Park Service has developed a range of alternatives for the Giacomini Ranch and Olema Marsh that vary in the amount of levee or berm removal, removal or modification of hydrologic control structures such as culverts and tidegates, habitat enhancement and creation, and public access opportunities.

Restoration will not only improve natural resource conditions on the Giacomini Ranch, thereby increasing the value of resources on Park Service lands and contributing to fulfillment of the Park Service's mission of protection, conservation, and restoration of natural resources, including wetlands. It will also contribute to the health of the entire Tomales Bay watershed by increasing functionality of the Giacomini Ranch wetlands, supporting the Park Service's commitment to managing parks as part of an integrated landscape with other public and private lands (NPS 2006, Section 4.1.4). While perceived as pristine, Tomales Bay has been declared impaired under Section 303(d) of the Clean Water Act by the San Francisco Regional Water Quality Control Board (RWQCB) for excessive sediment, nutrients, pathogens, and mercury.

Two-thirds of the freshwater inflow — and potentially the principal sediment, nutrient, and pathogens source — to Tomales Bay flows through the Project Area (Fischer et al. 1996). By restoring natural hydrologic processes through removal of levees, tidegates, and culverts, floodwaters of Lagunitas Creek carrying sediment, nutrients, and other pollutants will able to flood onto its historic floodplains to be filtered and transformed by the restored wetlands, thereby improving downstream water quality. These restored wetlands would not only benefit water quality and increase habitat and food resources for wildlife within the watershed, but would provide opportunities for public enjoyment and education through inclusion of public access trails, viewing overlooks and platforms, and interpretative exhibits.


Project Vicinity
Giacomini Wetland Restoration Project
Santa Rosa
SONOMA CO
NAPA CO
YOLO CO
SOLANO CO
Petaluma
101
1
Giacomini Wetland Restoration Project
Novato
MARIN CO
780
SACRAMENTO CO
San Rafael
Point Reyes National Seashore
580
Berkeley
80
Oakland
CONTRA COSTA CO
680
San Francisco
SAN FRANCISCO CO
880
238
580
ALAMEDA CO
Pacific Ocean
380
San Mateo
280
101
1
Palo Alto
SAN MATEO CO
SANTA CLARA CO
San Jose
SANTA CRUZ CO
Location Map
CALIFORNIA
National Park Service
Point Reyes National Seashore/
Golden Gate National Recreation Area
Marin County, CA
Figure 1
N
0
10
20
30
40 Miles


Project Area
Giacomini Wetland Restoration Project
Land Ownership
ACR: Audubon Canyon Ranch
WCB: Wildlife Conservation Board
Restoration Project Outline
State Lands Commission
Golden Gate National Recreation Area
Golden Gate National Recreation Area
Private
WCB
Private
WCB
ACR
Point Reyes National Seashore
Location Map
PACIFIC OCEAN
PACIFIC OCEAN
National Park Service
Point Reyes National Seashore/
Golden Gate National Recreation Area
Marin County, CA
Figure 2
N
0
0.25
0.5
0.75
1 Miles

Need for Proposed Project

Commercial, residential, and agricultural development has caused loss of more than 91 percent of California's historic coastal wetlands (Dahl 1990). While development has not affected Tomales Bay to the extent it has other watersheds in California, a large percentage of the coastal tidal wetlands once present in Tomales Bay have been lost or substantially altered through diking or construction of levees for roads, railroads, livestock ponds, and duck clubs. In the late 1800s, excessive sedimentation from logging and agricultural development resulted in large-scale conversion of subtidal and unvegetated intertidal aquatic habitats in Tomales Bay to vegetated intertidal marsh. Wetland acreage in the bay nearly doubled from 584 acres in 1863 to 944 acres in 2001 (Parsons and Allen 2004c). On the eastern side of Tomales Bay, many tidal marshes that fringed the bay were diked for construction of the North Pacific Coast Railroad line to the Russian River in Sonoma County or roads such as State Route 1 (Figure 2). At the turn of the 20th century, the 63-acre Olema Marsh and the downstream portions of Bear Valley Creek were substantially altered by construction of two roads-- Bear Valley Road and Levee Road (i.e., southeastern portion of Sir Francis Drake Boulevard between Highway 1 and Bear Valley Road) – either along its perimeter or across the marsh's mouth to Lagunitas Creek (Figure 2). Bear Valley Creek and Olema Marsh were further impacted by dams used to impound the creek for operation of a duck club (KHE 2006a).

The largest impact to the Tomales Bay watershed, however, came in 1946 with diking and draining of approximately 550 acres of historic tidal marsh at the southern end of Tomales Bay for operation of the Giacomini Ranch, a large-scale dairy operation. The former marsh represented approximately 58 percent of the historic wetlands once present in Tomales Bay and was once an integrated tidal wetland complex with Olema Marsh. Since the 1860s, levees have almost completely disconnected Giacomini Ranch and Olema Marsh hydrologically from Lagunitas Creek. Disconnection of Olema Marsh from Lagunitas Creek has been exacerbated by undersized or poorly functioning culverts. Levees have also eliminated connectivity between Giacomini Ranch and Tomasini Creek, which was completely moved of its historic channel alignment to increase the extent of pastures. Tidegates and culverts have dramatically reduced, if not entirely precluded, tidal influence from Tomales Bay in both the Giacomini Ranch and Olema Marsh. Fill or sediment disposal has either eliminated historic wetlands, such as in the White House Pool and Green Bridge County Parks directly south of the Giacomini Ranch, or caused impoundment of waters such as in Olema Marsh. In addition, the former marshes in Giacomini Ranch and Olema Marsh have been ditched to encourage drainage. Forage conditions for dairy cattle at the Giacomini Ranch were enhanced not only through improved drainage, but through seeding of pasture grasses and forbs and irrigation during the summer. Giacomini Ranch pastures have also been subject to varying degrees of manure spreading and mowing, as well as grazing.

The importance of wetlands comes from the valuable functions that these habitats provide to both humans and wildlife.

While diking has not eliminated wetlands from Giacomini Ranch and Olema Marsh, most of the important functions played by wetlands require that wetlands be hydrologically connected with both upstream and downstream water bodies. The importance of wetlands comes from the valuable functions that these habitats provide to both humans and wildlife. Wetlands, which include riparian or forested areas as well as marshes, can improve water quality and provide floodwater storage, food chain support, and wildlife habitat. Hydrologically connected wetlands -- or wetlands that are connected to upstream and downstream water bodies and have natural hydrologic processes -- have the potential to reduce the velocity and energy of storm-associated high tides and flood flows and often act as a temporary or long-term storage or detention basin for these waters, functioning as "floodplains." In addition, nutrients, sediment, pathogens, and contaminants carried by tidal or storm flows are often filtered out of waters and either assimilated by plants or incorporated into sediment. Perhaps, the most well-known role played by wetlands is that of wildlife habitat. Hundreds of species either live in wetlands or use them during certain periods of their life cycle for foraging, breeding, resting, or as a "nursery" during juvenile stages. In addition, wetlands support species in open water areas by exporting sources of carbon or food in the form of plant matter, seeds, plankton, invertebrates, and fish.

The number and value of wetland functions are often greatly reduced in diked or disturbed systems. Levees have dramatically reduced floodwater retention in floodplains of Lagunitas Creek and Tomasini Creek, with levees along Lagunitas Creek potentially exacerbating flooding of adjacent private properties. Removal of riparian vegetation during maintenance of levees has also decreased vegetation that helps to dissipate the energy of flood flows, leading to faster, more turbulent, and erosive flood flows. In Olema Marsh, steadily increasing water surface levels created by poor drainage of Bear Valley Creek flows have not only reduced the potential volume of floodwater that can be stored, but threaten to increase flooding of adjacent county roadways such as Levee Road and Bear Valley Road.

While the Giacomini Ranch and Olema Marsh are still largely wetland and home to at least two federally listed threatened or endangered species, their value to the larger Lagunitas Creek and Tomales Bay ecosystems has been greatly diminished by land degradation and the lack of hydrologic connectivity with source water bodies. On the Giacomini Ranch, grazing by dairy cows, spreading of manure, and ditching has decreased water quality within creeks, ditches, and ponds, leading to a relatively depauperate aquatic community composed almost exclusively of fish and invertebrates tolerant of harsh conditions. Wetlands on the Giacomini Ranch largely consist of monotypic expanses of wet pasturelands created through seeding of non-native grasses and herbs and lack the structural habitat diversity so important to wildlife. Most of the wildlife use and diversity that does occur comes from the mix of habitat at the ranch's edge, where seeps create riparian forests and freshwater marshes adjacent to the expanses of pasture. The pastures often support only scattered numbers of roosting waterfowl, foraging raptors and passerines, small mammals such as voles, and the occasional mule deer or red fox, with most of the waterfowl and shorebirds attracted to the few ponds, ditches, and shallowly flooded areas on the ranch. The conversion of Olema Marsh to freshwater marsh through diking has ostensibly increased its attractiveness to some wildlife species, such as waterbirds, but it likely has also displaced species that could have historically occurred in the transitional zone between fresh and salt water, such as the federally listed endangered species, tidewater goby (*Eucyclogobius newberryi*).

Wetland and floodplain functionality is particularly important in Tomales Bay. Historically, the Bay has been viewed as a pristine estuary and even used as a reference site in ecological studies. However, the largely rural nature of this watershed has not rendered it immune to impact from human uses, including failing septic systems, agriculture, mercury mining, landfill operations, and oil spills. Beaches and swimming areas within the Bay and adjacent areas sometimes must be closed due to poor water quality conditions. During the last decade, poor water quality has forced one of the bay's leading industries, oyster fisheries, to close down several times and, in the late 1990s, was associated with a virus outbreak in people eating oysters from Tomales Bay. Mercury mining in the Tomales Bay watershed during the late 1960s-1970s caused deposition of mercury-contaminated sediment into the Bay and continues to threaten commercially and recreationally important fisheries. Watershed threats are not limited to internal ones, either: the bay's proximity to San Francisco's high-volume shipping lanes has resulted in contamination from oil spills. The failure of Tomales Bay to consistently meet water quality standards for designated beneficial uses such as oyster mariculture and public recreation and wildlife needs prompted the San Francisco District of the Regional Water Quality Control Board (RWQCB) to designate the bay and some of its subwatersheds as impaired for sediment, nutrients, pathogens, and mercury under Section 303(d) of the Clean Water Act. The RWQCB is in the process of finalizing or developing several new water quality standards for Tomales Bay through the Total Maximum Daily Load (TMDL) process, which sets maximum limits of loading to designated water bodies for pollutants of concern such as sediment, nutrients, pathogens, and mercury.

Water quality problems threaten not only the oyster fisheries and humans using the Bay for recreational purposes, but the freshwater, estuarine, and marine wildlife species that use Tomales Bay for breeding or foraging habitat. Because of its importance to wildlife, Tomales Bay is not only part of the Golden Gate Biosphere Reserve and a California Critical Coastal Area, but in 2002, it was nominated as a "Wetland of International Importance" under an international treaty called the Convention on Wetlands (commonly known as the Ramsar Convention). Tomales Bay is also one of 16 wetland areas that qualify for inclusion as a wetland of regional importance under the Western Hemisphere Shorebird Reserve Network because of its large number of wintering and migrating shorebirds (Kelly 2001). The bay represents the second largest Pacific Herring spawning estuary in the state of California and is home to some of the state's largest populations of birds such as bufflehead (*Bucephala albeola*), black brant (*Branta bernicla*), red knot (*Calidris canutus*), and riparian associates such as saltmarsh common yellow-throat (*Geothlypis trichas sinuosa*; Sacramento USFWS Species of Concern and California Species of Concern). The water quality problems described above have the potential to cause widespread adverse effects to these and other important wildlife populations that use the bay for all or part of their life cycles, including critical stages such as breeding or the early stages of development (such as for fish nurseries). Elevated mercury levels continue to be problematic

for many fish species, especially for those near the top of the food chain such as sharks, and are high enough that fish consumption advisories for humans were established in 2000 for many bay-endemic species.

These threats have galvanized community-led efforts to improve the health of Tomales Bay. The Tomales Bay Watershed Council, which is composed of watershed stakeholders from many different agencies and organizations in Marin and the surrounding San Francisco Bay region, recently developed a stewardship plan that has established water quality improvement and restoration and preservation of the integrity of natural habitats and native communities as key goals (TBWC 2003). These goals are consistent with those of the Park Service, which has begun to incorporate enhancement and restoration as well as preservation and conservation of natural resources into its stewardship mission. The Park Service strongly emphasizes restoration of the quality of surface and ground waters and wetland processes and functions in its Management Policies (NPS 2006). The Seashore and the GGNRA have embarked upon a number of enhancement and restoration projects that focus on improving the quality of natural resources within these parks, with the proposed project being one of the largest.

The Watershed Council believes that achievement of the water quality goal will come primarily through reducing non-point sources of water pollution (TBWC 2003). However because wetlands act as filters for contaminants and sediment before they reach the bay, restoration projects such as that proposed for the Giacomini Ranch would also help meet this objective. Two-thirds of the freshwater inflow – and potentially the principal source of nutrients, pathogens, and sediment -- to Tomales Bay comes from directly upstream of the Giacomini Ranch (Fischer et al. 1996). Reconnecting or improving the hydrologic connection between the Project Area and Tomales Bay would also restore several hundred acres of scarce wetland habitat for wildlife, including some that are listed as threatened or endangered by regulatory agencies, thereby also enabling the proposed project to help the council meet one of its other goals – restoration of the integrity of natural habitats and native communities.

The potential importance to the health of Tomales Bay and the outer Marin coastline of restoring hydrologic connectivity between the Giacomini Ranch, Olema Marsh, and Tomales Bay is underscored by the relative scarcity of coastal wetlands present along the central California coastline. Giacomini Ranch and Olema Marsh account for as much as 12 percent of the historic wetlands present along the outer central California coast and as much as 1 percent of wetlands along the entire outer California coastline. The relative scarcity of coastal wetlands present within this watershed and the surrounding California coastline increases their importance and the impact of losses that have occurred.

Purpose of Proposed Project

Background on Property Purchase and Mitigation Requirements

In February 2000, the Park Service purchased the Giacomini Ranch in Point Reyes Station for the purposes of restoring the historic coastal marsh. The Giacomini Ranch is located within the north district boundary of the GGNRA, which is administered by the Seashore. The Seashore also owns approximately 50 percent of Olema Marsh, with Audubon Canyon Ranch, a project partner, owning the other half. The Giacomini Ranch dairy and adjoining areas were incorporated into the GGNRA boundary when it expanded in 1980, although the ranch and many other lands remained in private ownership at that time. During the 1980s, the Park Service held discussions with the Waldo Giacomini family about possibly acquiring the Project Area for wetland restoration. At that time, the Giacominis indicated that they were willing to sell most of the lowland or pasture parcels and selected portions of upland parcels on the Point Reyes Mesa, but wanted to retain ownership of several parcels in the West Pasture along Sir Francis Drake Boulevard and a portion of the Dairy Facility that fronts C Street in Point Reyes Station.

Purchase of these parcels did not become feasible, however, until the Park Service secured the necessary funding from CalTrans and congressional appropriations. In the early 1990s, the California Coastal Commission (CCC) ordered CalTrans to mitigate for impacts to natural aquatic habitat resources associated with repair of State Route 1 in the vicinity of Lone Tree Creek in Marin County after landslide damage in early 1990. CalTrans decided to look for opportunities to transfer mitigation obligations rather than performing mitigation in-house and considered several projects along the Marin coastline. During this period, the GGNRA

contracted with an independent hydrologist to assess the feasibility of restoring natural wetland conditions to the Giacomini Ranch lands. The hydrologists concluded that restoration of the Ranch was, indeed, feasible, and developed some preliminary restoration concepts (Philip Williams Associates (PWA) et al. 1993). This information provided support for selection of the Giacomini Ranch as the CalTrans-funded mitigation site. In August 1997, the Park Service signed a Memorandum of Understanding (MOU) with CalTrans and the CCC, allowing the Park Service to assume CalTrans' mitigation obligations for the Lone Tree Slide.

In this agreement, the Park Service assumed responsibility for 3.6 acres of mitigation obligations with the understanding that monies would be used for purchasing the Giacomini Ranch for inclusion into the national park system and planning and implementation of a wetland restoration project. The Park Service also secured monies from congressional appropriations to help purchase the Ranch. While the legal agreement between CalTrans and the park only obliges the park to mitigate 3.6 acres, all agencies agreed that more fully restoring lands on the acquired property was the ultimate goal, and the MOU called for restoration of a "significant portion" of the historic marsh.

Transfer of the mitigation money to the Park Service was approved by the CCC on the condition that the Park Service "…would accomplish all requirements of the mitigation plan." These requirements included the items below:

1) Creation of subtidal and intertidal habitat comparable in character to the area that was impacted by the road repair on State Route 1 near Lone Tree Creek; OR
2) Restoration of previously degraded or filled marine or the removal of historic fill, improvement of water circulation, and such other steps as will create or improve habitat for fish, water birds, and other marine or marine-related species.
3) A qualified biologist must prepare a marine mitigation plan that includes a five-year monitoring program and definition of "success" such that density of flora and fauna is comparable with that in surrounding or nearby habitat areas of the same type.

In a separate agreement with the Park Service, CalTrans also stipulated that restoration on the Giacomini Ranch would be in a "manner consistent with the general plan set forth in the feasibility study (PWA et al. 1993).

Currently, as part of the purchase agreement with the Giacomini family, most (463 acres) of the Giacomini Ranch is being managed under reservation of use by the former landowners until 2007, when full management will be transferred to the Park Service. The Giacominis have retained a 25-year reservation of use agreement on the Giacomini Hunt Lodge, a small building located on the eastern perimeter of the property. The Park Service is currently in negotiation with the Giacomini family to exchange some of the upland parcels on the Dairy Facility Mesa for some of the remaining lowland parcels that are still owned by the Giacomini family. Compliance for this transaction is being conducted separately from the proposed project, because the land exchange is not essential for restoration efforts to proceed. While an agreement had not been reached as of the date of this document, the land exchange is considered a reasonably foreseeable project and is included in the Cumulative Impact Analysis.

Project Purpose and Relationship to Park Service Mission and Policies

Background

At the time the Memorandum of Understanding was signed with the CCC and CalTrans, the Park Service described its purpose in purchasing the Giacomini Ranch as "restoring freshwater and saltwater wetlands." As noted earlier, the Giacomini Ranch and Olema Marsh once formed an integrated tidal wetland system with a complex network of tidal creeks and open water areas that likely supported numerous invertebrates, fish, shorebird, and waterfowl species. Large stands of riparian habitat probably once fringed portions of the Project Area where groundwater was abundant or creeks were present. While a large proportion of the Giacomini Ranch and Olema Marsh is still technically "wetland," as it is seasonally saturated and supports

plants adapted to wet soils, these wetlands have been substantially altered and degraded since the late 1800s through a variety of human activities. Logging and agricultural development in the late 1800s and early 1900s accelerated sediment delivery, greatly expanding the size and vertical elevation of the tidal marshes at the mouth of Lagunitas Creek. Levees and installation of culverts and tidegates on major drainages within the Project Area have eliminated or substantially reduced the influence of tides and dramatically altered creek and groundwater hydrology within the former coastal marshes at the Giacomini Ranch and Olema Marsh.

In the Giacomini Ranch, many of the remnant sloughs and creeks have been ditched and are regularly dredged to maintain capacity for irrigation water, affecting plant and invertebrate communities and negatively affecting water quality. Filling, land leveling, manure spreading, mowing, and grazing have dramatically changed the characteristics of the soils and vegetation, as well as its value to wildlife. While there are pockets of native, largely freshwater vegetation communities such as freshwater marsh, wet meadows, and riparian habitat, long-term agricultural management has turned most of the Giacomini Ranch into a monotypic expanse of pasture dominated by non-native grasses and herbs. South of the Giacomini Ranch, construction of two road crossings and several past fill events on its source creek, Bear Valley, have converted Olema Marsh from a tidal marsh to an impounded freshwater marsh system, threatening the extent of fringing riparian habitat, as well as the potential of the Bear Valley Creek subwatershed to support certain wildlife species such as federally-threatened steelhead trout (*Oncorhynchus mykiss*) and federally-endangered coho salmon (*Oncorhynchus kisutch*).

Historically, the Park Service has focused more on preservation and conservation rather than restoration. However, it has come to realize that preservation may not be enough to fulfill the mandates of the Park Service Organic Act of 1916 (Organic Act) or the enabling legislation of many of the park units. Without some action, many valued Park Service assets may continue to degrade or even cease to exist, thereby leaving no legacy for enjoyment of future generations. Recent management policies acknowledge this need to move beyond simple preservation of the "scenery and natural and historic objects and the wild life therein" by encouraging parks to restore natural systems. Furthermore, these policies direct parks to focus on restoring functions, processes, and values within a larger context than just the site, such as the watershed or hydrologic system of creeks and bays in which the Project Area occurs, and also to not necessarily just focus on structure or structural features such as acres of a particular habitat or some specific mix of habitats.

In its 2006 Management Policies, the Park Service urges parks to "re-establish natural functions and processes in parks unless otherwise directed by Congress…..Impacts on natural systems resulting from human disturbances include .....changes to hydrologic patterns and sediment transport; the acceleration of erosion and sedimentation; and the disruption of natural processes. The Service will seek to return such disturbed areas to the natural conditions and processes characteristic of the ecological zone in which the damaged resources are situated"(NPS 2006, Section 4.1.5).

Wetlands receive special emphasis in the 2006 Management Policies. The Park Service states that it will "strive to achieve a longer term goal of net gain of wetlands across the national park system through restoration of previously degraded or destroyed wetlands" (NPS 2006, Section 4.6.5). Where natural wetland functions have been degraded or lost due to previous or ongoing human activities (e.g., drainage facilities, structures, agriculture), parks are strongly encouraged to "reestablish environments in which wetland ecological processes can function as they did prior to disturbance, to the extent practicable" (Director's Order #77-1). The 2006 Management Policies also call for parks to "protect, preserve, and restore the natural resources and functions of floodplains" (NPS 2006, Section 4.6.4), which includes benefits such as floodwater storage. In addition, all necessary actions to maintain or restore the quality of surface waters and groundwaters within parks to levels consistent with the Clean Water Act and all other applicable federal, state, and local laws and regulations should be taken (NPS 2006, Section 4.6.3).

Restoration of water resources and aquatic habitat has been identified as a high priority objective by the Seashore in its General Management Plan (NPS 1980) and Resource Management Plan (NPS 1999). The Seashore's Statement for Management sets the primary resource management objective for the Seashore as the identification, protection, perpetuation, and restoration of "… the diversity of natural ecosystems representative of the California coast" (NPS 1993).

Project Purpose

Through integration of baseline resource information, restoration science tenets, Park Service policy, and mitigation and contractual obligations, the Park Service and the CSLC have developed a purpose, objectives, and planning criteria that were used to guide design of alternatives for the proposed project. In addition to the primary purpose, the Park Service and the CSLC have identified three objectives and 12 planning criteria that either define the purpose more clearly or expand upon the purpose to include other desirable goals. The proposed project's primary purpose and objectives are individually identified and described below. In addition, the Park Service and the CSLC identified primary project constraints that would need to be factored strongly into considering during design, analysis, and implementation.

> *Purpose*: The purpose of the proposed project is to restore natural hydrologic processes within a significant portion of the Project Area, thereby promoting restoration of ecological processes and functions.

Restoration of hydrologic processes would involve

- removal or lowering of levees;
- removal of tidegates;
- removal or replacement of culverts;
- elimination of ditches;
- creation of tidal channels; and
- realignment of creeks into some of their historic channel alignments.

These restoration actions would reintroduce daily tidal action to the now diked wetlands and allow creeks to flood onto their floodplains during storm events. In addition, the discontinuation of agricultural management practices such as ditching and dredging and removal or modification of infrastructure such as levees, tidegates, and culverts would increase the integrity of geomorphic processes within creeks or fluvial systems such as active channel movement, creation of instream habitat features (e.g., pools), and deposition and transport of sediment. Within this very dynamic transitional zone of the Tomales Bay estuary, characterized by freshwater conditions in the winter and saline conditions in the summer, reintroduction of natural hydrologic processes would convert monotypic, non-native-species-dominated pasturelands into a complex mosaic of vegetation communities and potential wildlife habitats that would include salt marsh, freshwater marsh, wet meadows, mesic and dry grasslands, and riparian habitat. Most importantly, reestablishment of natural hydrologic processes would strongly increase functionality of these wetlands, potentially having dramatic effects on reduction of flooding to adjacent properties, quality of waters flowing into Tomales Bay, and habitat and food chain support of wildlife species.

Project Area – View from Northeast

By focusing on restoration of process and function, this project complies with Park Service management policy directives to "re-establish natural functions and processes" and "return human-disturbed areas to the natural conditions and processes characteristic of the ecological zone in which the damaged resources are situated..." The multi-agency Memorandum of Understanding with which the Park Service needs to comply specifies that mitigation requirements be met through restoration of previously degraded or filled wetland areas by improving water circulation and taking other steps to improve habitat for fish, water birds, and other marine and marine-related species. Restoring natural hydrologic processes is key to improving water circulation and thereby improving habitat for coastal species. In addition, by focusing on removing impediments to process rather than creating and maintaining structure, we are moving away as are others in the wetland restoration community from the "garden" approach to wetland restoration and recognizing the inherent dynamic variability of estuarine transitional systems, thereby decreasing the need for future intervention and maintenance and supporting the recent emphasis within the Park Service on developing sustainable and low–maintenance projects.

The Park Service has developed a preliminary monitoring program framework that will help it determine whether the proposed project has met 1) its purpose and objectives and 2) mitigation and monitoring requirements imposed by the CCC on the types of habitat restored and the quality of this restored habitat relative to supporting the "density of flora and fauna … comparable with that in surrounding or nearby habitat areas of the same type."

Project Objectives

The project objectives not only describe the project purpose in more detail, but identify other "purposes" that are considered desirable. The three objectives are identified and described below:

- *Objective*: *Restore natural, self-sustaining tidal, fluvial (streamflow), and groundwater hydrologic processes in a significant portion of the Project Area, thereby enabling reestablishment of some of the ecological processes and functions associated with wetland and riparian areas, such as water quality improvement, floodwater storage, food chain support, and wildlife habitat.*

- *Objective*: *Pursue a watershed-based approach to restoration in that restoration planning for the Project Area will emphasize opportunities to improve ecological conditions within the entire Tomales Bay watershed, not just in the Project Area itself.*

  Water quality problems in Tomales Bay have spurred the Seashore to either spearhead or actively participate in several pollutant source reduction and ecological restoration efforts being undertaken within the watershed. The centerpiece of the Seashore's efforts in this regard is the Giacomini Wetland Restoration Project. Recognizing the need to expand the benefits of restoration beyond the immediate Project Area, the Seashore and CSLC identified a watershed-based restoration approach as one of the proposed project's objectives early in the planning process. This goal focuses on the idea that restoration should help improve the health of the Tomales Bay watershed. One of the most crucial ways in which this proposed project can assist with watershed goals is through improving the quality of waters entering Tomales Bay. Two-thirds of the freshwater inflow – and, therefore, the potential nutrient, sediment, and pathogen sources – flow into Tomales Bay just upstream of the Giacomini Ranch (Fischer et al. 1996). By removing the levees along Lagunitas Creek, floodwaters carrying sediment and pollutants can flow and settle onto 550 acres of floodplains, where nutrients, pathogens, and contaminants would be filtered and transformed or uptaken by plants. Removing the levees would also increase the amount of floodwaters that could be stored in pastures, potentially reducing the frequency and extent of flooding of and the destructive energy of flood flows to adjacent properties. In addition, restoring hydrologic connectivity would result in improved conditions and food chain support for marine and estuarine wildlife species in Tomales Bay, as well as in the Project Area.

  This watershed-based view of restoration is also in keeping with the Park Service Management Policy direction, which states that, "the Service recognizes that cooperation with other land managers can accomplish ecosystem stability and other resource management objectives when the best efforts of a single manager might fail" (NPS 2006, Section 4.1.4). Local communities and the Tomales Bay Watershed Council have indicated support for the proposed project and have developed projects and initiatives of their own aimed at improving water quality and watershed conditions within the bay. Widespread support from the community bordering the ranch for the project is in large part due to its importance to helping restore conditions in the Tomales Bay watershed. The Point Reyes Station Community Plan (Marin County Community Development Agency 2000) stated that the Giacomini Ranch should be restored to "natural conditions." In addition to its efforts to reduce pollution within the bay, the Tomales Bay Watershed Council has developed a Stewardship Plan (TBWC 2003) that urges that watershed members, including the Park Service, to: 1) protect and promote restoration of proper functioning and hydrology of streams and floodplains and 2) evaluate and optimize tidal circulation in leveed marshes.

- *Objective*: *To the extent possible, incorporate opportunities for the public to experience and enjoy the restoration process as long as opportunities do not conflict with the project's purpose or with Park Service, CSLC, or other agency legislation or policies.*

The Park Service Management Policies (2006) state that, "providing opportunities for appropriate public enjoyment is an important part of the Service's mission." (NPS 2006, Section 8.1). The policies directly address the recreation and educational values of wetlands, noting that, "when practicable, the Service will not simply protect, but will seek to enhance, natural wetland values by using them for educational, recreational, scientific, and similar purposes that do not disrupt wetland functions" (NPS 2006; Section 4.6.5). Internal and public scoping for the proposed project identified public access as a key issue in the planning for this restoration effort. The extensive amount of wetlands and sensitive biological resources present in the Project Area makes the integration of public access while ensuring that it "does not disrupt wetland functions" into the proposed project challenging. However, the Park Service and the CSLC have committed to incorporating opportunities for the public to learn about the value of wetlands, the problems facing Tomales Bay, and the restoration process through trails, viewing areas, interpretative exhibits, and volunteer/educational opportunities. In addition, the Seashore and the CSLC also plan to enable people with disabilities to experience wetlands and the restoration process by providing appropriate public access facilities for those with disabilities.

Planning Criteria

Through information gathered in both public and internal scoping efforts, the Park Service and the CSLC further refined the project purpose and objectives into planning criteria. These prioritized criteria provided a conceptual framework for development of a range of feasible restoration and public access alternatives by converting the project purpose into a number of definitive or concrete planning criteria associated with restoration of natural hydrologic and ecological processes and functions. By creating criteria, Park Service and CSLC staff had better tools for assessing the value and appropriateness of proposed alternatives or alternative actions. In addition to incorporating certain wetland processes, functions, and features that the Park Service and CSLC wants to increase or reestablish such as increasing floodplains or reintroducing tidal flow, the planning criteria also address some existing features or species that the Park Service and the CSLC hope to preserve such as the freshwater-dependent species, California red-legged frog (*Rana aurora draytonii*); the brackish water-dependent species, tidewater goby; and the shallow shorebird habitat currently present in the East Pasture of the Giacomini Ranch.

Primary Project Constraints

In developing a range of feasible alternatives, many factors can act to constrain alternatives' development and implementation. These include legal or regulatory constraints, logistic and technical constraints, and environmental restrictions. Many of these constraints are evaluated as subject topics under impact analysis, but certain critical constraints warranted additional consideration during the process of developing alternatives and restoration and public access actions. These constraints include:

- *Constraint: Flood risks to adjacent private residences and public roads would not be increased above current levels.*

  The Giacomini Ranch and adjoining areas fall within the 100- and 500-year floodplain and experience substantial flooding even during 10-year events. Private residences along Levee Road and Sir Francis Drake Boulevard directly adjacent to the West Pasture flood regularly, as do the county roads themselves. Park Service guidelines for floodplain management, including Executive Order 11988 and National Park Service Director's Order #77-2, direct the direct federal agencies to reduce the risk of flood loss and to minimize the impact of floods on human safety, health and welfare, as well as to restore and preserve the natural and beneficial values served by floodplains.

- *Constraint: Saltwater intrusion conditions into groundwater wells in Point Reyes Station would not exceed current levels, or any increase caused by the proposed project would be mitigated by the project proponents.*

  North Marin Water District (NMWD) operates a municipal groundwater well for the town of Point Reyes Station in an alluvial aquifer directly north of the Project Area. During the summer, when demand is highest, NMWD has experienced salinity intrusion into its groundwater wells as evidenced by chloride concentrations that exceed thresholds established by NMWD (100 mg/L) and, occasionally, recommended Maximum Contaminant Levels (MCL) of 250 mg/L set primarily for aesthetic or taste

reasons by the California Department of Health Services. NMWD currently operates under an off-tide pumping regime during high tide events to try and minimize potential intake of chlorides into the alluvial aquifer from saltwater sources. Prior to purchase of the Giacomini Ranch by the Park Service and during public scoping, NMWD expressed concerns regarding the potential for increased salinity intrusion with removal of the levees and restoration of the Ranch to tidal wetlands.

- *Constraint*: *Impacts to the amount of breeding habitat for the tidewater goby and California red-legged frog would be minimized to the extent practicable. Existing habitat would not necessarily be managed in situ or in current locations, but rather would be allowed to develop elsewhere in response to changes in the hydrologic regime and boundary between salt- and freshwaters following implementation of restoration.*

  During baseline wildlife surveys, breeding populations of the federally-endangered tidewater goby and federally-threatened California red-legged frog were discovered in the Project Area. These brackish and freshwater species have undoubtedly responded at some point in the past to changes in conditions in the Giacomini Ranch and Olema Marsh due to diking and impoundment of freshwater, although brackish- and freshwater habitat has probably always existed to some degree in this transitional estuarine zone. The importance to the Park Service, CSLC, and Audubon Canyon Ranch (which owns a portion of the Olema Marsh) of preserving these special status species is underscored by their inclusion as planning criteria. However, in assigning priority rankings for planning criteria, the Park Service, CSLC, and Audubon Canyon Ranch had to weigh the technical feasibility and advisability of attempting to expand habitats or improve conditions for all special status species given the very different and even conflicting habitat requirements of some of these species and the nature of the landscape being restored. The Park Service mandates parks to protect and to strive to recover all species native to national park system units that are listed under the Endangered Species Act and to manage designated critical and essential habitats for the benefit of listed species (NPS 2006; Section 4.4.2.3). Regulatory constraints regarding special status species are discussed in more detail under the Legislative and Policy Guidance and Constraints section below.

Legislative and Policy Guidance and Other Considerations Used in Developing Purpose and Alternatives

The Park Service mission and policies on management and restoration of natural systems such as wetlands factored substantially into formulation of the project purpose, objectives, and constraints. Legislative, regulatory and policy guidance comes from Park Service-related legislation and policies, CSLC policies, as well as regulations, policies, programs, and plans promulgated by federal, state, and local agencies. These laws, regulations, and policies include the federal Clean Water Act, the state Lake and Streambed Alteration Agreement Process, the federal and state Endangered Species Acts, the California Coastal Act and Local Coastal Program, the Marin Countywide Plan, and the Point Reyes Station Community Plan. Other considerations may also bear on the development of restoration and public access components of the proposed project, such as technical restoration constraints, construction windows driven by wildlife habitat considerations and environmental conditions, and needs and interests of the public, which are discussed separately later in this section. **Those pieces of legislation, regulations, policies, and other considerations and issues instrumental to developing the project purpose, alternative framework, and design of restoration and public access actions are described below.** A complete list of federal and state laws and regulations which the proposed project would need to comply with prior to implementation can be found in Chapter 5.

Those pieces of legislation, regulations, policies, and other considerations and issues instrumental to developing the project purpose, alternative framework, and design of restoration and public access actions are described below.

National Park Service Legislation

National Park Service Organic Act of August 25, 1916 (National Park Service Organic Act, PL 64-235, 16 USC §1 et seq. as amended). On August 25, 1916, Congress created the Park Service with the National Park Service Organic Act. This act, as reaffirmed and amended in 1970 and 1978, establishes a broad framework of policy for the administration of national parks. The purpose of parks is "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

National Park Service Management Policies, 2006. The Park Service Management Policies apply to all units of the national park system, including the Seashore and the GGNRA. Adherence to policy is mandatory unless specifically waived or modified by the Secretary of the Interior, the Assistant Secretary of the Interior, or the Director of Park Service. Sections most relevant to the proposed actions — some of which have been discussed previously — are Sections: 4.1.4, Partnerships; 4.1.5, Restoration of Natural Systems; 4.4.1, General Principles for Managing Biological Resources; 4.4.2, Management of Native Plants and Animals; 4.4.2.2, Restoration of Native Plant and Animal Species; 4.4.2.3, Management of Threatened and Endangered Plants and Animals; 4.4.2.4, Management of Natural Landscapes; 4.4.4, Management of Exotic Species; 4.6.3, Water Quality; 4.6.4, Floodplains; 4.6.5, Wetlands; 4.6.6, Watershed and Stream Processes; 8.2, Visitor Use; 8.2.4, Accessibility for Persons with Disabilities.

Specific Park Legislation and Policies

The Giacomini Ranch falls within the north district of the GGNRA, although it is managed by the Seashore. Therefore, in developing projects, the Park Service must consider the enabling legislation of both park units.

Golden Gate National Recreation Area. Congress established the GGNRA by Public Law 92-589 "in order to preserve for public use and enjoyment certain areas of Marin and San Francisco Counties, California" (San Mateo County added by P.L. #96-607). In addition to providing for recreation and educational opportunities consistent with sound principles of land use planning and management, the Park Service was also instructed to "preserve the recreation area, as far as possible, in its natural setting, and protect it from development and uses which would destroy the scenic beauty and natural character of the area" (PL 92-598).

Point Reyes National Seashore. Congress established the Seashore on September 13, 1962 "to save and preserve, for purposes of public recreation, benefit and inspiration, a portion of the diminishing seashore of the United States that remains undeveloped (Public Law 87-657)." An amendment to Public Law 94-544 (passed in 1976) states that the Seashore is to be administered without impairment of its natural values. In addition to administering the north district of GGNRA (and therefore the Giacomini Ranch), the Seashore also owns approximately 50 percent of Olema Marsh.

Seashore/GGNRA General Management Plans Update. Both the General Management Plans (GMPs) for the Seashore and GGNRA are currently being updated. As with the previous version of the GMP, the new version of the Seashore GMP will include north district GGNRA lands in Olema Valley and Tomales Bay such as the Giacomini Ranch. Scoping for the GMP update has been conducted, and the plan is currently being prepared. The entire planning process is expected to take 4-5 years. In the interim, the park continues to implement the goals and comply with the direction and guidance of the existing GMP prepared in 1980. The proposed project, while not specifically cited in the earlier document, is consistent with the policies of the existing GMP. Actions not covered under the existing GMP are implemented through complying with NEPA and Park Service planning processes.

Seashore Resources Management Plan. The Resources Management Plan (RMP) for the Seashore was updated in 1999. The Plan presents an inventory of natural and cultural resources; describes and evaluates the current resources management program; and prescribes an action program based on legislative mandates, NPS policies, and provisions of related planning documents.

Executive Orders

Executive Orders are issued by the Office of the President and apply to all federal agencies.

Executive Order 11990: Protection of Wetlands. This Executive Order established the protection of wetlands and riparian systems as the official policy of the federal government. It requires all federal agencies to consider wetland protection as an important part of their policies and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance their natural and beneficial values. If a proposed action is found to be in a wetland, the agency shall prepare a wetland assessment, known as a Statement of Findings (Park Service Directors Order 77-1).

Executive Order 11988: Floodplain Management. This Executive Order requires federal agencies to avoid, to the extent possible, adverse impacts associated with the occupancy and modification of floodplains and to avoid development in floodplains whenever there is a practical alternative. Federal agencies are to "…take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains." If a proposed action is found to be in the applicable regulatory floodplain, the agency prepares a floodplain assessment, known as a Statement of Findings (Park Service Directors Order 77-2). The Project Area falls within the 100-year and 500-year floodplains and, when levees are removed, has the potential to alter the impact of floods on adjacent lands, homes, and roads, some of which represent important access routes for residents on the Point Reyes Peninsula.

Other Federal Legislation

National Environmental Policy Act (NEPA) of 1970. PL 91-190, 83 Stat. 852, 42 USC §4341 et seq. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences and take actions that protect, restore, and enhance the environment. Regulations implementing NEPA are set forth by the Council on Environmental Quality (CEQ). Additional regulations are provided by the Park Service, including Park Service Director's Order #12, which ensures that the document meets Department of Interior and Park Service standards. The Park Service is the lead NEPA agency and the primary project proponent and manager.

Federal Water Pollution Control Act (Clean Water Act) and subsequent amendments of 1977 (33 USC §1251 et seq.). The Clean Water Act provides for the restoration and maintenance of the physical, chemical, and biological integrity of the nation's waters. Section 404 (33 U.S.C. 1344) of the Act prohibits the discharge of fill material into navigable waters, tributaries to navigable waters, and special aquatic sites of the United States, including wetlands, except as permitted under separate regulations by the U.S. Army Corps of Engineers (the Corps) and U.S. Environmental Protection Agency. Under Section 401 (33 U.S.C. 1341), states can assume responsibility for Section 401 oversight and can review and approve, condition, or deny all Federal permits or licenses that might result in a discharge to state or tribal waters, including wetlands. This project would potentially involve removal or breaching of levees on creeks, realignment of creeks, and excavation and/or permanent or temporary fill in special aquatic sites such as wetlands. It also has the potential to affect water quality within the Project and in downstream water bodies. Because of this, the project will require Section 404 permits from the Corps and Section 401 certification from the San Francisco Regional Water Quality Control Board. Applications for Section 404 permits and Section 401 certifications would be submitted subsequent to preparation of the environmental document.

Coastal Zone Management Act of 1972, as amended through PL 104-150, The Coastal Zone Protection Act of 1996 (16 U.S.C. §1451 et seq.). This act protects coastal environments and transfers regulatory authority to the states and excludes federal installations from the definition of "coastal zone." Within California, the California Coastal Commission (CCC) administers the state program (California Coastal Act) for implementation of the federal Coastal Zone Management Act (CZMA). Any action by a federal agency such as the Park Service requires a federal consistency determination by the CCC as required by CZMA. The CCC manages fill, dredge, and other non-point activities affecting wetlands within the Coastal Zone. In California, the Coastal Zone is broken into Local Coastal Program (LCP) units that specifically oversee land use and management of resources within their jurisdiction (see section "State and Local Legislation, Policies, and Plans"). This project falls within the Coastal Zone and has wetlands and riparian areas that would be subject

to oversight under the Coastal Act and the LCP. The Park Service would make a determination regarding consistency and submit to the CCC for concurrence subsequent to preparation of the environmental document.

Endangered Species Act of 1973, as amended, PL 93-205, 87 Stat. 884, 16 USC §1531 et seq. The Endangered Species Act protects threatened and endangered species from unauthorized "take", and directs federal agencies to ensure that their actions do not jeopardize the continued existence of listed species. Section 7 of the act defines federal agency responsibilities for consultation with the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) for fish and marine mammal species. Consultation requires preparation of a Biological Assessment to identify threatened or endangered species that are likely to be affected by the proposed action. Presence of these species or their habitat affects projects on several levels, specifically proponents:

- must avoid harming listed species either through "take" or through harassment, unless incidental take authorized by USFWS;
- must avoid impacts to habitat deemed as "Critical" to species or must mitigate for impacts to habitat; and
- must avoid undertaking construction and/or maintain a construction buffer during critical seasons such as breeding and nesting when listed species are present.

Several federally threatened or endangered species, as well as Critical Habitat, have been documented in the Project Area. The Park Service and CSLC will be initiating formal consultation with the USFWS and NMFS concurrent with preparation of the environmental document and will design construction phasing so as not to interfere with critical breeding and nesting seasons.

Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §703-712). The Migratory Bird Treaty Act decreed that all migratory birds and their parts (including eggs, nests, and feathers) were fully protected. The MBTA protects all common wild birds found in the United States, except the house sparrow (*Passer domesticus*), European starling (*Sternus vulgaris*), feral pigeon (*Columbia livia*) and resident game birds such as pheasant, grouse, quail, and wild turkeys (*Meleagris gallopavo*). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 Code of Federal Regulations (C.F.R.) Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R. 21). "Taking" is considered disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young). Both special status and common bird species breed and nest in or on the perimeter of the Project Area. Construction would need to be phased to avoid breeding and nesting season, and/or pre-construction bird surveys would need to be conducted.

Magnuson-Stevens Fishery and Conservation Management Act, as amended (PL 94-265, 16 U.S.C. §1801). The Magnuson-Stevens Fishery Conservation and Management Act is the governing authority for all fishery management activities that occur in federal waters within the United States 200 nautical mile limit, or Exclusive Economic Zone (EEZ). One of the potentially applicable components of this act is that it requires conservation and enhancement of Essential Fish Habitat (EFH). Defined by Congress as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity," the designation and conservation of Essential Fish Habitat seeks to minimize adverse effects on habitat caused by fishing and non-fishing activities such as dredging and filling. Species that are regulated under EFH include chinook (*Oncorhynchus tshawutscha*) and coho salmon, both of which have been sighted in Lagunitas Creek, which runs through the center of the Project Area (Figure 2). EFH consultation would occur concurrent with the Section 7 Endangered Species Act consultation with NMFS (see Endangered Species Act above).

Federal Access Legislation. Both the Architectural Barriers Act of 1968 (PL 90-480) and the Americans with Disabilities Act (ADA) of 1990 (PL 101-336) help to ensure that buildings and other facilities meet set standards to make them accessible to all visitors, including those with disabilities. The Park Service complies with ADA standards and, in order to provide the maximum opportunity for visitors to experience national parks, follows the stricter of either the Americans with Disabilities Act Accessibility Guidelines (ADAAG; 36 CFR part 1191) developed in 1991 or the Uniform Federal Accessibility Standards (UFAS) established in 1984. Standards for outdoor recreational facilities such as trails often follow recommendations issued in September 1999 by a special regulatory negotiation committee convened by the Architectural and Transportation Barriers Compliance Board (Access Board). Based on these guidelines, the Park Service requires that walks or paths that connect to accessible features and that key features in the park need to be made accessible while being

kept consistent with preserving the natural and cultural resources of the park. Public access is proposed as part of this project and is subject to these standards. This project could involve construction of trails on state and county lands and so require compliance with the more stringent handicap access standards of the California Building Code, Title 24 regulations, although the Title 24 standards are intended for urban facilities and not necessarily rural and park-type trails.

State and Local Legislation, Policies, and Plans

Federal projects are not subject to state and local legislation, unless state and local authorities have assumed authority for a federal law (i.e., Section 401 of the Clean Water Act, the Coastal Zone Management Act). However, as this is a joint federal and state project, it must comply with all applicable state and local legislation on state- and county-owned lands.

California Environmental Quality Act (Public Resources Code §21000 et seq.). CEQA is the California equivalent of NEPA that applies to projects undertaken or requiring approval from state and local governments. While many aspects of CEQA are similar to NEPA, there are some differences, including in terminology, structure of the environmental document required, noticing, evaluation and analysis of alternatives, and requirements regarding mitigation for significant environmental effects. In addition, CEQA provides that all species of concern (e.g., any species considered at-risk by the California Native Plant Society) be considered as protected, regardless of appearance on a formal federal or state Endangered Species Act (ESA) lists (State CEQA Guidelines, Section 15380 (b)(d)). The lead CEQA agency for this project is the CSLC.

Porter-Cologne Act (California Water Code, Division 7, §13000). The Porter-Cologne Act is the principal law governing water quality control in California. It establishes a comprehensive program to protect water quality and the beneficial uses of waters of the State. The Porter-Cologne Act applies broadly to all State waters, including surface waters, wetlands, and ground water; it covers waste discharges to land as well as to surface and groundwater, and applies to both point and non-point sources of pollution. The Regional Water Quality Control Boards (RWQCB), which also administer Section 401 of the federal Clean Water Act, govern the nine hydrologic regions into which California is divided, adopting regional water quality control plans (basin plans) for their respective regions. Water quality control plans designate beneficial uses of water, establish water quality objectives to protect those uses, and provide a program to implement the objectives. This project has the potential to affect surface waters and could therefore require certification from the San Francisco RWQCB under Section 401. In addition, the San Francisco RWQCB has established beneficial uses and associated water quality criteria for Tomales Bay and Lagunitas Creek, which runs through the Project Area (Figure 2).

California Endangered Species Act (Fish and Game Code, § 2050 et seq.). Similar to the federal government and the Endangered Species Act, the state of California has designated certain wildlife and plant species as endangered, threatened, or rare. Regulation of activities affecting these species is handled by the California Department of Fish and Game (CDFG). Sections of the Fish and Game Code prohibits "take" of any species that the commission determines to be an endangered species or a threatened species; the take, possession, or destruction of birds, their nests or eggs; and/or disturbance that causes nest abandonment and/or loss of reproductive effort. Both federally and state-listed endangered and threatened species occur in the Project Area and vicinity. Project proponents will consult with CDFG for species occurring on state, county, and private lands and, if necessary, initiate a permitting process subsequent to preparation of the environmental document. Construction would also be phased to avoid breeding and nesting season, and/or pre-construction surveys would be conducted.

County of Marin Countywide Plan Update (2005). The County of Marin is currently in the process of updating its Countywide Plan (CWP; Marin County Community Development Agency). The purpose of the Plan Update is to set policy guidelines for future conservation and development in the county and to address changed conditions since the last revision of the CWP. The CWP establishes an overall framework and set of goals for countywide development in the unincorporated area of the County. The draft CWP establishes a number of policies aimed at protecting and restoring natural resources, preserving existing parklands and values, preserving the rural character of West Marin, maintaining a viable agriculture and mariculture industry where it exists, and improving transportation conditions through reducing traffic and promoting alternative transportation such as bicycles. It also makes reference to the need for pedestrian and bicycle trail in the vicinity of the Giacomini Ranch, Point Reyes Station, and Inverness Park.

Marin County Local Coastal Program, Unit II (LCP). In 1976, the California Legislature enacted the Coastal Act, which created a mandate for coastal counties to manage the conservation and development of coastal resources through a comprehensive planning and regulatory program called the Local Coastal Program (LCP; Marin County Comprehensive Planning Department 1981). The LCP govern decisions that determine the short and long term conservation and use of coastal resources. In general, within the Coastal Zone, the LCP supersedes any other county or local ordinances. The Project Area occurs in Marin LCP Unit II. The LCP policies require protection, enhancement, and restoration of environmentally sensitive habitats (including wetlands and riparian habitat); protection and expansion of public access to the shoreline and recreational opportunities and resources; protection of the scenic coastal landscape; and protection of productive agricultural lands. In addition, the LCP supports the concept of a public access route within certain portions of the Project Area and establishes a buffer for protection of the Point Reyes Mesa bluff area within and immediately adjacent to the Project Area. As noted earlier, the proposed project would require federal consistency review by the California Coastal Commission (See Coastal Zone Management Act under Federal Environmental Legislation).

Point Reyes Station Community Plan (2000). The Point Reyes Station Community Plan (Marin County Community Development Agency 2000) establishes objectives and policies and programs for a number of land use, socioeconomic, and natural resource issues within the unincorporated area of Point Reyes Station. Several of the natural resource objectives specifically pertain to the Giacomini project, specifically:

- support for restoration of the former tidal marshes at the headwaters of Tomales Bay to natural conditions and protection of the restored wetland in the future through review of development projects or construction activities in consultation with the Park Service and other relevant public agencies and incorporation of either impact avoidance or mitigation measures;
- preservation of the physical, ecological, and visual integrity of the bluff area located above the old railroad right-of-way through the development review process establishment of a 100-foot buffer zone extended eastward from the eastern edge of the railroad grade;
- preservation of streams and streamside environments in their natural conditions, including protection of existing riparian habitat or “buffers” and removal of invasive plant species;
- protection and restoration of Tomasini Creek through allowing the downstream portion to resume its natural slough channel west of Mesa Road, thereby promoting recolonization by steelhead; and
- protection of Lagunitas Creek, specifically its water quality, coho salmon and steelhead populations, and other aquatic life.

Marin County Unincorporated Area Bicycle and Pedestrian Master Plan (June 2001). This document includes several proposed bicycle and pedestrian projects in various parts of the unincorporated area of Marin, including in or near the Project Area. The proposed trails or bikeways in or near the Project Area would connect 1) Point Reyes Station to Inverness (Proposed Trail #4 in the plan) and 2) Point Reyes to Marshall (Proposed Trail #6 in the plan; Alta Transportation Consulting 2001).

Other Considerations

Technical and Logistic Considerations. One of the largest considerations in developing a tidal wetland restoration project is the existing topographic conditions. These existing topographic conditions largely dictate the approach or framework for restoration and the type of specific restoration actions that are undertaken. Should an area be greatly subsided or its surface elevations dropped significantly since diking, the plan for restoration would often require a longer-term approach that involves either bringing in sediment or encouraging natural sedimentation to create wetlands in what would otherwise be an open water area. In areas that have aggraded or become higher in elevation since levee construction, such as the Project Area, the primary technical consideration often involves getting rid of enough sediment to effect restoration, which poses both logistical and funding constraints on project development. Sediment excavation is not only inherently costly, but, in restoration projects, the goal would be to remove most of this excavated material off-site, which can be costly and have impacts on local and regional traffic patterns and roads. Ultimately, restoration projects involving aggraded areas are often constrained in the amount of material that can be excavated and moved off-site, because of associated costs and traffic impacts.

In addition to topographic conditions, the development of wetland restoration projects is also driven by possible contamination uses from past site uses and construction "windows" that often require phasing of projects over a number of years. The construction windows during each year of construction are dictated by site conditions (area dry enough to allow equipment access), onset of the rainy season (permits often restrict construction during wet conditions), and spatial and temporal constraints associated with breeding, nesting, or rearing of special status and migratory bird species (permits often restrict construction or require sizeable buffer during breeding and nesting season, which varies according to species).

Issues and Concerns Raised During Scoping

Public, Agency, and Internal Scoping Process

Under NEPA and CEQA, project planning begins with scoping: a determination of the bounds and purposes of the project. Scoping is conducted with involvement of agencies and the interested public and is intended to "insure that real problems are identified early and properly studied; that issues that are of no concern do not consume time and effort; that the draft statement when first made public is balanced and thorough; and that the delays occasioned by re-doing an inadequate draft are avoided" (Council on Environmental Quality 1981).

A preliminary list of potential scoping issues was first developed through internal scoping, including meetings and a site visit with Park Service staff to the Project Area. A public scoping meeting was held on October 19, 2002, at the Dance Palace in Point Reyes Station. The Seashore also held a meeting with federal, state, and local agencies and organizations in early November 2003. The public and agencies were also encouraged to voice concerns about potential issues during a formal public comment period that followed the two meetings. A more detailed discussion of public scoping can be found in Chapter 5.

Additional Public and Agency Comment and Input after Scoping

Because scoping is considered an ongoing process in the Park Service, the Park Service and CSLC continued efforts at early involvement by holding a series of internal Park Service meetings, as well as workshops with agencies and the public in 2004 to get feedback on the range and appropriateness of the preliminary restoration and public concepts developed. In early 2004, the Park Service and CSLC conducted workshops with agencies and adjacent landowners to present preliminary alternatives and solicit input. The culmination of these series of alternative workshops was an alternatives workshop for the general public, held on June 22, 2004. Public input on the range and appropriateness of alternatives was solicited both through a question-and-answer period, as well as break-out groups to encourage more detailed discussion. In addition, comment in the form of letters and emails following the workshop was also encouraged. A more detailed discussion of post-scoping public outreach efforts can be found in Chapter 5.

Scoping Issues and Concerns

Issues and concerns raised during scoping and informal public comment provide the basis for the selection of the "impact topics" that will be addressed in the environmental consequences section of this DEIS/EIR. Listed below are some of the major topics raised during public scoping and informal public comment. A more detailed description of issues and concerns raised can be found in Chapter 5.

- Need within the community for improved and safer public access and the compatibility of public access with restoration.
- Effect on wetland, riparian, and upland ecotone habitats;
- Short-term and long-term effects on water quality within the Tomales Bay watershed;
- Effect on flooding of adjacent roads and homes;
- Effect on salinity intrusion into local municipal groundwater wells;

- Effect on special status plants and animals, including salmonids, California red-legged frog, tidewater goby, and rails.
- Inclusion of Olema Marsh in proposed project
- Potential impacts on adjacent landowners and the character of the local community, including potential increases in traffic, noise, and parking problems;
- Potential impacts to local agriculture from land conversion;
- Effects on public health in the local community from disease vectors such as mosquitoes.

Impact Topics Analyzed in this DEIS/EIR

The purpose of an environmental document is to evaluate and compare the effect or impact that a range of potential project alternatives could have on the human environment. The Council on Environmental Quality, which provides guidance for preparation of federal environmental compliance documents, defines the "environment" as not only natural resources, but human-related ones, including topics such as public health and safety, socioeconomics, and environmental justice, etc. The potential effect of a project is determined by separating the "environment" into related impact topics such as geology, soils, vegetation, public health and safety, public services, socioeconomics, etc., which are then individually assessed relative to the range of alternatives to ascertain and compare potential project impacts.

Impact topics included in this DEIS/EIR are described below: they were selected on the basis of internal, public, and agency scoping and baseline studies and are the areas where the Park Service and CSLC staff believe negligible to major impacts might occur from implementing one of the proposed alternatives. Baseline or existing conditions for these impact topics are described in detail for the Project Area and surrounding region in Chapter 3, Affected Environment. Potential impacts resulting from implementation of any of the proposed alternatives is the subject of an entire chapter, Chapter 4, Impact Analysis.

Land Use

While conservationists halted large-scale development plans in west Marin in the 1960s, helping to create the Seashore in the process, the region continues to struggle with land use issues into the new century. Since the 1800s, west Marin has supported dairy and beef cattle ranches and was once identified as one of the leading dairy regions in California. Market dynamics of an increasingly globalized economy, however, are threatening the ranching way of life in this rural enclave of the San Francisco Bay region. In addition, the strong housing market in Marin and elsewhere in the San Francisco Bay area continues to place pressure on undeveloped areas within the county, although approximately 48 percent of this county has already been protected as park, open space, or water district lands. West Marin comes under the purview of several land use plans that are trying to balance economic viability with preservation of scenic, natural resource, and agricultural values, including the Marin Countywide Plan, the Local Coastal Program, and the Point Reyes Station Community Plan. In addition, activities in lands of the Seashore and north district of GGNRA are also guided by internal Park Service documents such as the General Management Plan, which is currently being updated, and the Resource Management Plan. The local community plan supports restoration of the Giacomini Ranch (Point Reyes Station Community Plan; Marin County Community Development Agency 2000), however, the proposed project has generated some concerns among members of the community with regards to how it might affect the character of these rural and highly popular tourist destination towns. In addition, discontinuation of the Giacomini Ranch has the potential to affect local agriculture and agricultural land uses in the vicinity of the Project Area.

Geologic Resources

The Seashore and adjacent GGNRA lands are geologically unique. Geology plays a critical role in wetland formation and maintenance. Geologic conditions within Tomales Bay, which is formed on the San Andreas Fault rift valley, are largely defined by the movement of the Pacific and Continental plates along the San Andreas Fault, as well as coastal-dominated geologic processes associated with sea level rise and retreat. The

San Andreas Fault runs directly through the Project Area, overlapping in areas with either the current or historic course of Bear Valley Creek and Lagunitas Creek in this portion of Tomales Bay. As of 1862, most of the southern and eastern portions of the Giacomini Ranch were low-lying intertidal marsh, with the northwestern portion largely subtidal and intertidal lands. However, excessive sedimentation from logging and other land use disturbances during the late 1800s-early 1900s greatly accelerated sediment transport and deposition, resulting in almost a doubling of wetland acreage within Tomales Bay (Parsons et al. 2004c) and nearly 5 feet of vertical soil accumulation in southern portions of the watershed (PWA et al. 1993). Despite construction of levees in the 1940s, the vertical elevation of the Project Area has dropped little due to subsidence or compaction of soils. The proximity of the Project Area to the fault and Pacific Ocean may change the potential for impacts from catastrophic geohazards such as surface fault rupture, liquefaction, landslides or tsunamis resulting from implementation of certain project components such as public access. Project implementation would also involve changes to the Project Area topography, largely through grading and excavation.

Soil Resources

This region's unique geology has also created a complex mosaic of soil and bedrock formations within Seashore and north district GGNRA lands. These soils play an integral role in wetland functions such as water quality improvement by binding and/or transforming nutrients, pathogens, and contaminants. As of 1862, most of the southern and eastern portions of the Giacomini Ranch and Olema Marsh were largely classic intertidal marsh soils composed of tidally derived estuarine muds and peat. A period of rapid and excessive sedimentation from erosion in upper portions of the Lagunitas Creek and other Tomales Bay subwatersheds during the late 1800s-early 1900s, however, converted the Giacomini Ranch to a fluvial or creek-dominated sediment deposition environment, with influx of substantial amounts of silts, sands, and gravels. Conversely, the Olema Marsh is still underlain by a thick layer of peat soils that is promoted currently by long-term water impoundment and associated reduction in rates of organic matter breakdown.

Deposition of alluvial materials has created soil types that are attractive for agricultural use. The southeastern 156.5 acres of the Giacomini Ranch has been mapped as having Farmland of Statewide Importance soils, with the remainder of the ranch and Olema Marsh mapped as Farmland of Local Importance soils (California Department of Conservation 2002). Areas with these types of soils receive special protection from both federal and state agricultural agencies that are designed to minimize conversion of agriculturally important farmland. Soil resources can be impacted by excessive nutrients from high intensity cattle grazing or manure spreading or from excessive influx of contaminants such as lead or mercury. Heavy equipment would be used to remove levees and create or enhance habitat features, remove roads and infrastructure, fill ditches, and construct public access infrastructure, thereby potentially disturbing soil resources. In addition, excavation may disturb soils that are high in nutrients or contaminants.

Air Resources

While air resources are rarely the primary resource drawing visitors to parks, they highly influence visitors' enjoyment of other park resources. Air resources within marine-influenced, rural West Marin are above average in quality, particularly when compared to the more urbanized areas of San Francisco Bay, however, air quality can be negatively affected by activities both inside and outside of the Seashore. The use of heavy equipment during construction can increase short-term production of pollutants, such as exhaust and dust, depending on incorporation and adherence to standard Best Management Practices (BMPs). Construction projects also have the potential to impact natural soundscapes. The Project Area is adjacent to a rural community where quiet is highly valued by residents and visitors. Heavy equipment would be used during construction and may therefore, temporarily affect existing soundscapes depending on incorporate and adherence to standard BMPs. Long-term, the proposed project could impact both air quality and soundscapes through potential increases in traffic and noise associated with changes in visitation rates.

Water Resources – Hydraulics and Hydrologic Processes

The complex geologic setting of the Seashore has resulted in an equally complex hydrologic setting, characterized by tides, creeks with seasonal and perennial water flow, and abundant groundwater from springs and seeps. The Project Area lies at the upstream end of the Tomales Bay estuary. Hydrologic and

geomorphic processes such as flooding and sediment transport are integral to wetland functions such as floodwater retention, dissipation of flood flow energy, water quality improvement, groundwater recharge, and export of food to marine and estuarine organisms. The influence of tides, creeks, and groundwater in the Project Area has been adversely impacted by levees, culverts, tidegates, flashboard dams, ditching, and realignment of creek channels. This project is focused primarily on improving natural hydrologic processes within the Project Area through breaching or removal of levees, removal or modification of culverts, removal of tidegates, elimination of ditches and ditching practices, excavation of new tidal creeks, realignment of creek channels, although construction of public access trails and bridges has the potential to adversely affect hydrologic process. Over the long term, hydrologic processes and functions within Tomales Bay and the Project Area may be affected by sea level rise, which recent scientific information suggests may be occurring at a faster rate than originally predicted.

Water Resources – Water Salinity and Water Quality

One of the more important hydrologic functions of wetlands is water quality improvement. As noted earlier, this project is focused primarily on improving natural hydrologic processes and functions within the Project Area. The Project Area occurs in the estuarine transition zone, which is very dynamic hydrologic environment in terms of salinity with water salinities very low during the winter and spring and higher, sometimes almost at marine concentrations, during the late summer and fall. Currently, water quality currently within the Project Area is not highly eutrophic, although there are episodic spikes in concentrations of nutrients such as nitrates and ammonia and consistently high levels of pathogen indicator bacteria such as fecal coliform. Fecal coliform levels are also elevated in sections of creeks in the Project Area such as Lagunitas and Bear Valley that are downstream of other dairies or agricultural operations. In addition, some ditches in the Giacomini Ranch have chronically low levels of oxygen in the water that affects the ability of aquatic organisms such as invertebrates and many fish species to persist.

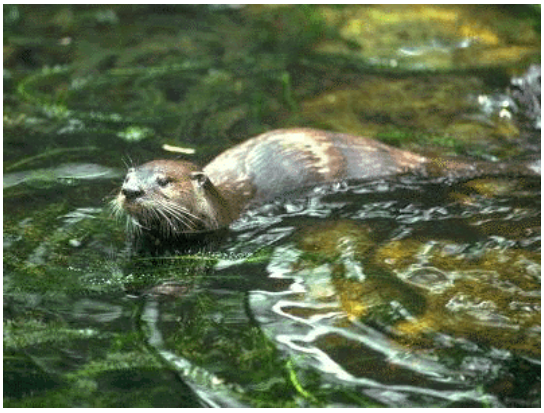
Point Reyes' historic preeminence as a coastal dairy ranching region has contributed along with other factors, such as leaking septic systems and discharge of bilges on boats, to water quality problems in the Tomales Bay watershed. Tomales Bay and some of its subwatersheds have been declared impaired by the San Francisco RWQCB under Section 303(d) of the Clean Water Act for sediments, nutrients, pathogens, and/or mercury. The proposed project has the potential to affect water quality both in the Project Area and in Tomales Bay through changes in land management practices and removal or modification of infrastructure that reduces hydrologic connectivity between the Project Area, source creeks, and Tomales Bay. During construction and shortly after the proposed project is completed, there is some potential for short-term adverse impacts to water quality during flooding when sediments on marshplains that were disturbed by earthmoving are suspended into floodwaters and carried downstream.

Vegetation Resources

The complexity of geologic and hydrologic resources within the Project Area is associated with an extremely high diversity of vegetation communities and plant species. Most of the vegetation communities present in the Project Area have remained wetland or riparian in nature despite diking and disturbances from other land management activities. However, the type of wetland has changed greatly, with salt and brackish marsh being converted in both the Giacomini Ranch and Olema Marsh to freshwater wetlands such as Wet Pasture and Freshwater Marsh. The extent of riparian habitat has been reduced dramatically by land management practices such as levee and culvert maintenance, as well as by grazing on the Giacomini Ranch and possibly increases in water levels in Olema Marsh. Wetland and riparian habitats are integral components of many wetland functions, such as reducing the erosive power and height of flood flows, filtering pollutants out of water, providing food and habitats for both resident and non-resident wildlife species, including endangered or threatened wildlife species. The Project Area supports several plant species that are of federal, state, and local concern. By reestablishing natural tidal and freshwater hydrologic processes, the proposed project has the potential to change the type and quality of habitats that are present, including the quality and potentially the extent of wetlands and habitat for special status plant species and non-native invasive species. In addition, construction also has the potential to cause a temporary or short-term change in existing conditions for vegetation, wetlands, and special status plant species.

Fish and Wildlife Resources

One of the most important functions that wetlands and riparian habitats play is to provide food chain support and habitat for wildlife, both common and special status species. While the Project Area supports resident and non-resident wildlife, some of which are even special status species, the functionality of diked wetlands for wildlife is typically lower than that of undiked wetlands. Many wildlife species are attracted to the mosaic of habitats that occur on the Giacomini Ranch's perimeter, utilizing salt marsh, freshwater marsh, riparian habitat, and even pasture (ARA 2002). Olema Marsh's expansive freshwater marsh and fringing riparian habitat supports numerous breeding birds in the spring and waterfowl in the fall and winter. However, in general, habitat diversity in the Giacomini Ranch and even Olema Marsh is low, with most of the Giacomini Ranch covered by a monotypic community of wetland grasses and herbs. In addition, levees and poor hydrologic connections with downstream water bodies allow limited export of food resources from the Project Area and use of the Project Area by marine and estuarine species in Tomales Bay.



River Otter

Some special status wildlife species appeared to have established as a result of the minimization or elimination of tidal influence. The Project Area is home to one federally endangered species, one federally threatened species, and several species of federal, state, and local concern, including the California red-legged frog (federally threatened), northwestern pond turtle (*Clemmys marmorata marmorata; species of concern for the Sacramento USFWS District*), and tidewater goby (federally endangered). The removal of levees not only has the potential to negatively affect species adapted to freshwater or brackish water, but may allow introduction and/or spread of invasive wildlife species such as the European green crab (*Carcinus maenas*), which has been sighted in the undiked areas adjacent to Giacomini Ranch and possibly in the Giacomini Ranch West Pasture. The proposed project focuses specifically on improving wetland functions, including support and habitat for wildlife. However, construction has the potential to cause adverse impacts during construction to species and their habitat, particularly aquatic species, depending upon the implementation and adherence to BMPs designed to avoid or reduce temporary and short-term impacts on migratory and special status wildlife species and their habitats.

Cultural Resources

The history of Native American settlement, European exploration, and historic-era colonization of the Seashore and GGNRA has left a legacy of valuable archeological and historic resources. Cultural resource and historic structure surveys did not identify any archaeological resources or human remains in the Project Area. Several cultural landscape features were identified and recorded, including a historic-period railroad bed, a historic-period levee system and dam, and two manure ponds near the Dairy facility (Newland 2003; Garcia and Associates 2004).. The dam was a temporary gravel structure that the Giacominis installed each summer to provide some freshwater for irrigation purposes, but installation was discontinued prior to selling the property to the Park Service. The consultants and the Park Service have determined that none of these features qualify for listing as a historic structure by the State Historic Preservation Office (SHPO): The Park Service will be coordinating with SHPO to obtain concurrence with these determinations. Some of the alternatives include filling and grading of the manure ponds, and one of the public access components would involve either placement of dirt fill or installation of an elevated boardwalk on the historic railroad grade.

Public Health and Safety

As with many other parks in developed regions, the Seashore and north district GGNRA are not isolated preserves, but rather integrated components of larger communities comprised of a mix of private, County, state, and federal ownership. In developing projects in parks such as these, the Park Service not only needs

to consider the health, safety, and welfare of park visitors and employees, but the local community as a whole. Some of the most important public health and safety issues for visitors, staff, and the local community are flooding and the potential for transmission of disease through vectors such as mosquitoes that breed in natural and artificially created wet areas such as livestock ponds and ditches. Situated at the confluence of several large creeks (Lagunitas, Olema, and Bear Valley), the Project Area and vicinity are located within the 100-year floodplain and have been subjected to numerous devastating floods during the last 100 years, including the 1982 flood, the 1998 flood, and, most recently, the 2006 flood. In areas where levees are removed, flooding can be a concern. However, one of the hydrologic functions that the proposed project hopes to restore is reduction in flooding of adjacent homes and roads by hydrologically reconnecting Lagunitas Creek and some of the other tributaries to their historic floodplains on the Giacomini Ranch and Olema Marsh. In addition, increasing connectivity of creeks with wetlands and riparians has the potential to dissipate or dampen the erosive energy of flood flows. While wetlands offer benefits to humans and wildlife, they also raise concerns about the potential for increase disease vectors such as mosquitoes that carry diseases such as West Nile Virus, which poses a significant health risk to seniors, children, and immuno-compromised individuals. Because of concerns about West Nile Virus and other mosquito-borne viruses, West Marin was recently annexed into the Marin-Sonoma Mosquito Abatement District.

Public Services

Wetlands can benefit public services such as municipal groundwater supply through playing an instrumental role in recharge of groundwater systems. However, while increasing floodwater retention and water quality improvement potential, reestablishing tidal hydrologic processes has the potential to increase the total volume of tidal waters within southern Tomales Bay and the amount of saltwater moving up Lagunitas Creek to the North Marin Water District (NMWD) municipal groundwater wells near the Coast Guard facility in Point Reyes Station. NMWD is already forced at certain times during the summer, when freshwater flows drop and water demand increases, to temporarily shut off one of its wells to minimize the historical salinity intrusion problems that it has had with its well system, which serves the town of Point Reyes Station, Inverness Park, and other local areas.

The proposed project may also affect traffic and transportation in the local community. Most of West Marin is served by a network of two-lane highways and roads, some of which serve as the only route that provides access to certain areas. Not only would construction potentially have temporary impacts on community residents, visitors, Seashore staff, and emergency staff through movement of construction equipment and excavated soils, but the proposed project might have long-term impacts on traffic by increasing the amount of visitors coming to the Point Reyes Station-Inverness Park area to view the completed restoration project and use public access facilities.

Visitor and Resident Experience

Enjoyment of park resources and values by the people of the United States is a fundamental purpose of all parks. Park visitors go to national parks for natural beauty, a sense of quiet, and opportunities to enjoy physical activities such as hiking, camping, swimming, kayaking and canoeing, rafting, fishing, skiing, climbing, bird-watching and other wildlife viewing, as well as to learn about the important events or periods in our past through historic landmarks, museums, and other facilities. With more than 50 percent of its lands in public ownership or conservation easement, Marin County is one of the leaders in the San Francisco Bay region in terms of providing access to both residents and visitors. While many parks primarily serve visitors who come from outside the park's region, the majority of the 2.5 million visitors who come to the Seashore each year live in the San Francisco Bay area. In 2002, more than 700,000 visitors visited the three Seashore visitor centers, and more than 70,000 visitors had extended contacts with park interpretative staff through ranger-led programs.

Because the Giacomini Ranch has been privately owned until recently, the only formal trails are those on lands owned by the Seashore and GGNRA and lands managed by the County of Marin Parks and Open Space District. There has been little formal trail development in the Project Area, however, several informal trails have established along portions of the Giacomini Ranch's levees and are used for walking, dog-walking, bird-watching, and other passive recreational pursuits. The Park Service and CSLC have carefully worked to incorporate opportunities to experience and enjoy the restoration process through public access, which is one of the project objectives. However, the proposed project has the potential to affect some or all of the existing

public access and viewshed resources in the Giacomini Ranch and Olema Marsh and may have temporary impacts on park visitors, local residents, and staff through increases in construction-related traffic and potential temporary closures in roads.

Socioeconomics

The Seashore is one of the 30 most visited parks in the National Park system. It is a destination park for national and international visitors, as well as a regularly visited resource for the 5 million residents of the nine counties that comprise the greater San Francisco Bay Area. Marin County has a $500 million annual tourist industry, and it is estimated that the Seashore contributes over $150 million to the regional economy visitor expenditures on dining, fuel, gifts, groceries, and lodging (NPS 2002). The proposed project has the potential to affect socioeconomics of the local community and the West Marin region through changes in visitation to the towns of Point Reyes Station and Inverness Park, which are reliant to some degree on tourism for economic viability. In addition, construction activities has the potential to have short-term adverse impacts on visitation to the Project Area and region by increasing construction-related traffic and traffic delays on roads or causing temporary road closures.

Park Management and Operations

Parks must take into consideration the impact of proposed projects on park management and operations, including staffing and budget. Most parks receive operations funding through Congressional appropriation, although some parks receive monies from revenue generated from park entrance fees, etc. The proposed project has been funded differently than many other park programs or projects, in that it has received a majority of its funding from non-park sources, including mitigation monies from CalTrans and other settlement funds and grants from private non-profit organizations. This funding has been and would be used for acquisition of the Giacomini Ranch, planning and permitting, and construction. While construction of the project is being funded with non-Park Service monies, the proposed project has the potential to affect park staff and the management and operations budget through maintenance and management of the property and public access components after implementation is completed.

Impact Topics Dismissed from Further Assessment

The following impact areas or topics analyzed during scoping would not appear to be affected by the proposed project, or the effects would be at the lower limits of detection. These impact topics or areas are dismissed from further assessment in the DEIS/EIR and are listed and described below.

Unique Ecosystems, Biosphere Reserves, World Heritage Sites

The Project Area is located along the coastal margin of the Golden Gate Biosphere Reserve, which encompasses the Seashore, the GGNRA, and portions of the central California coast south of the GGNRA. Acreage of lands in the biosphere totals approximately 523,906 acres. It extends from Bodega to Jasper Ridge south of San Francisco and out from the shore approximately 30 miles to the edge of the Continental Shelf and includes the Farallon Islands. Because of the overall size of the biosphere, the proposed project would be expected to have a non-detectable or negligible effect on the Golden Gate Biosphere Reserve.

Environmental Justice in Minority and Low Income Populations

In 1994, President Clinton issued Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations. This EO requires that federal agencies make environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. A proposed project could have a major or substantial effect on Environmental Justice if it were to disproportionately affect minority or low-income members of the community or tribal resources. Based on 2000 census data for Marin County, Point Reyes Station, the largest town adjacent to the Project Area, is approximately 87.3 percent white, 9.3 white Hispanic or Latino, and 3.4 percent other races. The Federated

Indians of Graton Rancheria, which recently became federally recognized, once had traditional lands in the vicinity of the Project Area, but there are no current land holdings in the Project Area. The proposed project would have no impact on Environmental Justice, because minority and low income populations are weakly represented in West Marin and the Point Reyes Station areas, and the proposed project would not be expected to adversely affect the health or environment of minority and low income peoples present.

Tribal Land Use and Sacred Sites

The proposed project would not have an effect on tribal land use or sacred sites. Surveys were conducted as part of baseline studies for the proposed project (Newland 2003), and no potential sacred sites were found to exist in the Project Area.

Energy Resources

The proposed project would only have a very slight effect on the sustained use of energy within the region. The action alternatives involve use of heavy equipment for one construction season. The proposed project does not involve the sustained use of energy supplies. The action alternatives would have a short-term, negligible adverse affect on energy resources. Closure of the dairy would be expected to reduce long-term energy demand at the Giacomini Ranch through discontinuation of large water pumps, as well as mechanical equipment associated with the Dairy facility.

Long-Term Management of Resources and Land/Resource Productivity

The proposed project is consistent with long-term general management plans for the Seashore and the GGNRA and would, therefore, have no effect on long-term management of resources.